STAFF REPORT: FEBURARY 17, 2021 MEETING PREPARED BY: B. CAGNEY
APPLICATION NUMBER: 21-7096 & 21-7104
ADDRESS: 15327 WARWICK
HISTORIC DISTRICT: ROSEDALE PARK
APPLICANT: ERROL PARKS / **GS GROUP THROUGH** HOUSING & REVITALIZTION DEPARTMENT (21-7096);
ALUNDA BOYKIN (21-7104)
PROPERTY OWNER: ALUNDA BOYKIN
SCOPE OF WORK: REPLACE 6 WINDOWS WITH VINYL WINDOWS (21-7096); REPLACE 6 ADDITIONAL WINDOWS WITH VINYL WINDOWS (21-7104)
DATE OF PROVISIONALLY COMPLETE APPLICATION: 2/9/2021
DATE OF STAFF VISIT: 2/4/2021

15327 Warwick, front (west) elevation, staff photo.

Existing Conditions

The 1-1/2 story home located at 15327 Warwick was erected in 1939. The understated orange-brown brick home has a side gabled roof and an attached garage. It features such character-defining features as articulated brick headers above the 8/12 true divided light wood windows and around the circular

casement window. The double-hung windows feature stone sills at grade, with inset wood paneling from the sills to the bottom of the windows. Both windows have white shutters that begin at the header and terminate at the sill. The dormers and side gables are clad in a non-historic horizontal siding material, installed prior to Rosedale Parks historic designation. The home features an attached garage with two single-car doors. The garage is set back from the main body of the home, creating a vestibule behind the circular casement window with the front entryway facing south, not apparently visible when looking at the front elevation. The second story windows appear to have storm windows attached, staff is unable provide the material or operation of these windows.

HDC archives do not have any other Certificates of Appropriateness on file for this address. BSEED records indicate that that a Hanson's Windows applied for a permit BLD2018-04025 on 6/13/2018 but the permit application expired on 7/13/2020, as records indicate that this application was not routed to HDC staff for review. Application 21-7096 was administratively approved in error by HDC staff on 1/29/2021 prior to HDC review; that permit was subsequently cancelled as it was issued in error on 2/4/2021 as it required HDC review.

~~The initial application (21-7096) was put forward to bid by the City of Detroit Housing and Revitalization Department as part of the 0% interest home repair loan program.~~ **GS Group released the bid for 21-7096 on behalf of HRD and were contracted to handle this program.** The windows tested positive for lead content and require remediation. On 2/1/21, HDC staff received an application (21-7104) for permit through E-Plans, BLD2021-00298, also submitted by Hanson's. This application was followed up with subsequent information about the proposal from the homeowner, submitted on 2/15/21 and has been added to the current scope of work for Historic District Commission review.

Proposed Scope of Work: The applicant is seeking the Commission's approval to replace (12) twelve double-hung windows and the existing asphalt shingle roof.

Window Replacement (21-7096):

- Window 1 – First floor, Front of home- wood, double hung – grid pattern 8/12 -- to be replaced with Vinyl Max double-hung vinyl window, as proposed, with unspecified grid pattern.
- Window 2- First Floor, Front of home - wood, double hung – grid pattern 8/12 -- to be replaced with Vinyl Max double-hung vinyl window, as proposed, with unspecified grid pattern.
- Window 3- First Floor, South Side (1) - wood, double hung – grid pattern 6/9 -- to be replaced with Vinyl Max double-hung vinyl window, as proposed, with unspecified grid pattern.
- Window 4- First Floor, South Side (2) - wood, double hung – grid pattern -- 6/9 to be replaced with Vinyl Max double-hung vinyl window, as proposed, with unspecified grid pattern.
- Window 5- First Floor, South Side (3) - wood, double hung – grid pattern 8/12 -- to be replaced with Vinyl Max double-hung vinyl window, as proposed, unspecified grid pattern.
- Window 6- First Floor, South Side (4)- wood, double hung – grid pattern 8/12 -- to be replaced with Vinyl Max double-hung vinyl window, as proposed, unspecified grid pattern.

Roof Replacement (21-7096):

- Remove existing asphalt shingle roof down to roof boards.
- Install new 7/16" OSB and new dimensional asphalt shingles to match existing color or approved historic color

- Roof replacement to include new necessary underlays, ice and water shield at all eaves and valleys, and aluminum t-drip at all edges.

Window Replacement (21-7104):

- Window 1 –Second floor, South Side (1) wood, double hung – grid pattern 6/6 -- to be replaced with Hanson's double-hung vinyl window, as proposed, with 2x1 grid pattern.
- Window 2 –Second floor, South Side (2) wood, double hung – grid pattern 6/6 -- to be replaced with Hanson's double-hung vinyl window, as proposed, with 2x1 grid pattern.
- Window 3 –Second floor, Rear (2) non- original (material unknown) double hung, 1/1 – Bathroom window, to be replaced with Hanson's double-hung vinyl window, as proposed, with no grid pattern and half-obscured glass.
- Window 4 –Second floor, North Side (1) wood, double hung – grid pattern 6/6 -- to be replaced with Hanson's double-hung vinyl window, as proposed, with 2x1 grid pattern.
- Window 5 –Second floor, North Side (2) wood, double hung – grid pattern 6/6 -- to be replaced with Hanson's double-hung vinyl window, as proposed, with 2x1 grid pattern.
- Window 6 –Second floor, North Side (3) wood, double hung – grid pattern 6/6 -- to be replaced with Hanson's double-hung vinyl window, as proposed, with 2x1 grid pattern.

Staff Observations and Research:

- The Rosedale Park Historic District was designated in 2007.
- Two of the windows proposed for replacement are on the front (west elevation) of the home and the other windows are on the sides and rear.
- The replacement of the asphalt shingle roof is administratively approvable by staff.

Issues (21-7096):

- The contractor for application 21-7096 stated to staff that the replacement windows have already been ordered and delivered as he was trying to comply with the specifications in the bid document. Staff received these photos on 2-17-21.
- The specification that the contractor received ~~from Housing Revitalization Department~~ **through GS Group** listed the following requirements: *"Replace all doublehung window units on the first floor of dwelling with new solid vinyl double-hung replacement windows with muntin bars, (Divided Light) insulated glass, screens and tilt-in cleaning feature. NOTE: Same Style, Configuaration & Pattern. Enclose window frames, trim, sills, lintels, and mullions with custom fit aluminum coil stock."*
- **Housing and Revitalization Department Staff communicated that vinyl windows were not appropriate in an e-mail to GS group on October 9, 2020. A recommendation to change the vinyl to wood replacement for the degraded windows. Ultimately, these changes were not made prior to releasing the spec for bid.**
- While the bid document does list vinyl replacement in the spec, it also states "*This Dwelling has been Designated Historic. Work Specification to be reviewed and approved by the Historic Commission prior to the Bid Invitation. Exterior color and element design choices to be approved by Historic before Notice to Proceed."*

- It is not clear if the author of the bid document, the homeowner, or the contractor have considered alternate means of lead remediation prior to the replacement of these character defining features.
- The proposed VinylMax Radiance Plus window replacements include the operable sash, jambs and sill as one replacement unit.
- The proposed windows feature unspecified grid patterns. Staff has requested more information from the applicant and is awaiting clarification from the contractor.
- The proposed windows, are VinylMax vinyl windows with the following features:
    - Full overlap interlock and mylar fin, synthetic weatherstripping at meeting rail.
    - Sloped sill diverts water away from the interior.
- It is not clear if the lead can be remediated in an alternate means besides replacing the entire window unit in this situation.
- The U.S. Department of the Interior Technical Preservation Brief # 37, *Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing*, offers guidance for remediation and preserve character-defining features, as listed below.
    - "Features and finishes of a historic building that exhibit distinctive characteristics of an architectural style; represent work by specialized craftsmen; or possess high artistic value should be identified so they can be protected and preserved during treatment."
    - "When it is absolutely necessary to remove a significant architectural feature or finish-as noted in the first two priorities listed below-it should be replaced with a new feature and finish that matches in design, detail, color, texture, and, in most cases, material."
    - "To make historic housing lead-safe, the gentlest method possible should be used to remove the offending substance-lead-laden dust, visible paint chips, lead in soil, or extensively deteriorated paint. Overly aggressive abatement may damage or destroy much more historic material."
- It is staff's opinion that the replacement of the existing historic windows is not appropriate as proposed because the proposed vinyl windows are not appropriate for historic districts.

Issues (21-7104):

- Staff has the same concerns for application 21-7104 as application 21-7096: It is staff's opinion that the replacement of the existing historic windows is not appropriate as the proposed vinyl windows do not match the original in design, color, texture, and material.

Recommendation 1: Windows (21-7096 & 21-7104):

- Staff recommends that the proposed replacement of original wood, true divided light windows with vinyl replacement windows will eliminate character defining features of the home and will not be appropriate according to the standards of review set forth in the state and local legislation. Therefore, HDC staff recommends that the Commission issues a denial for the proposed work, as the proposed work fails to meet the Secretary of the Interior's Standards, specifically Standard 6) *Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.*

Recommendation 2: Asphalt Roof Replacement (21-7096)

- It is staff's opinion that the remainder of the proposed work is appropriate under the Elements of Design for the Rosedale Park Historic District and the Secretary of the Interior's Standards for Rehabilitation (36 CFR Part 67). Staff therefore recommends that the Commission issue a Certificate of Appropriateness (COA) for the application.

15327 Warwick, 2007 HDC designation photo.

15327 Warwick, southwest view, staff photo.

15327 Warwick, northwest view, staff photo.

15327 Warwick, windows proposed for replacement, west elevation, applicant photo.

15327 Warwick, windows proposed for replacement, south elevation, applicant photo.

CONTRACTOR LICENSE #2102200083
48 Maple St. River Rouge, MI 48218
Q.O – Errol Parks (313) 399-7291
(Independent Contractor and Agent to the Insured)

To whom it may concern,

As it relates to 15327 Warwick, I misunderstood the process thinking it was acceptable to proceed with ordering windows once I applied for my permit. I was not aware there were additional approvals needed beyond the HRD Preservation Department.

I had done this before and there has never been any problems. I thought it was acceptable to do. Also, this was only done to allow project to be completed on schedule as windows normally take two to six weeks to arrive.

Windows ordered were in compliance with windows that were in the house on upper level with the exception of them being colonial.

Sincerely,

Errol Parks.

1. Can you please send me pictures of the windows you received? **Email sent**

2. Are the Grids on the exterior, interior or between the glass? **They are between the glass**

3. Can you please send me a short description of the 6 windows that you are proposing to replace?

You can use the list I made below or similar (for example):

Description of Existing Conditions / scope of work:
Window 1 – First floor, Front (1)- wood, double hung – grid pattern 8/12 -- to be replaced with *Vinyl Max* double-hung vinyl window, as proposed, with 4/3 grid pattern.
Window 2- First Floor, Front (2) - wood, double hung – grid pattern 8/12 -- to be replaced with *Vinyl Max* double-hung vinyl window, as proposed, with 4/3 grid pattern.
Window 3- First Floor, Front (3) - wood, double hung – grid pattern 6/9 -- to be replaced with *Vinyl Max* double-hung vinyl window, as proposed, with 3/3 grid pattern.
Window 4- First Floor, Side? (1) - wood, double hung – grid pattern -- 6/9 to be replaced with *Vinyl Max* double-hung vinyl window, as proposed, with 3/3 grid pattern.
Window 5- First Floor, Side? (2) - wood, double hung – grid pattern 8/12 -- to be replaced with *Vinyl Max* double-hung vinyl window, as proposed, with 3/3 grid pattern.
Window 6- First Floor, Side? (3)- wood, double hung – grid pattern 8/12 -- to be replaced with *Vinyl Max* double-hung vinyl window, as proposed, with 3/3 grid pattern.


0215


4X4
DTA 2491


HEMI
EXPLORER
MICHIGAN
CLE 7977
PAT MILLIKEN

Secured by ADT
Feeta's Food

High quality features and **industry-leading value** perfect for any home.

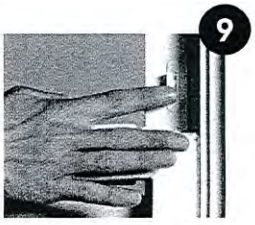
Features

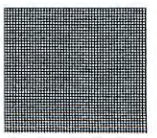
- Full overlap interlock and mylar fin synthetic weatherstripping at meeting rail keep out drafts.
- Stainless steel constant force balance system and metal on metal pivot bar system keeps the sash aligned and moves with minimal force.
- Solid color-through virgin vinyl maintains a natural appearance and will not chip, peel, corrode, rot or requires painting or scraping.
- Sloped sill diverts water away from the interior.
- Integral extruded lift rail will never pull loose for assured confidence in operation and function.
- Recessed tilt latches release the sash for trouble-free cleaning.

STANDARD FEATURES

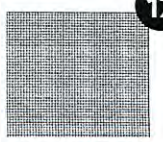
RADIANCE PLUS
WINDOWS

1. **Multi-chambered vinyl construction** provides a maintenance-free lifestyle with superior strength and thermal efficiency.
2. **Four-Point fusion welding** guarantees the frames and sashes are always strong and square.
3. **Shadow grooved sash welds** replicate the classic look of mitered wood corners.
4. **Integral lift and pull rails** are ergonomically engineered for smooth operation while remaining aesthetically appealing.
5. **Dual Function partitioned sloped sill** forms a negative pressure pocket that keeps sashes securely in place and water flowing away from your home, even in the most adverse weather conditions.
6. **Effortless pivot balance system** utilizes stainless steel coils making sash operation smooth and whisper-quiet.
7. **Biomaxx advanced composite locks and keepers** are 50% stronger than typical die-cast hardware while remaining lead-free, color-true, without fading, warping or chipping.
8. **Low-profile tilt latches** sit subtly out of view but engage easily when sashes need to be tilted in for cleaning.
9. **Dual push-button forced entry resistant ASTM Night Locks** limit sash movement for your family's safety and security.
10. **IdeaSeal™ triple protection weather seal** keeps the indoor and outdoor environments separate with an integral interlock, sill compression seal, and multiple rows of weatherstripping.
11. **Full balance covers** hide internal systems while eliminating unsightly visible sash stops.
12. **BetterVue® insect screening with Water Shed Technology™** preserves optical clarity by shedding water and resisting dirt and grime for a sharp, more brilliant outward view.





Typical Screen Mesh



PHIFER BETTERVUE
IMPROVED VISIBILITY INSECT SCREEN

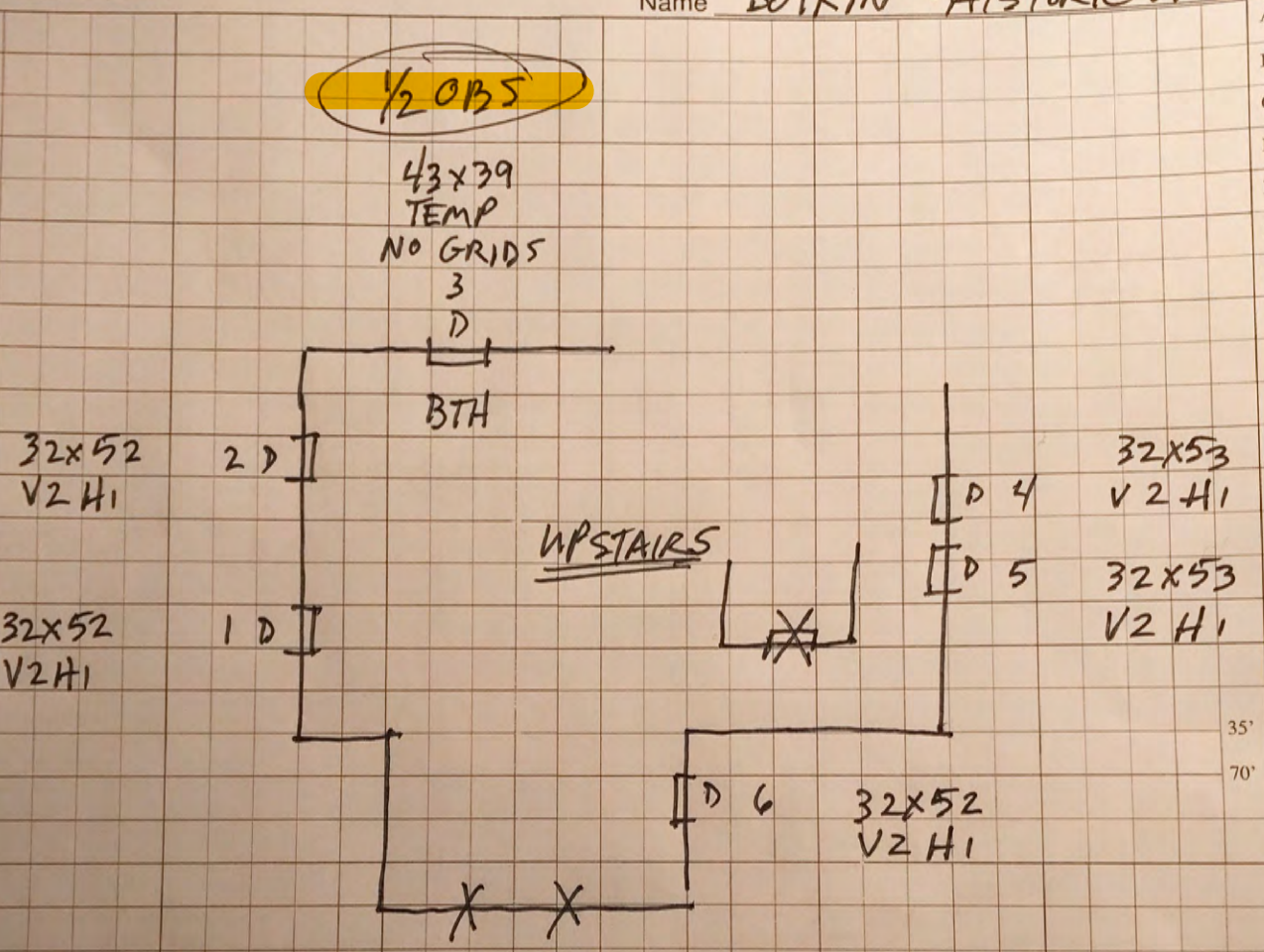

406

1-800 HANSONS
hansons.com

SKETCH & MEASURE

1/4" = 1'0" | 1/8" = 1'0"
1 sq = 1 ft | 1 sq = 2'0"
30' x 35' | 60' x 70'

Project
Job # 315300 Date 12/16/20
Notes
Name BOYKIN - HISTORIC DISTRICT



Master Work Order

☐ Flexible installation date

Customer: 2005433 Install to be started in approximately 6 to 12 weeks after approval

Customer 1:	Alunda Bokin	**Primary Phone:**	(313) 757-2119
Email:	Alundabokin@hotmail.com	**Second Phone:**	(313) 715-7104
Customer 2:	Byron Boyking	**Primary Phone:**	(555) 555-5555
Email:	Alundabokin@hotmail.com	**Second Phone:**	(555) 555-5555

Work to be done at:

Street #:	15327
Street Name:	Warwicck
City / State:	Detroit MI
Zip Code:	48223

Billing Address:

Street #:	15327
Street Name:	Warwicck
City / State:	Detroit MI
Zip Code:	48223

About Home:

To whom do you pay your property taxes:	Det	**Historic District:**	yes
		Condo Complex:	
Home Type:	Residential	**Condo Ph#:**	
Year Built:	1940		

Customer Agreed to the Terms of Payment as Follows:

Final Price	$5,400
Amount of unidentified wood prepaid	$0
Administration Fee	$295
Final Total	$5,695
Deposit	$0
Balance to be paid upon substantial completion (cash or by secondary lender)	$0
Amount to be Financed	$5,695

Deposit / Final Payment in the Form of:

Payment Type Financed

Windows Specification **SmartChoice Package** Number of Windows: 6

Lifetime Guarantee, Hybrid 0.23 Triple Low E Argon Glass, Welded Corners, Dual Operable, Foam enhanced frame, Fiberglass Reinforced vinyl frame and sash (on most styles), Free Glass Breakage and screen repair, Worry-Free Money Back Guarantee. Multiple colors available. U-Value listed is for non-tempered glass

* ○ **Full Job** ◉ **Partial Job**

Building: Home

Type of House:Frame, Current Window Ext Color:White, Current Window Int Color:White, Current Window Trim Color:Glacier White, New Window Ext Color:White, New Window Int Color:White, New Window Trim Color:Glacier White

#1 Bedroom, Standard, Double Hung, 32"W x 52"H, Exterior Color:White, Interior Color:White, Ext Trim Color:Glacier White, Oriel Style:No, Grid Style:Colonial Flat, Ext Color:White, Int Color:White, Grid Coverage:All Sashes, Grid Style:2 X 1,

#2 Bedroom, Standard, Double Hung, 32"W x 52"H, Exterior Color:White, Interior Color:White, Ext Trim Color:Glacier White, Oriel Style:No, Grid Style:Colonial Flat, Ext Color:White, Int Color:White, Grid Coverage:All Sashes, Grid Style:2 X 1,

#3 Bathroom, Standard, Double Hung, 43"W x 39"H, Exterior Color:White, Interior Color:White, Ext Trim Color:Glacier White, Oriel Style:No, Grid Style:No Grid, Obscured Glass:Obscure Half, Tempered Glass:Yes,

#4 Bedroom, Standard, Double Hung, 32"W x 53"H, Exterior Color:White, Interior Color:White, Ext Trim Color:Glacier White, Oriel Style:No, Grid Style:Colonial Flat, Ext Color:White, Int Color:White, Grid Coverage:All Sashes, Grid Style:2 X 1,

#5 Bedroom, Standard, Double Hung, 32"W x 53"H, Exterior Color:White, Interior Color:White, Ext Trim Color:Glacier White, Oriel Style:No, Grid Style:Colonial Flat, Ext Color:White, Int Color:White, Grid Coverage:All Sashes, Grid Style:2 X 1,

#6 Bedroom, Standard, Double Hung, 32"W x 53"H, Exterior Color:White, Interior Color:White, Ext Trim Color:Glacier White, Oriel Style:No, Grid Style:Colonial Flat, Ext Color:White, Int Color:White, Grid Coverage:All Sashes, Grid Style:2 X 1,

NOTES:

HOME IMPROVEMENT INSTALLMENT CONTRACT AND AGREEMENT

The customer(s) ("Owner(s)") listed herein jointly and severally agree to purchase the goods and/or services listed herein, in accordance with the prices and terms described herein (the "Agreement") and Owner(s) has requested that such goods and/or services be installed or provided at Owner's address listed herein. 1-800-Hansons, LLC ("Contractor") hereby agrees to install or cause to be installed, the products or services listed in this Agreement.

Owner(s) agrees to sign a completion certificate upon substantial completion of the installation of the goods, with substantial completion being defined as the stage or part of a construction project completed sufficiently to allow the owner to occupy or use the structure/building. This Agreement represents a cash sale of goods and/or services. Owner(s) agrees to pay in cash the cost of the goods and/or services purchased as described below, with full payment due upon substantial completion of the job regardless of timing or approval of any financing Owner(s) may seek for the purchase.

Owner(s) agrees that this Agreement constitutes the entire understanding between the parties, and there are no verbal understandings changing or modifying any of the terms of this Agreement. This Agreement may not be changed or its terms modified or varied in any way unless such changes are in writing and signed by both Owner(s) and Contractor. Owner(s) hereby acknowledge that Owner(s) has read this Agreement and has received a completed, signed, and dated copy of this Agreement, including the two accompanying Notice of Cancellation forms, on the date first written above. Owner(s) also acknowledges that he or she was orally informed of his or her right to cancel this transaction.

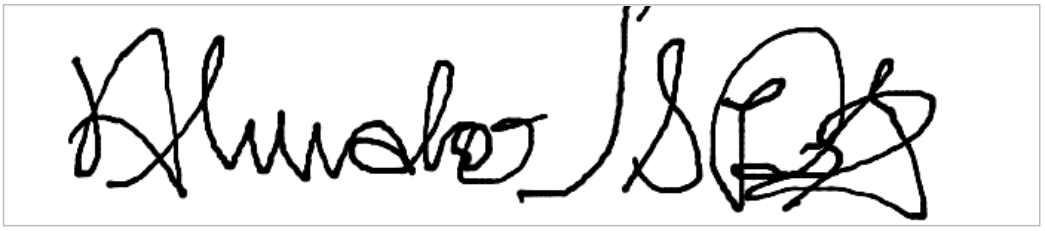
Signatures: (Please sign with finger)

By signing, customer acknowledges that they have read and agree to the terms and conditions of this work order.

Terms and Conditions

Customer must review and agree to terms and conditions

*Customer 1:



Signed on Date: 12/22/2020

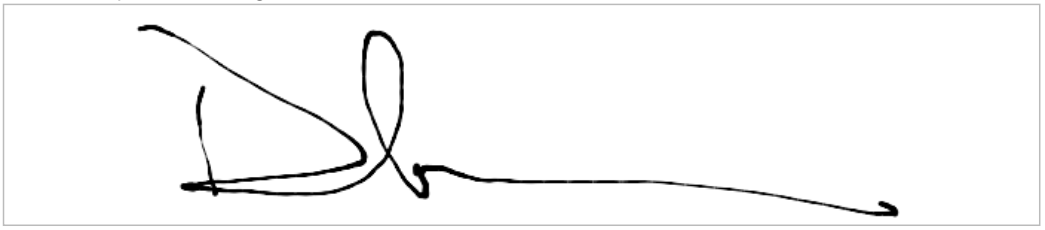
*Customer 2:

Signed on Date: 12/22/2020

LEAD SAFE PAINT PRACTICES

LEAD SAFE PAINT PRACTICES - I(we) hereby acknowledge receipt of a copy of the pamphlet, 'Renovate Right: Important Lead Hazard Information for families, child care providers and schools, informing me(us) of the potential risk of lead hazard exposure from renovation activity to be performed in my(our) home. I(we) received this pamphlet before the work began.

*Sales Representative Signature



Hansons Salesperson
David Kramer

(248) 581-3030 Ext 7139
dkramer@hansons.com

TERMS AND CONDITIONS

1. NO REPRESENTATIONS, PROMISES OR WARRANTIES, EXPRESSED OR IMPLIED, HAVE BEEN MADE BY CONTRACTOR TO OWNER EXCEPT THOSE THAT ARE STATED IN THIS AGREEMENT. This Agreement cannot be changed by any conversations between Owner and Contractor. Any changes must be in writing and signed by Owner and Contractor. Contractor or its manufacturer may at its sole option, upgrade a product to similar or higher quality.

2. Assignment - It is agreed that Contractor shall have the sole right at any time to sell, transfer, or assign this Agreement and the money to be paid under this Agreement.

3. Consequential Damages/Contractor Liability - Contractor shall not be liable for the following: (1) any consequential damages to premises or material located on the premises. In the event of interior damage, Owner(s) agrees to submit a claim to his or her insurance company provided however that Contractor will pay any insurance deductible. (2) any damage to trees, shrubs, flowers, grass, or landscaping, (3) shades, blinds, or any other window treatments not fitting into the openings after work is completed; however, this does not mean that they will not fit, but it does happen on certain types of installations, (4) any caulk fumes or any other fumes caused by building materials Contractor provides; it being understood that Owner(s) should air out affected rooms prior to habitating (5) any pre-existing code violations existing at the time of this Agreement, (6) any window AC units, alarms, or security bars, and Contractor is not responsible for reconnecting or fitting these items, (7) alarms or doorbells except that in the event that Contractor damages Ownerâ€™s doorbell, Contractor will attempt to replace it with a wireless doorbell kit. Contractor will reinstall satellite dishes to the best of its ability, but Owner(s) is responsible for contacting provider to restore service. In the unlikely event of ceiling damage on the interior, Contractor agrees to pay for the painting of the damaged section only. Many homes are not square. It is not Contractor's responsibility to change the structure of Owner's home. Some homes have rafters that do not line up, creating an appearance of sagging. Contractor is not responsible for correcting this appearance. Contractor performs its installation under the assumption that existing attic ventilation is free and clear of any obstructions. Any existing obstruction will render all warranties null and void. Contractor assumes no liability for animal or insect infestations.

Wood installed by Contractor is unstained on all bays/bows/garden windows. Owner(s) is responsible for staining and sealing. Staining should be done within 90 days of install. Contractor does not guarantee against any paint dings, dents, nicks, nail pops, paint scraping, or flaking. Contractor is not responsible for cleaning debris or resultant damage to unprotected property in Owner's attic. Contractor does not do any painting, decorating or wood finishing. If replacement of joists or beams is necessary, there will be an additional charge for this labor and materials. Owner(s) shall expect to lose a certain amount of glass space/daylight opening when installing replacement windows. The frames are larger on replacement windows and Energy Efficient glass will have a slight tint. If, due to size limitations, Contractor is unable to make the windows with triple pane, Contractor will substitute with double pane energy efficient Energy Star-compliant glass. The U-Value could be higher. Various options such as grids may affect the U-Value. Tempering increases the U-Value by 1 to 1.5 points. Certain styles such as casements, solid picture windows, bays/bows and doorwalls do not have fiberglass inserts due to structural design, but this will not inhibit performance or strength of the windows. When any work is performed, Owner(s) shall expect paint, plaster, drywall to crack or loosen. Owner(s) shall expect a certain amount of debris in attic associated with roof work. Michigan Uniform Energy Code requires a thermal barrier with a minimum R-Value of 38, for roof/ceiling assemblies of any new construction homes in zones 2 & 3, and a minimum R-Value of 30 for all new construction homes in zone 1. Because the aforementioned Energy Code is the accepted standard for new construction, Contractor will not be responsible for any moisture transfer that may occur, or ice damming caused from insufficient insulation, in any attic area located under a roof system installed by Contractor. Measurements contained in this Agreement are good for pricing ONLY. At the time of install, there could be adjustments made to Owner's openings to allow for proper fit of replacement windows/doorwalls. Doorwalls come in standard sizes. If Owner(s) requests a special order doorwall at the time of install, Owner(s) agrees to pay the additional price as specified in this agreement. Trained measure-men take actual measurements. In the event that a dumpster is needed for removal of debris, Owner(s) agrees to have such dumpster placed in his or her driveway. Blue and green shingles come in asphalt only. Contractor is not responsible for any damage the dumpster may cause to the driveway. In order to install roof properly, if Owner(s) has existing gutter protection, Contractor will reinstall to the best of its ability. In the event that Contractor is unable to reinstall, Contractor will replace it with Contractor's gutter protection system. Gutter helmet warranty will be voided. Contractor is not responsible for manufacturer's warranty issues.

4. Workmanship Guarantee - As is further described in the labor guarantee provided to Owner(s), subject to certain terms and conditions, Contractor guarantees its workmanship under this Agreement. Owner(s) should review the labor guarantee for specific details regarding the scope of the guarantee. Owner(s) may review guarantee anytime at www.hansons.com

5. Delay/Unknown Conditions - Events beyond the control of Contractor, such as acts of God, labor strikes, inclement weather, material shortages, Owner's inability to qualify for or obtain financing, delays by local government authorities in issuing or otherwise approving inspections, permitting, or other required authorizations for the job, or other events resulting in delays in performance of this Agreement do not constitute abandonment and are not included in calculating time frames for performance by Contractor. In the event that Contractor determines that this Agreement cannot be performed as intended by the parties due, for example, to incorrect pricing, unforeseen structural defects, or pre-existing conditions to Owner's property, Contractor may cancel this Agreement within 30 days of its execution, notify Owner(s) of such cancellation in writing and return all monies paid by Owner(s). Contractor and Owner(s) have determined that a definite completion date is not of the essence to this Agreement. In accordance with the prices listed in this Agreement, Owner(s) agrees to pay for additional wood repair, as it is necessary to replace all weak, rotted, wet, or splintered wood to guarantee a sound installation. The amount paid by Owner(s) for this work shall be in addition to the original contract price listed in this Agreement. In the event that Contractor determines that additional wood repair is needed, Owner(s) agrees to enter into a change order with Contractor to reflect such additional wood repair/additional cost. Contractor shall be entitled to suspend performance under this Agreement if Owner(s) does not authorize/pay for this additional wood repair.

6. Time for Performance - It is understood by all parties that time is of the essence for this Agreement, and all work contracted for shall be performed as soon as scheduling, materials, and weather conditions permit. Contractor shall not be liable for delays caused by strikes, weather conditions, delay in

obtaining material, permits, illness, transportation failure or other causes beyond its control. Owner(s) agrees to make available to Contractor access to electrical service, and running water. Owner(s) further agrees that he or she is responsible for any electrical service charges, or water costs that are used by Contractor in the course of performance of this Agreement.

7. Stipulated Damages - If Owner(s) cancels, rescinds, or otherwise terminates this Agreement after the expiration of the applicable cancellation period provided for in this Agreement, and Contractor accepts such cancellation, which shall be in Contractor's sole discretion, then Owner(s) agrees to pay to Contractor the following to offset (1) Contractor's incurred costs in preparation for work and (2) damages, including lost profits, that are difficult to determine. The parties agree that the following formula is a reasonable estimate of the actual damages that Contractor will suffer if the Owner(s) does not allow Contractor to perform this Agreement. A. One third of the contract price and, B. Contractors actual cost for any custom ordered products made for Owner's job if any.

8. Arbitration of Disputes - Contractor and Owner(s) agree that any and all disputes, claims, or controversies (hereafter referred to as a "Claim") arising under or relating to this Agreement and any related documents, loans, security instruments, accounts, or notes, including by way of example and not as a limitation: (i) the relationships resulting from this Agreement and the transactions arising as a result thereof; (ii) the terms of this Agreement; or (iii) the validity of this Agreement or the validity or enforceability of this arbitration agreement, may, at the election of either party be subject to binding arbitration to be determined by one (1) arbitrator, in accordance with and pursuant to the American Arbitration Association under its construction industry arbitration rules of the American Arbitration Association ("AAA"), to be held and arbitrated in the judicial district in which Owner(s) resides. Owner(s) agrees that he or she will not assert a Claim on behalf of, or as a member of, any group or class. The findings of the arbitrator shall be final and binding on all parties to this Agreement. Each party shall otherwise be responsible for its own fees and costs, unless otherwise determined by the arbitrator. This agreement to arbitrate, and any award, finding, or verdict of or from the arbitration, will be specifically enforceable under the prevailing law of any court having jurisdiction. Notice of the demand for arbitration will be filed by the party asserting the Claim with the other party to this Agreement and with AAA. The demand for arbitration shall be made within a reasonable time after the Claim in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations. Any arbitration proceeding brought under this Agreement, and any award, finding, or verdict of or from such proceeding shall remain confidential between the parties and shall not be made public. Further information may be obtained and claims may be filed at any office of the American Arbitration Association, 1-800-778-7879, www.adr.org, or by mail at 1633 Broadway, New York, NY 10019.

Both Owner(s) and Contractor are hereby agreeing to allow a party to choose arbitration, rather than litigation or some other means of dispute resolution, to address their grievances or alleged grievances. The parties believe this will allow a faster and more cost-effective method of addressing a Claim. By entering into this Agreement and this arbitration provision, both parties are giving up their constitutional right to have any dispute decided in a court of law before a jury, and instead are accepting the use of arbitration, other than as set forth immediately below.

9. Licensing Disclosures - A Michigan residential builder or residential maintenance or alteration Contractor is required to be licensed under article 24 of Act 299 of the Public Acts of 1980, as amended, being sections 339.2401 to 339.2412 of the Michigan Compiled Laws. An electrician is required to be licensed under Act No. 217 of the Public Acts of 1956, as amended, being sections 338.881 to 338.892 of the Michigan Compiled Laws. A plumber is required to be licensed under Act No. 226 of the Public Acts of 1929, as amended, being sections 338.901 to 338.917 of the Michigan Compiled Laws. 1-800 Hansons, LLC is properly licensed with the State of Michigan license number 2102087035, Dearborn, Michigan License # 19-00128507, Detroit, Michigan License #LIC2001-03699, Toledo, Ohio License # HRC-16-00683, Maumee, Ohio License #7325, Huron, Ohio License #2019-039, Lucas County, Ohio Registration #2487574, Ottawa, Ohio Registration #885, State of Iowa Contractor License #C133619, Council Bluffs, Iowa License #5693, State of Nebraska Contractor License # 51799-18, Bellevue, Nebraska License # C01185, Fremont, Nebraska License #19-5986, Omaha, Nebraska License # LIC-1801382, La Vista, Nebraska License #190009, Valley, Nebraska Contractor Registration, Sioux Falls, South Dakota License # 2252, Brandon, South Dakota License #361, Brookings, South Dakota License #2019-RC13, Crooks, South Dakota License # 19, Hartford, South Dakota License # 2017-28, Watertown, South Dakota License #295, State of Minnesota Registration #IR748508, State of Utah License # 11006739-5501, Adams County, Colorado License # D-7420, Arvada, Colorado License # AEC7807, Arapahoe County, Colorado License # C18-00740, Aurora, Colorado License # 2018 1552991 00 CL, Bennett, Colorado License #192, Boulder, Colorado License # LIC-00991453, Boulder County, Colorado License #CON-19-0029, Brighton, Colorado License # CL-12985, Broomfield City and County, Colorado License # OL-19-13204, Castle Pines, Colorado License #CN-01850, Castle Rock, Colorado License # 18-2959, Centennial, Colorado License # CL-000218-2018, Colorado Springs, Colorado License #23337, Columbine Valley, Colorado License #CON-2019-00156, Commerce, Colorado License # 4892, Dacono, Colorado License #1241.1, Denver, Colorado License # LIC00248160, Denver, Colorado Roofing License #LIC00248415, Douglas County, Colorado License # C180361, Eagle County, Colorado License # 19GC00282, Englewood, Evans, Colorado License #2604758, Colorado License # 20387, Federal Heights, Colorado License #180135, Firestone, Colorado License # 19B-FIRCO-022, Fort Lupton, Colorado License # CON-000640-2018, Frederick, Colorado License #2390, Golden, Colorado License # 10137, Greenwood Village, Colorado License # OL-20-04763, Jefferson County, Colorado License # 988944, Lakewood, Colorado License # 22901, Larimer County, Colorado License #CL2763, Littleton, Colorado License # C00271, Lochbuie, Colorado License # 18D00664, Longmont, Colorado License # C01005579, Loveland, Colorado License # 7050, Milliken, Colorado License #19MIL-II-0537, Northglenn, Colorado License # 18NGN-C-3256, Park County, Colorado License # 3427, Parker, Colorado License # CL18-00440, Thornton, Colorado License # LCC201801597, Wellington, Colorado License # 1692, Wheat Ridge, Colorado License # 180334.

10. Permits - Contractor agrees to pull any necessary permits for the work described in this Agreement. Owner(s) agrees to pay for the actual costs of the permit and any necessary fees and inspections. Contractor will bill Owner(s) for these charges. Owner(s) authorizes Contractor to apply for building permits on Ownerâ€™s behalf from the city, village or township where the property is located. Owner(s) gives Contractor permission, and appoints Contractor, to sign Owner's name to the building permit application for the work in this Agreement. Owner(s) authorizes Contractor to proceed with the installation while the application for a permit is pending. If the city, village, or township where the property is located requires code updates (such as smoke detectors) Owner(s) must pay for those expenses. The current price for smoke detectors including installation is $100.00. Contractor is not responsible for code violations that exist prior to the date of installation. If the property is subject to other regulations that would affect the ability of Owner(s) to install the materials covered by this Agreement because of deed restrictions, a homeowners' association, a Historic District Commission or any other reason, then Owner(s) is solely responsible for notifying Contractor of these restrictions and assuring that those regulations or restrictions have been satisfied.

11. Notices - All notices and other communications required or permitted under this Agreement will be in writing and will be deemed given when

delivered personally or by mail, addressed as follows: If to Contractor: to 977 E. 14 Mile Road, Troy, Michigan 48083. If to Owner(s): to the name and address appearing in this Agreement.

12. Attorney's Fees - Should Contractor require the services of an attorney for the enforcement of any provision of this Agreement, Owner(s) agrees to pay Contractor's actual attorney's fees.

13. ACH Authorization - Any amounts due to Contractor upon substantial completion of the job will be withdrawn from Owner's account via an ACH transfer if not paid within 5 business days of the last day of work; provided Owner(s) has granted ACH authorization.

14. Interest - Any sums herein which are not paid when due shall bear interest at the highest legal rate, not to exceed one and one half percent per month (18% per annum), from date of original installation.

15. Contractor's Rights Upon Discovering Estimating Error - If Contractor finds upon measuring that an estimating mistake has been made by Contractor's sales person, Contractor expressly reserves the right to cancel this Agreement by giving Owner(s) notice of cancellation within 30 days of discovery of the error.

16. Mold and Other Hazardous Substances - Contractor is not responsible for conditions beyond its control, including existing or developing spore or mold growth. Mold may be due to condensation that may form on or within walls or other surfaces resulting from pre-existing conditions in Owner's home and internal or external temperatures. Owner(s) indemnifies and holds Contractor and its employees, authorized contractors, and their subcontractors from any claims as to the identification, detection, abatement, encapsulation, or removal of mold, asbestos, lead- based products or other hazardous substances inside or outside of the structure being improved.

17. Severability - Whenever possible, each provision of this agreement shall be interpreted in such a way as to be effective and valid under applicable law. If a provision is prohibited by or invalid under applicable law, it shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the reminder of such provision or the remaining provisions of this agreement.

18. For Pricing Purposes, Contractor's average labor rate per square/opening is determined by average direct labor costs multiplied by a factor determined by historical overhead percentages.

19. Insulation that is inside the window frame is white, but Contractor uses pink for demonstration purposes.

20. Telephone Recording. For quality and control purposes, all incoming and outgoing calls are monitored and recorded.

(Iowa Sales Only) **Persons or companies furnishing labor or materials for the improvement of real property may enforce a lien upon the improved property if they are not paid for their contributions, even if the parties have no direct contractual relationship with the owner. The mechanics' notice and lien registry internet site provides a listing of all persons or companies furnishing labor or materials who have posted a lien or who may post a lien upon the improved property. If the person or company has posted its notice or lien to the mechanics' notice and lien registry internet site, you may be required to pay the person or company even if you have paid the general contractor the full amount due. Therefore, check the mechanics' notice and lien registry internet site for information about the property including persons or companies furnishing labor or materials before paying your general contractor. In addition, when making payment to your general contractor, it is important to obtain lien waivers from your general contractor and from persons or companies registered as furnishing labor or materials to your property. The information in the mechanics' notice and lien registry is posted on the internet site of the mechanics' notice and lien registry. The Mechanics' Notice and Lien Registry's Internet Web site address is sos.iowa.gov/MNLR and its toll-free telephone number is 1-888-767-8683.**

(Minnesota Sales Only) **(a) Any person or company supplying labor or materials for this improvement to your property may file a lien against your property if that person or company is not paid for the contributions. (b) Under Minnesota law, you have the right to pay persons who supplied labor or materials for this improvement directly and deduct this amount from our contract price, or withhold the amounts due them from us until 120 days after completion of the improvement unless we give you a lien waiver signed by persons who supplied any labor or material for the improvement and who gave you timely notice.**

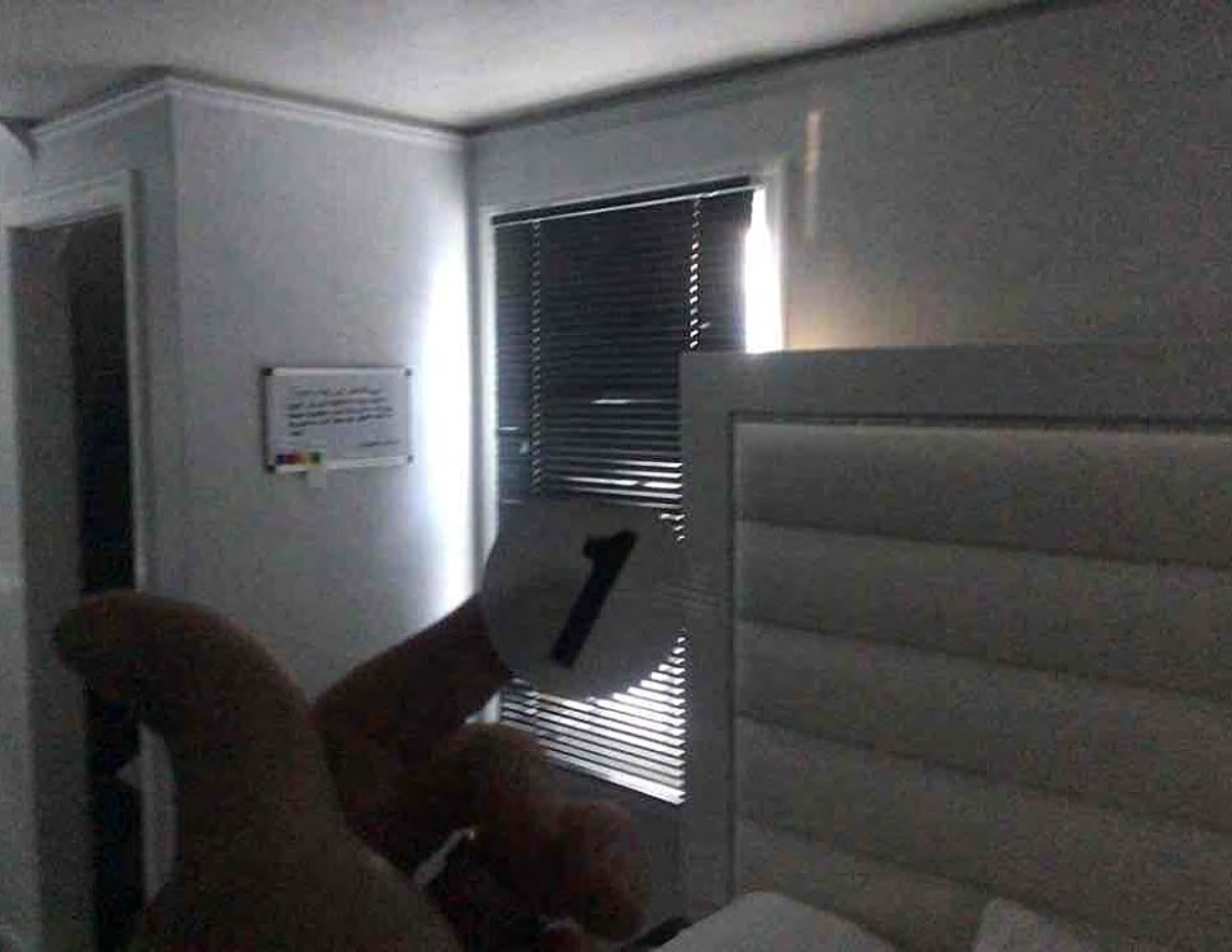
Minnesota law (Minn. Stat. Â§ 327A.02) contains important requirements you may have to follow before you may file a lawsuit or commence arbitration proceedings regarding an alleged breach of this statutorily warranty.

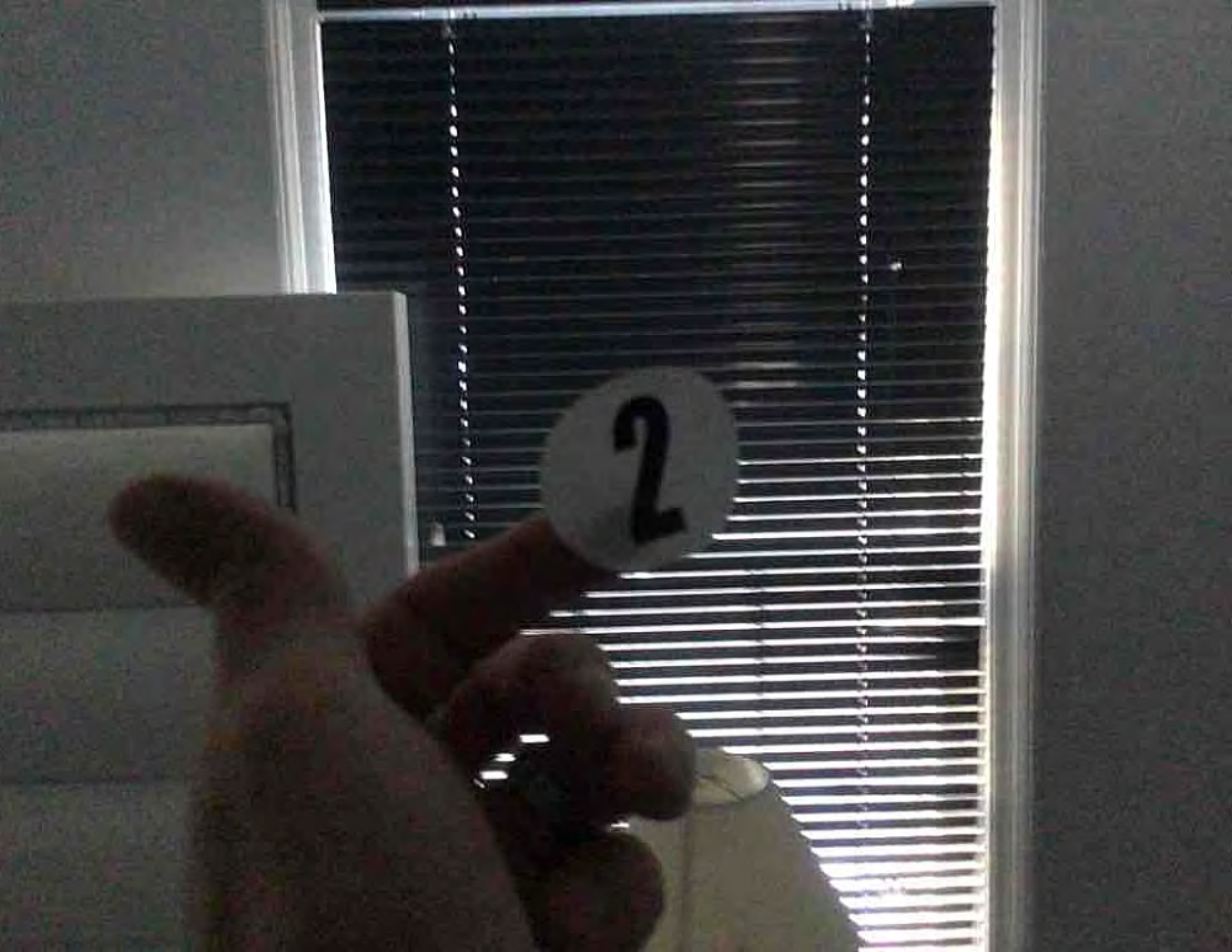
Written Performance Guidelines (in accordance with Minn. Stat. Â§ 326B.809): Contractor warrants that all of the materials used in performing work will be new unless otherwise specified and that all work will be of good quality and in conformance with applicable building codes and laws. Contractor warrants that it will complete the work according to the plans, specifications, and other documents that comprise the agreement between the parties. Contractor warrants that the work will be performed as required by Minnesota Statutes Section Â§ 327A.01 et. seq. (Statutory Warranties).

During the one-year period from and after the warranty date the home improvement will be free from defects caused by faulty workmanship and defective materials due to noncompliance with building standards and during the ten-year period from and after the warranty date the home improvement will be free from major construction defects due to noncompliance with building standards.

(Utah Sales Only) **PROTECTION AGAINST LIENS AND CIVIL ACTION. Notice is hereby provided in accordance with Section 38-11-108 of the Utah Code that under Utah law an "owner" may be protected against liens being maintained against an "owner-occupied residence" and from other civil action being maintained to recover monies owed for "qualified services" performed or provided by suppliers and subcontractors as a part of this contract, if either section (1) or (2) is met: (1)(a) the owner entered into a written contract with an original contractor, a factory built housing retailer, or a real estate developer; (b) the original contractor was properly licensed or exempt from licensure under Title 58, Chapter 55, Utah Construction Trades Licensing Act at the time the contract was executed; and (c) the owner paid in full the contracting entity in accordance with the written contract and any written or oral amendments to the contract; or (2) the amount of the general contract between the owner and the original contractor totals no more than $5,000.**


15327

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3


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15327

City of Detroit Housing And Revitalization Department
Housing Service Division
Two Woodward Avenue, Suite 908
Detroit Michigan 48226

RESIDENTIAL REHABILITATION PROJECT BIDDING INSTRUCTIONS

The City of Detroit Housing And Revitalization Department Housing Services Division (HRD) is accepting Bids for residential rehabilitation. Bids will only be accepted from Contractors listed on this Department's Approved Contractors List. All Bidders will be notified of the preliminary bid results by E-mail within two (2) business days of the Bid Opening. HRD reserves the right to modify these procedures as it deems necessary.

INSTRUCTIONS TO BIDDERS:

1. This is a Microsoft Excel software document. All line item fields must be completed. Note: Contractor must manually enter the sum total amount on the Bid Proposal Cover page. It is the contractor's responsibility to verify the total cost of all line items. An adding machine tape is recommended. (Differences in reported totals between the cover page and last spec page will result in a rejected bid).
2. Bids will only be accepted from bidders who attend a mandatory Project Walk-Thru at the property addressed.
3. The Bid Proposal Documents must be completed and returned to GS Group, LLC., at 17800 Woodward Avenue, Suite 200, Detroit, MI 48203, no later than 10:00 a.m. on the bid due date.
4. Bids will not be accepted without an authorized signature which is on file with GS Group, LLC.
5. Bid proposal must be submitted in a 10" X 13" envelope (one bid proposal per envelope) properly labeled with the following information:

City of Detroit Housing And Revitalization Department
0% Interest Home Repair Loan Program
Bid Document Enclosed
Bid Due Date
Property Address
Contractor's Name
Contractor's Address

City of Detroit Housing And Revitalization Dep
0% Interest Home Repair Loan Program
Two Woodward Avenue, Suite 908
Detroit Michigan 48226

EXHIBIT A

BID PROPOSAL FOR:

DATE **10/12/23**

Case No.:	**#REF!**	**Program Name:**	**#REF!**
Property Owner:	**#REF!**	**Phone #:**	**#REF!**
Property Address:	**#REF!**	**Alternate Phone #:**	**#REF!**
City, State Zip	**DETROIT, MI #REF!**	**Historic Designation:**	**#REF!**

In care of: The Housing And Revitalization Dept.
Two Woodward Avenue, Suite 908

Detroit, Michigan 48226

For Rehabilitation/Repair of the property located at: **15327 Warwick** Detroit, Michigan

The : ***Jonmar Construction LLC*** *(General Contractor)*

proposes to do all of the work as set forth in the plans and/or work specification attached to and a part of this bid for:

the sum of ***Eighteen Thousand Nine Hundred Eighty*** Dollars ($ ***18,980 .00)***

The proposed Walk-Thru for this project is: **10/15/2020** **AT** **9:00am**

PROVIDED that the bid shall be accepted by the OWNER or his/her agent within 30 days from receipt of said bid, and that the OWNER or his/her agent shall issue a written proceed order within 30 days from date of acceptance. If the acceptance is not received by the CONTRACTOR within 30 days, he/she has the right to withdraw his/her bid and proposal.

FURTHER, that the bid must be received by the Housing And Revitalization Dept. no later than 10:00 AM on: **10/23/2020**
The bids will be opened at 10:30 a.m. on the bid due date. Due Date

Covering Work Specification dated: **9/29/2020**

By: ***Errol Parks***
Authorized Signature

Jonmar Construction LLC [Owner]
Name and Title (Print)

48 Maple Street
Address

River Rouge, Mi. 48218
City, State, Zip Code

[313] 399-7291
Phone

[313] 914-7081
Fax

City of Detroit Housing And Revitalization Dep
Housing Service Division
Two Woodward Avenue, Suite 908
Detroit Michigan 48226

EXHIBIT A

Case No.:	**#REF!**		**Program Name:**	**#REF!**	
Property Owner:	**#REF!**		**Phone #:**	**#REF!**	
Property Address	**#REF!**		**Alternate Phone #:**	**#REF!**	
City, State Zip	**DETROIT, MI**	**#REF!**	**Historic Designation**	**#REF!**	
Dev. Specialist	**#REF!**		**Phone No.**		**Fax No.**
Spec Writer	**Lamaten Jenkins**		**Phone No.**	**313-279-0449**	**Fax No.** **313-279-0519**
Construction Mgn	**#REF!**		**Phone No.**	**313-279-0449**	**Fax No.** **313-279-0519**
Risk Assessor	**Donnez Hemphill**		**Cert. No.**	**P-05920**	**Phone No.** **313-279-0449**
Date Written :	**9/29/2020**		**Revised**		

WORK SPECIFICATION

Unless specifically excluded, all workmanship and materials are to fully comply with all applicable building codes and meet the minimum standards set forth in the City of Detroit Housing And Revitalization Department's Contractor's Performance Standards. November, 2008 (or most current version). The Contractor shall make no claims for additional cost due to the existing conditions at the site, which could have been ascertained by the Contractor in his examination of the site. All measurements and quantities will be field verified by the Contractor. Costs for all necessary trade permits (Electrical, Plumbing, Heating) must be included in the line item price. The execution of this work shall comply with all applicable state, federal and local laws, rules, regulations and guidelines. These standards include but are not limited to the following: 29 CFR 1926 - Construction Industry Standards; 29 CFR 1926.62 – Construction Industry Lead Standard; 29 CFR 1910.1200 - Hazard Communication; 40 CFR Part 261 and 40 CFR Part 745 - EPA Regulations; NCLSH-HUD Lead Paint Guidelines, Evaluation Protocols (most current version).

This Dwelling has been Designated Historic. Work Specification to be reviewed and approved by the Historic Commission prior to the Bid Invitation. Exterior color and element design choices to be approved by Historic <u>before</u> Notice to Proceed.

NOTE:

All line items identified by LHR are Lead Hazard Remediation items and should be bid accordingly.

		LHR	*EXTERIOR*
7.500			**ROOFING-SHINGLE**
7.501	**$15,000**		Remove all existing shingles down to the roof boards. Install 7/16 inch Oriented Strand Board. Install new Dimensional 30 year asphalt shingle roofing, including 15 lb. asphalt saturated felt, over entire roof, ice and water shield at all eaves and valleys, and aluminum T-Drip at all edges of roof. (approx. 30 Sq.) ***COLOR TO MATCH EXISTING OR APPROVED HISTORIC COLOR CHART***
8.500			**WINDOWS**
8.519	**$3,000.00**	**LHR**	Replace all double hung window units on ***the first floor*** of dwelling with new solid vinyl double-hung replacement windows with ***muntin bars, (Divided Light)*** insulated glass, screens and tilt-in cleaning feature. **NOTE: Same Style, Configuaration & Pattern.** Enclose window frames, trim, sills, lintels, and mullions with custom fit aluminum coil stock. (Total _6__) **Note: See current Contractor Performance Standards re: Energy Star.**
			INTERIOR
16.100	**$500**		**ELECTRICAL** Install smoke detectors and carbon monoxide detectors up to code

Construction Repairs Sub-Total: **$18,500.00**

	$480.00	**BUILDING PERMIT** **(All other required electrical, heating, and plumbing permit cost must be included in their associated spec item prices.)**

TOTAL COST $ **$18,980.00**

OFFICE USE ONLY

General Repair Cost: **$15,980.00** **Lead Hazard Remediation Cost:** **$3,000.00**

DEMOLITION-DEBRIS REMOVAL

The Contractor shall remove all construction and demolition debris related to the work performed during rehabilitation as it is generated. It shall not be allowed to accumulate on the premises. He shall clean all glass and remove all labels and spots on equipment furnished or installed. Clean-up requirements shall apply to all other walls, floors, fixtures, or areas that have suffered in any way from the performance of the contractor or subcontractors.

OF: ***Jonmar Construction LLC*** ***Errol Parks***

Company Name *Company Owner Signature*

COMMENTS:

Homeowner Acknowledgement Form

Rehab Address: _____

By my signature below, I acknowledge that I have reviewed the work specification with a representative of the City of Detroit Housing And Revitalization Department, accept and approve the items listed in the Bid Document, and accept these items as the total scope of work to be completed on my home through this loan program.

Initial Appropriate Box

☐ After being advised of my right to select contractors to bid on the repairs to my property, I decline to do so. I hereby authorize the GS Group, acting on behalf of the City of Detroit Housing and Revitalization Department, and its representatives to act as my agent in seeking competitive bids from its approved contractors . I further release the City of Detroit, its agents, assigns, and representatives of all liability and/or damages that may result from said selection.

☐ After being advised, I hereby exercise my right to select contractors, pre-approved by the City of Detroit Housing And Revitalization Department Housing Services Division, to bid on the repairs to my property as identified on the attached Approved Contractor Lists. I further release the City of Detroit, its agents, assigns, and representatives of all liability and/or damages that may result from said selection.

I further agree to accept the lowest bidding qualified contractor as determined by Housing And Revitalization Department's representative.

SIGNED: _____

Owner's Signature **Date**

SIGNED: _____

Owner's Signature **Date**

_____ _____

WITNESS BY HRD **Date**

Housing and Revitalization Department
CITY OF DETROIT

Coleman A. Young Municipal Center
2 Woodward Avenue. Suite 908
Detroit, Michigan 48226

Phone: 313.224.6380
Fax: 313.224.1629
www.detroitmi.gov

October 9, 2020

Penny Dwoinen
City of Detroit Housing & Revitalization Department
Coleman A. Young Municipal Center
2 Woodward Avenue, Suite 908
Detroit, MI 48226

RE: **Section 106 Review of a CDBG-Funded 0% Home Repair Loan Program Project Located at 15327 Warwick in the City of Detroit, Wayne County, Michigan**

Dear Mrs. Dwoinen,

Under the authority of the National Historic Preservation Act (NHPA) of 1966, as amended, and the "Programmatic Agreement between the Michigan State Historic Preservation Office and the City of Detroit, Michigan…," dated November 9, 2016, the City of Detroit has reviewed the above-cited project and has determined it to be an undertaking as defined by 36 CFR 800.16(y).

Based on the information submitted to this office on 2/5/2020, we have determined a Historic Property is located within in the Area of Potential Effects (APE) for this project. The building at **15327 Warwick is listed on** the National Register of Historic Places as part of the Rosedale Park Local Historic District. Therefore, per Stipulation V.B of the Programmatic Agreement (PA), the project shall be carried out in accordance with the *Secretary of the Interior's Standards for Rehabilitation*.

On 10/1/2020, a copy of the scope of work and photos of the project site were submitted to the Preservation Specialist for review. This project has been given a **Conditional No Adverse Effect** determination (Federal Regulations 36 CFR Part 800.5(b)) on properties that are listed or eligible for listing in the National Register of Historic Places, as long at the following conditions are met:

- The work is conducted in accordance with the specifications submitted to the Preservation Specialist on 10/1/2020; and,
- replacement windows are the same design, style, configuration, and where possible materials of the existing windows, approvable by the Detroit HDC; and,
- Any changes to the scope of work for the project shall be submitted to the Preservation Specialist for review and approval prior to the start of any work.

Please note that the Section 106 Review process will not be complete until the above mentioned conditions are met and the completed work is approved by the Preservation Specialist. Additionally, once the work is complete, "After" photos of all work items will need to be submitted to the Preservation Specialist so that the project can comply with the requirements of the Section 106 review.

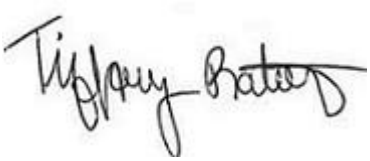
Housing and Revitalization Department
CITY OF DETROIT

Coleman A. Young Municipal Center
2 Woodward Avenue. Suite 908
Detroit, Michigan 48226

Phone: 313.224.6380
Fax: 313.224.1629
www.detroitmi.gov

An *Approval of Completed Work* may be issued for the project once photos of the completed work are received and reviewed. If you have any questions you may Preservation Specialist by phone at (313)628-0044 or rakotzt@detroitmi.gov. Please reference the project name and the Section 106 identification number in all communications with this office.

Sincerely,

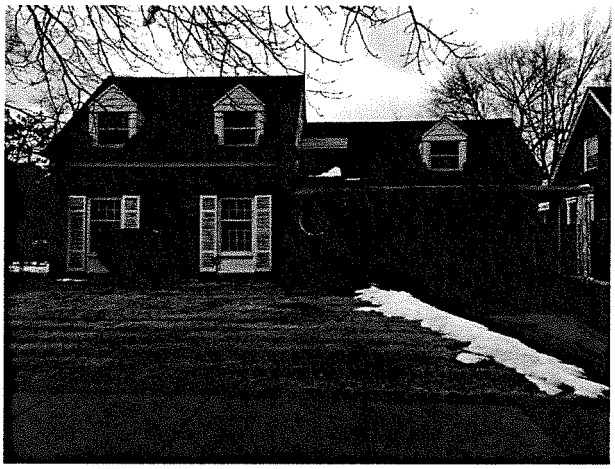


Tiffany Rakotz
Preservation Specialist
City of Detroit
Housing & Revitalization Department

Lead Inspection & Risk Assessment Report

FOR THE PROPERTY AT:

15327 Warwick
Detroit, MI 48223
1925



Prepared For:

OCCUPANT
Alunda Boykin
313-715-7104

OWNER
Alunda Boykin
15327 Warwick
Detroit, MI 48223
313-715-7104

Date of Inspection: 02/18/2020

Date of Report 03/09/2020

Report Prepared and Submitted By:

Donnez Hemphill
Michigan Certification P-05920
XRF Serial Number: 2252

GS GROUP LLC
Green S.P.A.C.E.S. Protect Our Earth

GS GROUP, LLC
17800 Woodward Ave., Suite 200
Detroit, MI 48203
313-279-0449

On behalf of:

City of Detroit Housing & Revitalization Department
Coleman A. Young Municipal Center
2 Woodward Avenue, Suite 908
Detroit, MI 48226

TABLE OF CONTENTS

Purpose of Environmental Investigation

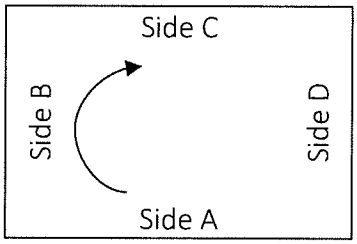
The purpose of this report is to share lead-testing results. *Please refer to Appendix C-3 for your future responsibilities as they relate to this report.* Use the "Key Definitions" below as a guide when reading the results. **Floor plan maps are provided in Appendix B-3 – use these as a guide when reading the results.** See Appendix C for information about lead hazards and abatement versus interim control options.

KEY DEFINITIONS

Component: The surface tested.
Examples: door, door trim, wall, ceiling, exterior siding, etc.

Substrate: The type of material.
Examples: plaster, wood, metal

Side: The location of tested area or item. Side A is always the address side of the building. Sides B, C, and D move in a clockwise direction from Side A.



(Address Side)

Condition: The condition of the paint on the surface tested.
Intact means undamaged, or in one piece.
Deteriorated means damaged, worn, or in bad shape.

Color: The color of the surface tested.

Floor: The floor of the building.
Basements identified are "Floor 0."

Room: The room testing occurred. Rooms are identified by a number because room usage may change (i.e., a bedroom may become an office). Kitchens and bathrooms are not numbered.

Result: Indicates if tested. Positive or negative result for lead shared.

Teeth: Indicates if teeth marks are present.

Fric-Imp: Friction-Impact occurs when two components rub or come into contact repeatedly.

Lead Testing

RESULTS & RECOMMENDATIONS

The table below details all of the lead-hazards found in your home.

TABLE 1: ALL LEAD-HAZARDS				
COMPONENT & LOCATION OF HAZARD	SEVERITY*	PRIORITY**	ABATEMENT OPTIONS	INTERIM CONTROL OPTIONS
KITCHEN **Window Trough (Dust)**	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
BATHROOM 2 **Window Trough (Dust)**	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
BEDROOM 3 **Window Sill (Dust)**	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Bedroom 3	1	1		

COMPONENT & LOCATION OF HAZARD	SEVERITY*	PRIORITY**	ABATEMENT OPTIONS	INTERIM CONTROL OPTIONS
Wall A Window Sill			1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Bedroom 3 Wall C Door Casing & Panel	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Bedroom 4 Wall D Window Sill	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Bedroom 4 Wall B Window 1 Sash	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Bedroom 4	1	1		

COMPONENT & LOCATION OF HAZARD	SEVERITY*	PRIORITY**	ABATEMENT OPTIONS	INTERIM CONTROL OPTIONS
Wall B Window 2 Sill			1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Bedroom 4 Wall C Window Sill	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Bedroom 4 Wall C Door Casing	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Exterior Wall D Door Casing	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Exterior	1	1		

COMPONENT & LOCATION OF HAZARD	SEVERITY*	PRIORITY**	ABATEMENT OPTIONS	INTERIM CONTROL OPTIONS
Wall A Address Plate			1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Exterior Wall A Windows 1, 2 & 3 Sashes & Stops	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Exterior Wall B Windows 2, 3 & 4 Storm Sashes	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Garage Wall A Doors 1 & 2 Casings & Jambs	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Garage	1	1		

COMPONENT & LOCATION OF HAZARD	SEVERITY*	PRIORITY**	ABATEMENT OPTIONS	INTERIM CONTROL OPTIONS
Wall A Doors 1 & 2 Lintels			1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.
Exterior Wall A Windows 1 & 2 Shutters	1	1	1) Enclose all lead painted surfaces or 2) replace individual lead painted components or 3) strip all surfaces bare to the substrate (either chemically or using mechanical wet methods), stabilize surfaces, and paint.	Wet scrape/sand all surfaces, make necessary repairs, stabilize all surfaces and re-paint or perform lead cleaning.

** Severity: 1 = most severe; 2 = very severe; 3 = somewhat severe*

***Priority: 1 = high priority; 2 = medium priority; 3 = low priority*

RESULTS OF TESTED SURFACES

The following tables detail levels of lead found in paint, dust, and soil on your property.

Positive Lead-Paint Results

All paint testing results in Appendix D.

TABLE 2: POSITIVE LEAD-PAINT RESULTS

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULTS
12	Single Family	2nd Floor	Bedroom 3	1	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	2.7	1	Positive
14	Single Family	2nd Floor	Bedroom 3	1	D	Window	Casing	Wood	White	Intact	None	No	No	No	3.9	1	Positive
15	Single Family	2nd Floor	Bedroom 3	1	D	Window	Sash	Wood	White	Intact	None	No	No	No	7.5	1	Positive
16	Single Family	2nd Floor	Bedroom 3	1	A	Window	Sill	Wood	White	Deteriorated	Substrate	No	No	No	4.8	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULTS
17	Single Family	2nd Floor	Bedroom 3	1	A	Window	Jamb	Wood	White	Intact	None	No	No	No	1.4	1	Positive
18	Single Family	2nd Floor	Bedroom 3	1	A	Door	Casing	Wood	White	Intact	None	No	No	No	4.1	1	Positive
19	Single Family	2nd Floor	Bedroom 3	1	A	Door	Panel	Wood	White	Intact	None	No	No	No	7.8	1	Positive
25	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Shelf	Wood	White	Intact	None	No	No	No	2.8	1	Positive
26	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Rail	Wood	White	Intact	None	No	No	No	3.1	1	Positive
27	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Chute	Wood	White	Intact	None	No	No	No	6.2	1	Positive
28	Single Family	2nd Floor	Bedroom 3	1	C	Door	Jamb	Wood	White	Intact	None	No	No	No	3.3	1	Positive
29	Single Family	2nd Floor	Bedroom 3	1	C	Door	Casing	Wood	White	Deteriorated	Substrate	No	No	No	4.1	1	Positive
30	Single Family	2nd Floor	Bedroom 3	1	C	Door	Panel	Wood	White	Deteriorated	Substrate	No	No	No	3.2	1	Positive
31	Single Family	1st Floor	Entry Hall	2	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	1	1	Positive
36	Single Family	1st Floor	Entry Hall	2	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	3.6	1	Positive
39	Single Family	1st Floor	Entry Hall	2	D	Door2	Casing	Wood	White	Intact	None	No	No	No	3.7	1	Positive
40	Single Family	1st Floor	Entry Hall	2	A	Door	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
41	Single Family	1st Floor	Entry Hall	2	A	Door	Panel	Wood	White	Intact	None	No	No	No	6.6	1	Positive
42	Single Family	1st Floor	Entry Hall	2	A	Door1	Casing	Wood	White	Intact	None	No	No	No	3.2	1	Positive
43	Single Family	1st Floor	Entry Hall	2	B	Door1	Jamb	Wood	White	Intact	None	No	No	No	4.6	1	Positive
45	Single Family	1st Floor	Entry Hall	2	B	Door2	Casing	Wood	White	Intact	None	No	No	No	4	1	Positive
46	Single Family	1st Floor	Entry Hall	2	B	Door3	Casing	Wood	White	Intact	None	No	No	No	3.5	1	Positive
47	Single Family	1st Floor	Entry Hall	2	B	Door3	Jamb	Wood	White	Intact	None	No	No	No	3.4	1	Positive
48	Single Family	1st Floor	Entry Hall	2	B	Closet	Ceiling	Plaster	White	Intact	None	No	No	No	6.9	1	Positive
51	Single Family	1st Floor	Entry Hall	2	B	Closet	Rail	Wood	White	Intact	None	No	No	No	2.8	1	Positive
52	Single Family	1st Floor	Entry Hall	2	B	Closet	Shelf	Wood	White	Intact	None	No	No	No	1.2	1	Positive
57	Single Family	1st Floor	Bathroom1	3	A	Window	Casing	Wood	White	Intact	None	No	No	No	3.5	1	Positive
58	Single Family	1st Floor	Bathroom1	3	A	Window	Sash	Wood	White	Intact	None	No	No	No	10.8	1	Positive
59	Single Family	1st Floor	Bathroom1	3	C	Door	Casing	Wood	White	Intact	None	No	No	No	7.2	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULTS
60	Single Family	1st Floor	Bathroom1	3	C	Door	Stop	Wood	White	Intact	None	No	No	No	5.9	1	Positive
62	Single Family	1st Floor	Kitchen	4	A	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	1	1	Positive
65	Single Family	1st Floor	Kitchen	4	D	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	1	1	Positive
66	Single Family	1st Floor	Kitchen	4	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	4.5	1	Positive
68	Single Family	1st Floor	Kitchen	4	D	Door	Jamb	Wood	White	Intact	None	No	No	No	4.3	1	Positive
70	Single Family	1st Floor	Kitchen	4	A	Window	Casing	Wood	White	Intact	None	No	No	No	4.6	1	Positive
71	Single Family	1st Floor	Kitchen	4	A	Window	Sill	Wood	White	Intact	None	No	No	No	3.3	1	Positive
73	Single Family	1st Floor	Kitchen	4	D	Cabinet	Stile	Wood	White	Intact	None	No	No	No	9.1	1	Positive
80	Single Family	1st Floor	Living Room	5	C	Door	Casing	Plaster	White	Intact	None	No	No	No	7.7	1	Positive
81	Single Family	1st Floor	Living Room	5	C	Door	Stile	Plaster	White	Intact	None	No	No	No	5	1	Positive
82	Single Family	1st Floor	Living Room	5	C	Fireplace	Mantle	Wood	White	Intact	None	No	No	No	10.1	1	Positive
83	Single Family	1st Floor	Living Room	5	A	Door	Casing	Wood	White	Intact	None	No	No	No	4.9	1	Positive
86	Single Family	1st Floor	Dining Rm	6	B	Window2	Stop	Wood	White	Intact	None	No	No	No	5.6	1	Positive
87	Single Family	1st Floor	Dining Rm	6	B	Window2	Casing	Wood	White	Intact	None	No	No	No	7.6	1	Positive
88	Single Family	1st Floor	Dining Rm	6	B	Window1	Casing	Wood	White	Intact	None	No	No	No	5.2	1	Positive
89	Single Family	1st Floor	Dining Rm	6	B	Window1	Sash	Wood	White	Intact	None	No	No	No	8.5	1	Positive
117	Single Family	1st Floor	Stairwell1	9	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	6.8	1	Positive
121	Single Family	1st Floor	Stairwell1	9	B	Stair	Riser	Wood	White	Intact	None	No	No	No	6.1	1	Positive
122	Single Family	1st Floor	Stairwell1	9	B	Stair	Stringer	Wood	White	Intact	None	No	No	No	5.7	1	Positive
128	Single Family	Second	Bedroom2	10	B	Wall	Baseboard	Wood	White	Intact	None	No	No	No	4.2	1	Positive
129	Single Family	Second	Bedroom2	10	B	Door1	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
130	Single Family	Second	Bedroom2	10	B	Door1	Panel	Wood	White	Intact	None	No	No	No	6.4	1	Positive
131	Single Family	Second	Bedroom2	10	B	Door2	Jamb	Wood	White	Intact	None	No	No	No	3	1	Positive
132	Single Family	Second	Bedroom2	10	B	Door2	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
133	Single Family	Second	Bedroom2	10	A	Window	Casing	Wood	White	Intact	None	No	No	No	2.8	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULTS
134	Single Family	Second	Bedroom2	10	A	Window	Apron	Wood	White	Intact	None	No	No	No	3.1	1	Positive
135	Single Family	Second	Bedroom2	10	D	Window	Apron	Wood	White	Intact	None	No	No	No	3.1	1	Positive
136	Single Family	Second	Bedroom2	10	D	Window	Casing	Wood	White	Intact	None	No	No	No	3	1	Positive
137	Single Family	Second	Bedroom2	10	D	Wall	Shelf	Wood	White	Intact	None	No	No	No	1.7	1	Positive
143	Single Family	Second	Bedroom2	10	B	Closet	Access Panel	Plaster	White	Intact	None	No	No	No	4.5	1	Positive
144	Single Family	Second	Bedroom2	10	B	Closet	Rail	Wood	White	Intact	None	No	No	No	2.9	1	Positive
145	Single Family	Second	Bedroom2	10	B	Closet	Shelf	Wood	White	Intact	None	No	No	No	3.6	1	Positive
151	Single Family	Second	Bedroom4	11	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	3.3	1	Positive
152	Single Family	Second	Bedroom4	11	D	Door	Jamb	Wood	White	Intact	None	No	No	No	3.4	1	Positive
154	Single Family	Second	Bedroom4	11	D	Window	Apron	Wood	White	Intact	None	No	No	No	2.8	1	Positive
155	Single Family	Second	Bedroom4	11	D	Window	Sill	Wood	White	Deteriorated	Substrate	No	No	No	2.6	1	Positive
156	Single Family	Second	Bedroom4	11	B	Door	Casing	Wood	White	Intact	None	No	No	No	3.8	1	Positive
158	Single Family	Second	Bedroom4	11	B	Window1	Sash	Wood	White	Deteriorated	Substrate	No	No	No	9.7	1	Positive
159	Single Family	Second	Bedroom4	11	B	Window1	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
160	Single Family	Second	Bedroom4	11	B	Window2	Sill	Wood	White	Deteriorated	Substrate	No	No	No	2.2	1	Positive
161	Single Family	Second	Bedroom4	11	B	Window2	Sash	Wood	White	Intact	None	No	No	No	10.5	1	Positive
162	Single Family	Second	Bedroom4	11	C	Window	Sill	Wood	White	Deteriorated	Substrate	No	No	No	3.4	1	Positive
163	Single Family	Second	Bedroom4	11	C	Window	Casing	Wood	White	Intact	None	No	No	No	3.1	1	Positive
164	Single Family	Second	Bedroom4	11	C	Door	Casing	Wood	White	Deteriorated	Substrate	No	No	No	3.7	1	Positive
165	Single Family	Second	Bedroom4	11	C	Door	Jamb	Wood	White	Intact	None	No	No	No	3.6	1	Positive
175	Single Family	Second	Bathroom3	12	C	Wall	Wall	Plaster	White	Intact	None	No	No	No	1	1	Positive
177	Single Family	Second	Bathroom3	12	A	Door	Casing	Wood	White	Intact	None	No	No	No	3.1	1	Positive
179	Single Family	Second	Bathroom3	12	D	Door	Casing	Wood	White	Intact	None	No	No	No	6.8	1	Positive
180	Single Family	Second	Bathroom3	12	D	Door	Panel	Wood	White	Intact	None	No	No	No	5.5	1	Positive
181	Single Family	Second	Bathroom3	12	C	Window	Casing	Wood	White	Intact	None	No	No	No	3.9	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULTS
182	Single Family	Second	Bathroom3	12	C	Window	Sill	Wood	White	Intact	None	No	No	No	3.3	1	Positive
183	Single Family	Second	Bathroom3	12	D	Closet	Ceiling	Wood	White	Intact	None	No	No	No	4.5	1	Positive
184	Single Family	Second	Bathroom3	12	D	Closet	A Wall	Wood	White	Intact	None	No	No	No	4.5	1	Positive
185	Single Family	Second	Bathroom3	12	D	Closet	C Wall	Wood	White	Intact	None	No	No	No	5.1	1	Positive
187	Single Family	Second	Bathroom3	12	D	Closet	Rail	Wood	White	Intact	None	No	No	No	1.3	1	Positive
188	Single Family	Second	Bathroom3	12	D	Closet	Drawer	Wood	White	Intact	None	No	No	No	4.8	1	Positive
194	Single Family	Second	Hall	13	A	Door	Casing	Wood	White	Intact	None	No	No	No	8.2	1	Positive
195	Single Family	Second	Hall	13	A	Door	Jamb	Wood	White	Intact	None	No	No	No	7	1	Positive
196	Single Family	Second	Hall	13	B	Door	Jamb	Wood	White	Intact	None	No	No	No	4.2	1	Positive
197	Single Family	Second	Hall	13	B	Door	Panel	Wood	White	Intact	None	No	No	No	3.7	1	Positive
198	Single Family	Second	Hall	13	C	Door1	Panel	Wood	White	Intact	None	No	No	No	2.8	1	Positive
199	Single Family	Second	Hall	13	C	Door1	Stop	Wood	White	Intact	None	No	No	No	3.8	1	Positive
200	Single Family	Second	Hall	13	C	Door2	Casing	Wood	White	Intact	None	No	No	No	4.5	1	Positive
201	Single Family	Second	Hall	13	C	Door2	Rail	Wood	White	Intact	None	No	No	No	3.2	1	Positive
202	Single Family	First	Exterior	14	D	Door	Jamb	Wood	White	Intact	None	No	No	No	25.8	1	Positive
203	Single Family	First	Exterior	14	D	Door	Casing	Wood	White	Deteriorated	Moisture	No	No	No	29	1	Positive
204	Single Family	First	Exterior	14	A	Wall	Address Plate	Wood	White	Deteriorated	Moisture	No	No	No	16.8	1	Positive
205	Single Family	First	Exterior	14	A	Window1	Sash	Wood	White	Deteriorated	Moisture	No	No	No	8.9	1	Positive
206	Single Family	First	Exterior	14	A	Window1	Stop	Wood	White	Deteriorated	Moisture	No	No	No	8.3	1	Positive
207	Single Family	First	Exterior	14	A	Window2	Stop	Wood	White	Deteriorated	Moisture	No	No	No	7.3	1	Positive
208	Single Family	First	Exterior	14	A	Window2	Sash	Wood	White	Deteriorated	Moisture	No	No	No	8	1	Positive
209	Single Family	First	Exterior	14	A	Window3	Stop	Wood	White	Deteriorated	Moisture	No	No	No	8.6	1	Positive
210	Single Family	First	Exterior	14	A	Window3	Sash	Wood	White	Deteriorated	Moisture	No	No	No	8.4	1	Positive
247	Single Family	First	Garage	19	A	Door1	Casing	Wood	White	Deteriorated	Moisture	No	No	No	26.1	1	Positive
248	Single Family	First	Garage	19	A	Door1	Jamb	Wood	White	Deteriorated	Moisture	No	No	No	29.8	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULTS
249	Single Family	First	Garage	19	A	Door2	Jamb	Wood	White	Deteriorated	Moisture	No	No	No	33	1	Positive
250	Single Family	First	Garage	19	A	Door2	Casing	Wood	White	Deteriorated	Moisture	No	No	No	23.8	1	Positive
251	Single Family	First	Garage	19	A	Door2	Lintel	Metal	White	Deteriorated	Moisture	No	No	No	27	1	Positive
252	Single Family	First	Garage	19	A	Door1	Lintel	Metal	White	Deteriorated	Moisture	No	No	No	23.9	1	Positive
256	Single Family	First	Exterior	14	B	Window 2	Storm Sash	Wood	White	Deteriorated	Moisture	No	No	No	2.8	1	Positive
257	Single Family	First	Exterior	14	B	Window 3	Sorm Sash	Wood	White	Deteriorated	Moisture	No	No	No	6.3	1	Positive
258	Single Family	First	Exterior	14	B	Window 4	Storm Sash	Wood	White	Deteriorated	Moisture	No	No	No	2.1	1	Positive
259	Single Family	First	Exterior	14	A	Window1	Shutter	Wood	White	Deteriorated	Moisture	No	No	No	1.3	1	Positive
260	Single Family	First	Exterior	14	A	Window 2	Shutter	Wood	White	Deteriorated	Moisture	No	No	No	2	1	Positive

**HUD reporting limits for positive XRF results are ≥ 1.0 mg/cm² (milligrams per square centimeter) for painted or glazed surfaces.*

Dust Wipe Sample Results

TABLE 3: DUST WIPE SAMPLE RESULTS

SAMPLE #	ROOM/WIPE LOCATION	SURFACE TESTED HF Hard Floor CF Carpet Floor T Trough S Stool/Sill O Other	LEAD HAZARD?	LAB RESULT (µg/ft²)
1	LIVING ROOM	HF	No	<5.00
2	LIVING ROOM	S	No	51.69
3	DINING ROOM	HF	No	<5.00
4	DINING ROOM	S	No	32.48
5	KITCHEN	HF	No	<5.00
6	**KITCHEN**	T	**Yes**	**32810.82**

SAMPLE #	ROOM/WIPE LOCATION	SURFACE TESTED HF Hard Floor CF Carpet Floor T Trough S Stool/Sill O Other	LEAD HAZARD?	LAB RESULT (µg/ft²)
7	BATHROOM 2	HF	No	5.34
8	**BATHROOM 2**	**T**	**Yes**	**174.73**
9	BEDROOM 1	HF	No	<5.00
10	BEDROOM 1	T2	No	<21.18
11	BEDROOM 3	HF	No	5.25
12	**BEDROOM 3**	**S**	**Yes**	**144.87**
13	Field Blank	N/A	No	<5.00

For all HUD/Medicaid projects lead action levels for dust: Floors = 10 µg/ft² (micrograms per square feet); Porches = 40 µg/ft²; Window stools/interior sills = 100 µg/ft²; Window troughs = 100 µg/ft². BRL = Below Reporting Limits. N/D = Not Detected.

Soil Sample Results

☒ Soil samples not collected due to snow or frozen ground.

☐ Soil samples not collected due to no bare soil present.

If either box above is checked, soil sample results will not be included because soil samples were not taken.

TABLE 4: SOIL SAMPLE RESULTS				
SAMPLE #	LOCATION OF BARE SOIL AREA	APPROXIMATE AREA IN SQUARE-FEET (FT^2)	LEAD HAZARD?	LAB RESULT IN PARTS PER MILLION (ppm)
N/A	N/A	N/A	N/A	N/A

EPA and HUD lead action levels: Soil – at 1,200 ppm; Child play oreas and gardens – at 400 ppm or more. BRL = Below Reporting Limits. N/D = Not Detected.

Other Surface Sample Results

The table below details all surfaces that do not have paint that were tested. Testing these surfaces can help find other sources of lead-exposure. These surfaces are not required to be tested.

TABLE 5: OTHER SURFACE SAMPLE RESULTS			
SURFACE/ITEM DESCRIPTION	LOCATION	MATERIAL	RESULT (mg/cm^2)
N/A	N/A	N/A	N/A

Items listed above were tested using an XRF. The results are limited because the surfaces tested do not comply with the devices testing ability. ***Positive lead results are in bold.*** *These items may be a potential source of lead exposure. [mg/cm^2 = milligrams per squore centimeter]*

SURFACES UNABLE TO BE TESTED

A lead investigation requires testing all painted surfaces. Some painted surfaces in your home may be out of reach. These surfaces are not tested. Surfaces out of reach that are not tested are assumed to contain lead-based paint. If the paint looks deteriorated, the surface is assumed a lead-based paint hazard. The table below details all of the untested painted surfaces. It also details why the surface was not tested.

TABLE 6: SURFACES UNABLE TO TEST		
ROOM	COMPONENT	REASON NOT TESTED
EXTERIOR	WALL B WINDOW STOPS & SASHES	FIXED WINDOW
EXTERIOR	WALL B WINDOW LINTELS	COULD NOT REACH

HUD reporting limits for positive XRF results are ≥ 1.0 mg/cm^2 (milligroms per square centimeter) for painted or glazed surface.

POTENTIAL HAZARDS

Lead can exist in your home and not be a hazard. The table below details all surfaces found to contain lead but are not current hazards. Please make a note of these surfaces and remember to monitor them for changes. Any changes could make the surface a lead-hazard, which will alter severity and priority levels and require lead hazard control options. Refer to Appendix C-3 for ways to monitor.

TABLE 7: POTENTIAL HAZARDS

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
12	Single Family	2nd Floor	Bedroom 3	1	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	2.7	1	Positive
14	Single Family	2nd Floor	Bedroom 3	1	D	Window	Casing	Wood	White	Intact	None	No	No	No	3.9	1	Positive
15	Single Family	2nd Floor	Bedroom 3	1	D	Window	Sash	Wood	White	Intact	None	No	No	No	7.5	1	Positive
17	Single Family	2nd Floor	Bedroom 3	1	A	Window	Jamb	Wood	White	Intact	None	No	No	No	1.4	1	Positive
18	Single Family	2nd Floor	Bedroom 3	1	A	Door	Casing	Wood	White	Intact	None	No	No	No	4.1	1	Positive
19	Single Family	2nd Floor	Bedroom 3	1	A	Door	Panel	Wood	White	Intact	None	No	No	No	7.8	1	Positive
25	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Shelf	Wood	White	Intact	None	No	No	No	2.8	1	Positive
26	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Rail	Wood	White	Intact	None	No	No	No	3.1	1	Positive
27	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Chute	Wood	White	Intact	None	No	No	No	6.2	1	Positive
28	Single Family	2nd Floor	Bedroom 3	1	C	Door	Jamb	Wood	White	Intact	None	No	No	No	3.3	1	Positive
31	Single Family	1st Floor	Entry Hall	2	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	1	1	Positive
36	Single Family	1st Floor	Entry Hall	2	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	3.6	1	Positive
39	Single Family	1st Floor	Entry Hall	2	D	Door2	Casing	Wood	White	Intact	None	No	No	No	3.7	1	Positive
40	Single Family	1st Floor	Entry Hall	2	A	Door	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
41	Single Family	1st Floor	Entry Hall	2	A	Door	Panel	Wood	White	Intact	None	No	No	No	6.6	1	Positive
42	Single Family	1st Floor	Entry Hall	2	A	Door1	Casing	Wood	White	Intact	None	No	No	No	3.2	1	Positive
43	Single Family	1st Floor	Entry Hall	2	B	Door1	Jamb	Wood	White	Intact	None	No	No	No	4.6	1	Positive
45	Single Family	1st Floor	Entry Hall	2	B	Door2	Casing	Wood	White	Intact	None	No	No	No	4	1	Positive
46	Single Family	1st Floor	Entry Hall	2	B	Door3	Casing	Wood	White	Intact	None	No	No	No	3.5	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
47	Single Family	1st Floor	Entry Hall	2	B	Door3	Jamb	Wood	White	Intact	None	No	No	No	3.4	1	Positive
48	Single Family	1st Floor	Entry Hall	2	B	Closet	Ceiling	Plaster	White	Intact	None	No	No	No	6.9	1	Positive
51	Single Family	1st Floor	Entry Hall	2	B	Closet	Rail	Wood	White	Intact	None	No	No	No	2.8	1	Positive
52	Single Family	1st Floor	Entry Hall	2	B	Closet	Shelf	Wood	White	Intact	None	No	No	No	1.2	1	Positive
57	Single Family	1st Floor	Bathroom1	3	A	Window	Casing	Wood	White	Intact	None	No	No	No	3.5	1	Positive
58	Single Family	1st Floor	Bathroom1	3	A	Window	Sash	Wood	White	Intact	None	No	No	No	10.8	1	Positive
59	Single Family	1st Floor	Bathroom1	3	C	Door	Casing	Wood	White	Intact	None	No	No	No	7.2	1	Positive
60	Single Family	1st Floor	Bathroom1	3	C	Door	Stop	Wood	White	Intact	None	No	No	No	5.9	1	Positive
62	Single Family	1st Floor	Kitchen	4	A	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	1	1	Positive
65	Single Family	1st Floor	Kitchen	4	D	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	1	1	Positive
66	Single Family	1st Floor	Kitchen	4	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	4.5	1	Positive
68	Single Family	1st Floor	Kitchen	4	D	Door	Jamb	Wood	White	Intact	None	No	No	No	4.3	1	Positive
70	Single Family	1st Floor	Kitchen	4	A	Window	Casing	Wood	White	Intact	None	No	No	No	4.6	1	Positive
71	Single Family	1st Floor	Kitchen	4	A	Window	Sill	Wood	White	Intact	None	No	No	No	3.3	1	Positive
73	Single Family	1st Floor	Kitchen	4	D	Cabinet	Stile	Wood	White	Intact	None	No	No	No	9.1	1	Positive
80	Single Family	1st Floor	Living Room	5	C	Door	Casing	Plaster	White	Intact	None	No	No	No	7.7	1	Positive
81	Single Family	1st Floor	Living Room	5	C	Door	Stile	Plaster	White	Intact	None	No	No	No	5	1	Positive
82	Single Family	1st Floor	Living Room	5	C	Fireplace	Mantle	Wood	White	Intact	None	No	No	No	10.1	1	Positive
83	Single Family	1st Floor	Living Room	5	A	Door	Casing	Wood	White	Intact	None	No	No	No	4.9	1	Positive
86	Single Family	1st Floor	Dining Rm	6	B	Window2	Stop	Wood	White	Intact	None	No	No	No	5.6	1	Positive
87	Single Family	1st Floor	Dining Rm	6	B	Window2	Casing	Wood	White	Intact	None	No	No	No	7.6	1	Positive
88	Single Family	1st Floor	Dining Rm	6	B	Window1	Casing	Wood	White	Intact	None	No	No	No	5.2	1	Positive
89	Single Family	1st Floor	Dining Rm	6	B	Window1	Sash	Wood	White	Intact	None	No	No	No	8.5	1	Positive
117	Single Family	1st Floor	Stairwell1	9	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	6.8	1	Positive
121	Single Family	1st Floor	Stairwell1	9	B	Stair	Riser	Wood	White	Intact	None	No	No	No	6.1	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
122	Single Family	1st Floor	Stairwell1	9	B	Stair	Stringer	Wood	White	Intact	None	No	No	No	5.7	1	Positive
128	Single Family	Second	Bedroom2	10	B	Wall	Baseboard	Wood	White	Intact	None	No	No	No	4.2	1	Positive
129	Single Family	Second	Bedroom2	10	B	Door1	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
130	Single Family	Second	Bedroom2	10	B	Door1	Panel	Wood	White	Intact	None	No	No	No	6.4	1	Positive
131	Single Family	Second	Bedroom2	10	B	Door2	Jamb	Wood	White	Intact	None	No	No	No	3	1	Positive
132	Single Family	Second	Bedroom2	10	B	Door2	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
133	Single Family	Second	Bedroom2	10	A	Window	Casing	Wood	White	Intact	None	No	No	No	2.8	1	Positive
134	Single Family	Second	Bedroom2	10	A	Window	Apron	Wood	White	Intact	None	No	No	No	3.1	1	Positive
135	Single Family	Second	Bedroom2	10	D	Window	Apron	Wood	White	Intact	None	No	No	No	3.1	1	Positive
136	Single Family	Second	Bedroom2	10	D	Window	Casing	Wood	White	Intact	None	No	No	No	3	1	Positive
137	Single Family	Second	Bedroom2	10	D	Wall	Shelf	Wood	White	Intact	None	No	No	No	1.7	1	Positive
143	Single Family	Second	Bedroom2	10	B	Closet	Access Panel	Plaster	White	Intact	None	No	No	No	4.5	1	Positive
144	Single Family	Second	Bedroom2	10	B	Closet	Rail	Wood	White	Intact	None	No	No	No	2.9	1	Positive
145	Single Family	Second	Bedroom2	10	B	Closet	Shelf	Wood	White	Intact	None	No	No	No	3.6	1	Positive
151	Single Family	Second	Bedroom4	11	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	3.3	1	Positive
152	Single Family	Second	Bedroom4	11	D	Door	Jamb	Wood	White	Intact	None	No	No	No	3.4	1	Positive
154	Single Family	Second	Bedroom4	11	D	Window	Apron	Wood	White	Intact	None	No	No	No	2.8	1	Positive
156	Single Family	Second	Bedroom4	11	B	Door	Casing	Wood	White	Intact	None	No	No	No	3.8	1	Positive
159	Single Family	Second	Bedroom4	11	B	Window1	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
161	Single Family	Second	Bedroom4	11	B	Window2	Sash	Wood	White	Intact	None	No	No	No	10.5	1	Positive
163	Single Family	Second	Bedroom4	11	C	Window	Casing	Wood	White	Intact	None	No	No	No	3.1	1	Positive
165	Single Family	Second	Bedroom4	11	C	Door	Jamb	Wood	White	Intact	None	No	No	No	3.6	1	Positive
175	Single Family	Second	Bathroom3	12	C	Wall	Wall	Plaster	White	Intact	None	No	No	No	1	1	Positive
177	Single Family	Second	Bathroom3	12	A	Door	Casing	Wood	White	Intact	None	No	No	No	3.1	1	Positive
179	Single Family	Second	Bathroom3	12	D	Door	Casing	Wood	White	Intact	None	No	No	No	6.8	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
180	Single Family	Second	Bathroom3	12	D	Door	Panel	Wood	White	Intact	None	No	No	No	5.5	1	Positive
181	Single Family	Second	Bathroom3	12	C	Window	Casing	Wood	White	Intact	None	No	No	No	3.9	1	Positive
182	Single Family	Second	Bathroom3	12	C	Window	Sill	Wood	White	Intact	None	No	No	No	3.3	1	Positive
183	Single Family	Second	Bathroom3	12	D	Closet	Ceiling	Wood	White	Intact	None	No	No	No	4.5	1	Positive
184	Single Family	Second	Bathroom3	12	D	Closet	A Wall	Wood	White	Intact	None	No	No	No	4.5	1	Positive
185	Single Family	Second	Bathroom3	12	D	Closet	C Wall	Wood	White	Intact	None	No	No	No	5.1	1	Positive
187	Single Family	Second	Bathroom3	12	D	Closet	Rail	Wood	White	Intact	None	No	No	No	1.3	1	Positive
188	Single Family	Second	Bathroom3	12	D	Closet	Drawer	Wood	White	Intact	None	No	No	No	4.8	1	Positive
194	Single Family	Second	Hall	13	A	Door	Casing	Wood	White	Intact	None	No	No	No	8.2	1	Positive
195	Single Family	Second	Hall	13	A	Door	Jamb	Wood	White	Intact	None	No	No	No	7	1	Positive
196	Single Family	Second	Hall	13	B	Door	Jamb	Wood	White	Intact	None	No	No	No	4.2	1	Positive
197	Single Family	Second	Hall	13	B	Door	Panel	Wood	White	Intact	None	No	No	No	3.7	1	Positive
198	Single Family	Second	Hall	13	C	Door1	Panel	Wood	White	Intact	None	No	No	No	2.8	1	Positive
199	Single Family	Second	Hall	13	C	Door1	Stop	Wood	White	Intact	None	No	No	No	3.8	1	Positive
200	Single Family	Second	Hall	13	C	Door2	Casing	Wood	White	Intact	None	No	No	No	4.5	1	Positive
201	Single Family	Second	Hall	13	C	Door2	Rail	Wood	White	Intact	None	No	No	No	3.2	1	Positive
202	Single Family	First	Exterior	14	D	Door	Jamb	Wood	White	Intact	None	No	No	No	25.8	1	Positive

**HUD reporting limits for positive XRF results are ≥ 1.0 mg/cm² (milligrams per square centimeter) for painted or glazed surfaces.*

Water Testing – N/A

RESULTS & RECOMMENDATIONS – N/A

VERIFICATION QUESTIONS & ANSWERS – N/A

BEHAVIORAL PATTERNS – N/A

VISUAL PLUMBING ASSESSMENT – N/A

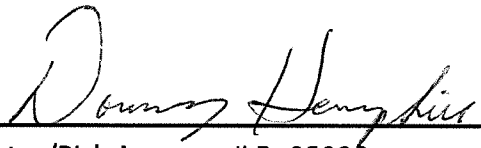
TABLE W.1: WATER SAMPLE RESULTS – N/A

Inspector Summary

Some windows on this unit are vinyl. Vinyl windows are not warped.

Inspector Certification

The information contained in this report is a true and accurate representation of the conditions and activities at this property at the time of this investigation, based on the professional judgement of the person(s) who conducted and reported this Environmental Investigation. If soil samples were not collected as indicated in Table 4 due to snow, these samples will be collected at the earliest opportunity. An amended report will be sent with any soil hazards found and corrective action options.

Name Donnez Hemphill  02/25/2020

Michigan Certified Lead Inspector/Risk Assessor # P- 05920

Risk Assessor E-Mail: dhemphill@gsgroupmi.com

Appendices

APPENDIX A – RESIDENT INTERVIEW

The purpose of this interview is to help find where to take dust and soil samples. Questions will help find:

- Most frequently used entrances and windows.
- Areas where children sleep, eat, and play.
- Recent renovations.
- Etc.

Resident Interview Questions & Responses:

This house is currently: Occupied
Person interviewed: Byron Boykin
Relationship to child: N/A

FAMILY USE PATTERNS	
QUESTION	**RESPONSE**
Which entrances are used most frequently?	Front Door
Are there floor mats at entrances to the home?	No
Do occupants take shoes off at the door?	No
Which windows are opened most frequently?	Bathroom
Is there a window fan that is used during summer months?	No
Are window air conditioners used? **Is there paint damage from condensate?** ***If yes, what room?***	No No
I need to dust test the window sill in this room for lead. **When was the last time it was wiped down?**	Every Month
Does your family eat food grown in a garden? **Does your child play in this garden?**	No N/A
What cleaning methods do you use at home?	Mopping

OTHER HOUSEHOLD RISK FACTORS	
QUESTION	**RESPONSE**

Do you have a dog, cat, or other pet that could track soil or dust inside?	Yes

Does your child have access to any of the following?

☐ Industrial (big) crayons or markers			N/A
☐ Paints	☐ Detergents	☐ Shellacs	
☐ Dyes	☐ Batteries	☐ Lacquers	
☐ Coloring pigments	☐ Gear oil	☐ Epoxy resins	
☐ Putty	☐ Pipe sealants	☐ Pesticides	

FREQUENT AREAS CHILD VISITS

QUESTION	RESPONSE
Is your child cared for away from home? (This includes preschool and/or child care at a center, dedicated home, or with a friend or relative).	N/A

If yes, where?

Type of Care	Location of Care / Address	Number of Hours/Week at Location
N/A	N/A	N/A

Where does your child like to sleep, eat, and play?

CHILD	AGE	BEDROOM	EATS	PLAYS INDOORS	PLAYS OUTDOORS
Child 1	Age	Bedroom	Eats where?	Plays where?	Plays where?
N/A	N/A	N/A	N/A	N/A	N/a

CHILD BEHAVIOR RISK FACTORS

QUESTION	RESPONSE
Does your child suck his/her fingers or thumb?	N/A
Does your child put painted objects into their mouth? If yes, what objects?	N/A
Are there any areas of peeling paint on walls, ceilings, stairs, woodwork, furniture or toys?	N/A
Does your child chew on painted surfaces, such as painted cribs, window sills, furniture edges, railings, door moldings, or broom handles?	N/A
Are there bite marks found anywhere in the home, such as child's crib, furniture or window sills?	N/A
Does your child chew or eat paint chips or pick at painted surfaces?	N/A
Does your child put soft metal objects in the mouth? (Ex: pewter, metal toy soldiers, jewelry, gunshot, bullets, beads, fishing sinkers, electronics)	N/A
Does your child put printed material (newspapers, magazines) in their mouth?	N/A
Does your child eat without washing hands before meals or snacks?	N/A

When was the last time the toys were washed? Pacifiers?	N/A
Are there bare soil areas where the child likes to play? Where, specifically?	N/A
On a typical week this past summer, how much time did your child play outside in your yard?	N/A
Has the child been seen eating soil? Where?	N/A

DIETARY RISK FACTORS

QUESTION	RESPONSE
Does your family use imported canned foods?	N/A
Does the family use home remedies, folk medicines or herbal treatments? *Alarcon, Alkohl, Azarcon, Bali Goli, Coral, Ghasard, Greta, Liga, Pay-loo-ah, Rueda, Kohl, Surma or Ceruse*	N/A
Does child take dolomite, oyster shell or bone meal as a calcium or phosphorus supplement?	N/A
Is food prepared, served or stored in glazed ceramic, pewter, crystal, or lead soldered types of containers?	N/A
Does the child have a favorite cup or eating utensil? (If yes, what is it?)	N/A

OCCUPATIONAL/HOBBY RISK FACTORS

QUESTION	RESPONSE
Does anyone living with or caring for the child have an occupation or hobby that could result in lead exposure? Check all that apply:	N/A

- ☐ Auto body/boat (making parts; repairing)
- ☐ Batteries (making; repairing)
- ☐ Bronze polishing
- ☐ Burn painted wood
- ☐ Chemical stripper
- ☐ Construction (bridge/tunnel/highway repair)
- ☐ Construction (power washing older homes)
- ☐ Construction (renovating/remodeling older homes)
- ☐ Construction (wrecking; demolition)
- ☐ Create explosives or ammunition
- ☐ Electronics (making or splicing cable or wire)
- ☐ Electronics (soldering connections)
- ☐ Furniture (refinishing)
- ☐ Glass (leaded glass manufacturing)
- ☐ Pottery or ceramics (making)
- ☐ Radiator repair
- ☐ Use lead shot/bullets
- ☐ Use fishing sinkers
- ☐ Welding, burning, torch/cutting
- ☐ Work at firing range
- ☐ Work in oil refinery

- ☐ Glass (stained glass making)
- ☐ Glass (work in glass factory)
- ☐ Jewelry (making; repairing)
- ☐ Metal (brass/copper/aluminum processing)
- ☐ Metal (machining/grinding/melting lead alloys)
- ☐ Metal (melting for reuse (smelting))
- ☐ Metal (pouring molten metals: brass, copper, bronze, lead, iron (foundries))
- ☐ Metal (scrap metal handling/salvaging)
- ☐ Paint (art)
- ☐ Paint (manufacturing: non-residential
- ☐ Paint (removal: sandblasting, scraping, sanding, using heat guns or torches)
- ☐ Plastic/Rubber (products manufacturing)
- ☐ Plumber/Pipe fitter

OCCUPATIONAL/HOBBY RISK FACTORS	
QUESTION	RESPONSE
Name:	N/A
Relationship:	N/A
Occupation/Hobby:	N/A
Does the child have access to the area where the activity (occupation or hobby) takes place?	N/A
Are the clothes worn during these activities separated from family laundry?	N/A
Are work/hobby shoes worn into the house?	N/A
Is a vehicle used to commute to and from this activity and home?	N/A
Is the child held or greeted before this person showers, changes clothes or washes hands?	N/A
QUESTION	RESPONSE
Name:	N/A
Relationship:	N/A
Occupation/Hobby:	N/A
Does the child have access to the area where the activity (occupation or hobby takes place?	N/A
Are the clothes worn during these activities separated from family laundry?	N/A
Are work/hobby shoes worn into the house?	N/A

Is a vehicle used to commute to and from this activity and home?	N/A
Is the child held or greeted before this person showers, changes clothes or washes hands?	N/A

APPENDIX B – SITE INFORMATION

B-1: General Property Description:

Bungalow style unit. Bedrooms on first floor.

B-2: Building Condition

Exposure to lead is usually from lead-based paint. Lead-based paint becomes a source of lead exposure when the paint is deteriorated. Deteriorated paint is paint that is chipping or chalking, and may be caused by poor building conditions. A leaky roof is an example of a poor building condition that can cause paint to become deteriorated. Lead work cannot begin before building conditions causing paint to deteriorate are fixed. The building condition survey helps find these areas. "Yes" responses mean the building condition is poor and needs fixing.

BUILDING CONDITION SURVEY QUESTIONS & RESPONSES

GENERAL PROPERTY CONDITION	
QUESTION	**RESPONSE**
What year was this building built?	1925
Has there been any lead testing done to this property within the last year?	No
Were any external renovations done on a neighboring property? Repainting, remodeling, renovation, window replacement, sanding, scraping or power washing painted surfaces inside or outside of the home?	No
Have nearby buildings or structures (bridge, water tower, homes, etc.) recently been repainted, demolished or burned?	No
Were any home renovations done to your home within the past year?	No
Are you planning any building renovations?	Yes To Be Determined
Are you or the landlord planning any landscaping activities?	No
Is building debris stored in the yard?	No
Other notable conditions:	No

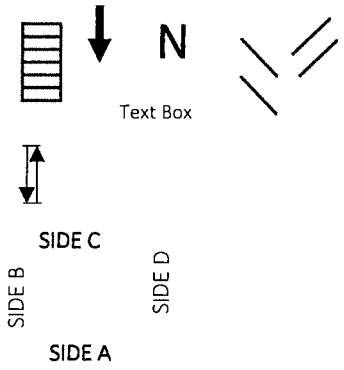
EXTERIOR BUILDING CONDITION	
QUESTION	**RESPONSE**

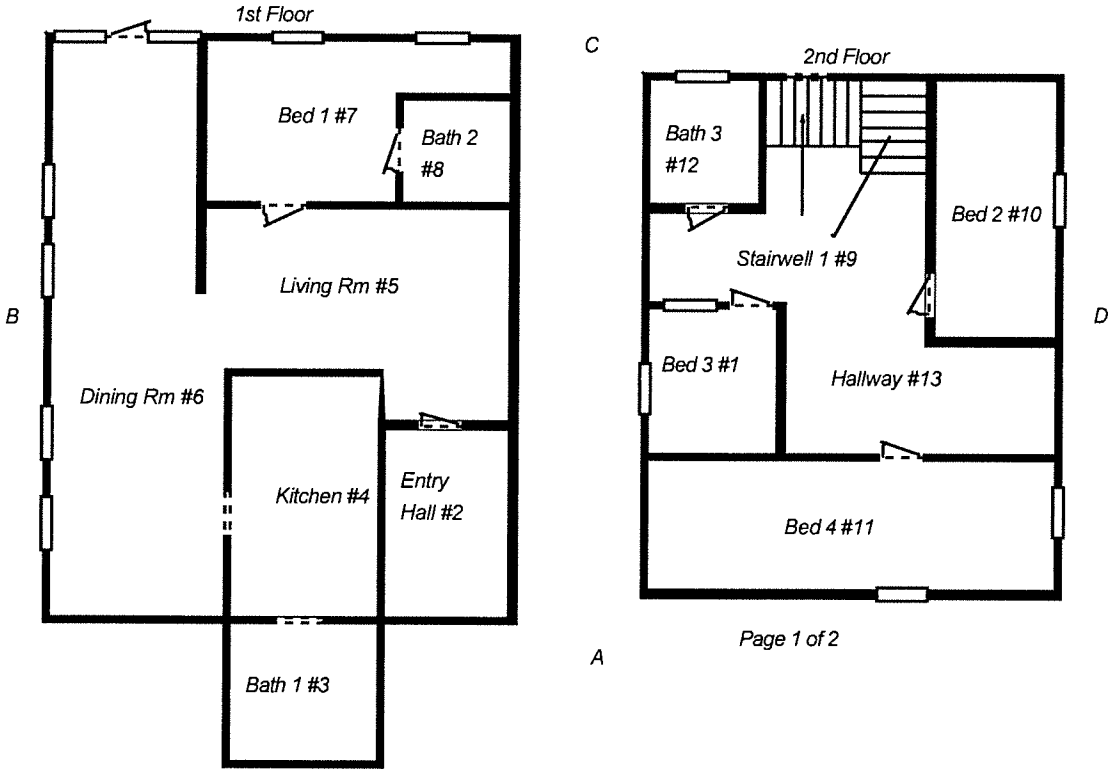
Is exterior siding missing components?	No
Is the roof missing parts?	No
Does the roof have holes or large cracks?	No
Are gutters or downspouts broken?	Yes Wall B
Are there two or more windows or doors missing, broken or boarded up?	No
Does the porch or steps have major cracks, missing materials, structural leans, or is it visibly unsound?	No
Do exterior walls have large cracks, or damage requiring more than routine painting?	No
Does the foundation have damage, structural leans or is it visibly unsound?	No
Are chimney blocks or masonry joints cracked, with loose or missing components, out of plumb or otherwise deteriorated?	No
Other notable conditions:	No

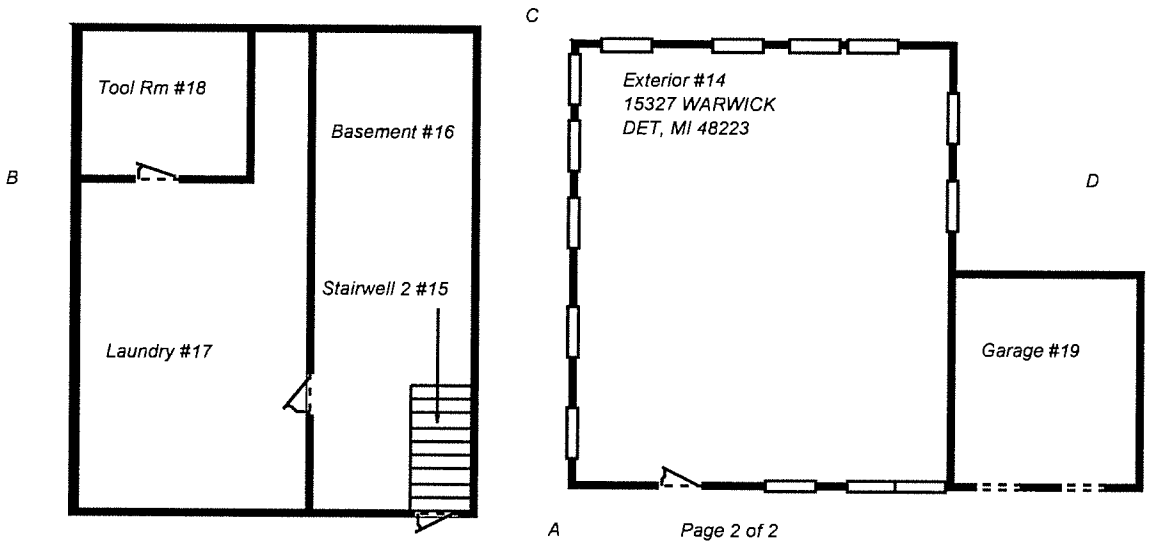
INTERIOR BUILDING CONDITION	
QUESTION	RESPONSE
Has there been any recent water damage in the home?	No
Are there water stains on interior walls or ceilings?	No
Are plaster walls or ceilings deteriorated?	Yes Bathroom 1
Do interior walls have large cracks, or damage requiring more than routine painting?	No
Is there any deteriorated paint in the home?	No
Are vinyl mini blinds present? Does child have access?	No
*Is the bathtub deteriorated? Does the child bathe in it?	No N/A

**Follow MDHHS Residential Lead Hazard Control-Lead in Water Protocol*
Other notable conditions: No

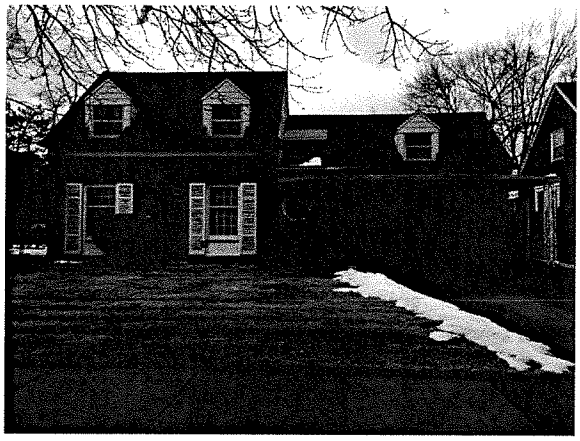
B-3: Floor Plans




1st Floor
Bed 1 #7
Bath 2
#8
Living Rm #5
Dining Rm #6
Kitchen #4
Entry
Hall #2
Bath 1 #3
2nd Floor
Bath 3
#12
Bed 2 #10
Stairwell 1 #9
Bed 3 #1
Hallway #13
Bed 4 #11
A
B
C
D

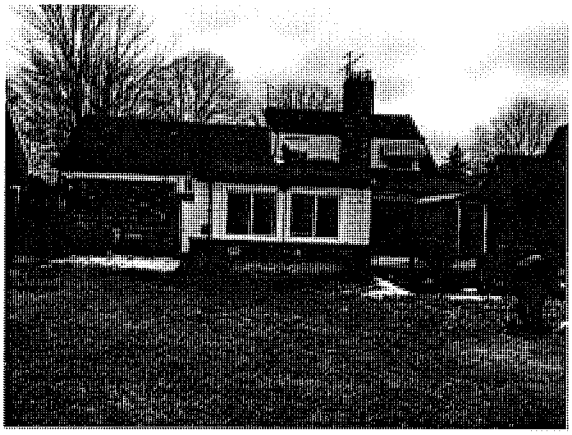

C
Tool Rm #18
Basement #16
B
Stairwell 2 #15
Laundry #17
Exterior #14
15327 WARWICK
DET, MI 48223
D
Garage #19
A

B-4: Photos



Side A

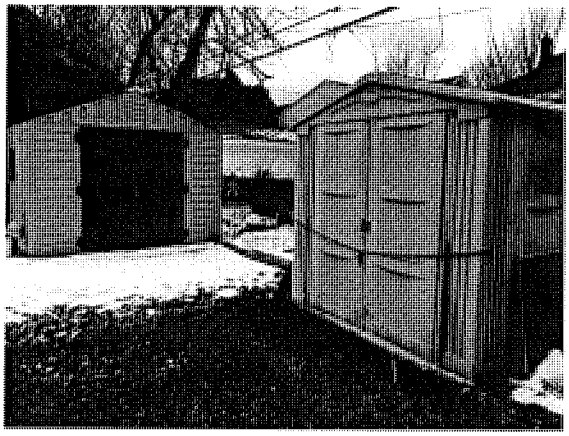
Side B



Side C

Side D

Garage



Shed Not Painted

APPENDIX C – LEAD: EDUCATION, TESTING, RESOURCES & LAWS

C-1: Lead Education

LEAD-BASED PAINT

Lead is a highly toxic metal. When we say paint, it includes:

- Varnishes
- Lacquers
- Stains
- Coatings
- Enamels
- Glazes
- Primers

Lead-based paint is a paint that has lead in it. Lead is used in paint to:

- Brighten the color
- Speed up drying time
- Reduce corrosion (weathering / wear and tear)

Lead was commonly used in household paint in homes built before **1978**. In 1978, the federal government banned the use of lead-based paint in homes (for consumers). The older the home, the more likely it is to have lead-based paint.

Before 1940

 87%

1940 – 1959

 69%

1960 – 1977

 24%

LEAD-HAZARDS

A lead-hazard is when lead is present in a surface and that surface is deteriorating or breaking down. There are specific definitions for different lead-hazards.

- **Lead-Based Paint Hazard** – any lead-based paint, including lead dust and soil that would have an adverse effect on human health.
- **Dust-Lead Hazard** – surface dust in a residence containing an area or mass concentration of lead equal to or in excess of:
    - 10 µg/ft^2 (micrograms per square feet) on floors
    - 40 µg/ft^2 on porches
    - 100 µg/ft^2 on interior window sills
    - 100 µg/ft^2 on window troughs
- **Soil-Lead Hazard** – bare soil (*soil not covered with grass, sod, some other vegetation, or paving, including the sand in sandboxes*) on a residential property that contains lead in excess of:
    - 400 ppm (parts per million) in play areas (*an area of frequent soil contact by children (e.g., sandboxes, swing sets, etc.)*) and vegetable gardens.
    - 1200 ppm in the rest of the yard.

To correct lead-hazards, there are two options:

- **Abatement**
    - The permanent elimination of lead-based paint hazards. This includes:
        - Removal of building components coated with lead-based paint
        - Removal of dust-lead hazards
        - Removal of soil-lead hazards
        - Overlaying soil with durable covering such as asphalt
        - Enclosing lead-based paint hazards
        - Coating lead-based paint hazards with approved encapsulant ("a thick liquid used to cover lead-based paint")
    - This method requires:
        - Preparation
        - Waste disposal
        - Recordkeeping
        - Cleanup
        - Post abatement clearance testing
        - Monitoring (if applicable)
- **Interim Control**
    - A temporary measure to reduce exposure to lead-based paint hazards. This includes, but is not limited to:
        - Preparing and painting lead-based paint hazards
        - Treatment of friction and impact surfaces
        - Specialized cleaning
        - Landscaping over soil-lead hazards (e.g., grass or sod)
        - Monitoring (*conducted by property owner or tenant)*
        - Re-evaluation *(conducted by a certified lead professional)*

For further information, please call MDHHS Healthy Homes Section at 517-335-9390.

LEAD EXPOSURE

Exposure to lead happens during the application, removal and failure of integrity (deterioration) of lead-based paint or from soil lead hazards. Deteriorated paint includes:

- Any paint coating that is peeling, chipping, blistering, flaking, worn, chalking, cracking, or otherwise becoming separated from the painted surface.

Lead-based paint breaks down into:

- **Paint chips** – chips are paint pieces that are detached from the original painted surface. Chips include paint that is peeling, chipping, chalking or cracked.
- **Dust** – dust is created when lead paint is scraped, dry sanded, heated or burned, or when painted surfaces rub together (opening / closing windows and doors). **Dust is the most common source of lead exposure among children.**
    - Dust from lead-based paint can also contaminate the soil. This can be a source of exposure when children play on the ground, or when people bring soil into the house on their shoes.

Lead chips and dust settle on surfaces and objects people touch. Settled lead dust can re-enter the air when people:

- Vacuum or sweep
- When they or their pet walk through it
- When windows or doors are open and allow air to circulate
- When fans circulate air
- Or any other time air is moving in the home

There are **other sources** of lead exposure. Lead is found in products that you may have in your home. These household items include:

- Painted toys; painted furniture
- Toy jewelry; cosmetics (makeup)
- Plumbing products like pipes and fixtures
- Food or liquid containers made of lead crystal or lead-glazed pottery or porcelain

Lead is present for some **jobs and hobbies**. These jobs and hobbies can bring lead home with you on your clothes or hands. Jobs and hobbies include:

- Renovation and painting
- Mining
- Smelting
- Battery recycling
- Refinishing old furniture
- Auto body work
- Shooting ranges
- Hunting (shot)
- Fishing (fishing sinkers and jigs)
- Stained glass (came and solder)
- Stock cars (weights used in stock cars)
- Making pottery (dyes and glazes

To **reduce lead exposure from your job or hobby**:

- Do not put leaded items in your mouth (fishing sinkers, etc.)
- Wash hands before eating or drinking
- Avoid touching your face while working with lead materials
- Change clothes before entering home
- Wash clothes separately from other family members clothes

To **reduce lead exposure in the home**:

- Regularly wash hands, toys, and horizontal surfaces with wet methods. This method of cleaning includes:
    - Washing surfaces with soapy water
    - Using disposable cleaning materials (paper towel)
- Vacuum with a High Efficiency Particulate Air (HEPA) filtered vacuum
- Take shoes off before entering the home or living areas
- Cover lead exposed soil with fruitless plant materials

HEALTH EFFECTS OF LEAD EXPOSURE

Lead is a highly toxic metal. There is no safe level of lead exposure. Lead poisoning occurs when lead enters into the body through either: inhalation (breathing in) or ingestion (eating). Children under the age of six (6) are especially vulnerable to lead poisoning. They have a greater exposure to lead through:

- Frequent hand-to-mouth activity (mouthing objects).
- Consuming more food and drink, and breathing more air per kilogram of body weight than adults.
- Digesting 4-5 times more lead from the gut than adults.
- Nutritional deficiencies, such as an iron deficiency (which increases the bioavailability of lead – meaning it makes lead more available to enter the body).

Children under the age of six (6), their bodies and nervous system is not fully developed. One of the systems lead affects is the nervous system. Lead is a multi-system toxicant, causing:

- Brain and nervous system damage
- Decreased IQ
- Learning difficulties
- Speech, language, and behavior problems
- Hearing problems
- Slow or reduced growth
- Muscle or joint pain
- Reproductive problems (adult)
- Digestive problems
- Kidney damage
- Anemia
- High blood pressure

C-2: Lead Testing Procedures

PAINT

To test for lead in paint, an XRF instrument is used. XRF stands for "X-Ray Fluorescence."

To measure lead, this device uses low level radiation. The radiation excites atoms within painted surfaces. Excitement, or movement of atoms cause radiation to rebound back to the device. This rebound tells the device if lead is present. Lead is determined present if the level is 1 microgram per square centimeter ($\mu g/cm^2$) or more.

Appendix D-2 details the XRF device used.

DUST

Dust is collected using dust wipes. Dust wipes are disposable cloths used to collect dust. The United States Department of Housing and Urban Development (HUD) provides dust wipe best practices. HUD requests inspectors to:

- Use one dust wipe per sample area.
- Collect dust in a measured area. The measured area is 12" x 12" on a floor or a minimum of 14.4 square inches on a window or window trough.
- Open the dust wipe with a gloved hand.
- Perform dust wipe using "S" motions in sample area.
- Put the dust wipe sample into a labeled tube or container.
- Label states property location, sample location, and size of sample area.
- Send samples to trace metals laboratory.

- Report results in micrograms per square foot (µg/ ft^2).

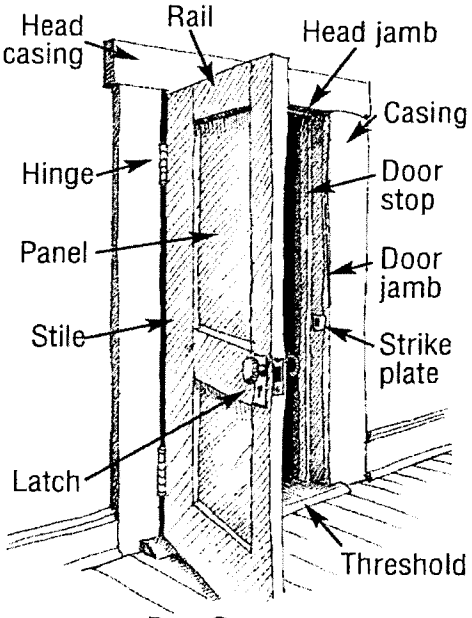
SOIL

Soil is collected using HUD best practices.

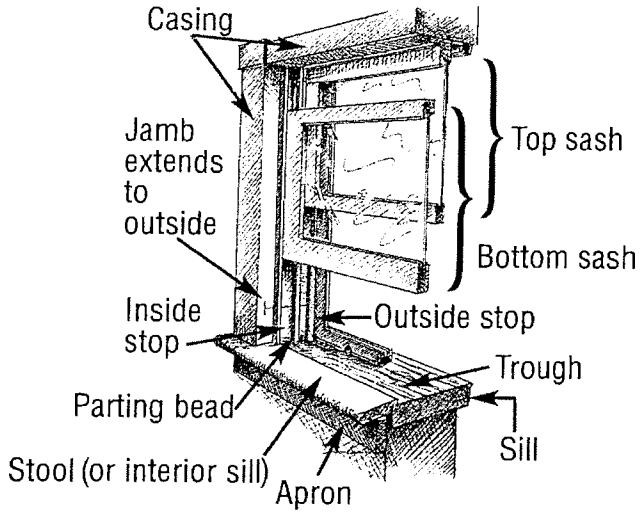
A soil sample comes from the upper ½ inch of soil. Garden soil is tested 4-6" (inches) down. All soil must come from soil on the property. Areas may include sandboxes, child play areas, and the roof drip line. A trace metals laboratory analyzes the soil for lead. Soil sample results are reported in parts per million (ppm).

HOUSING COMPONENT IDENTIFICATION

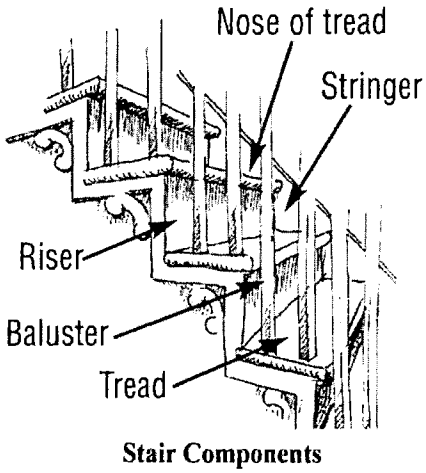
Please use the photos/diagrams below as a guide to help identify housing components noted in this report. Diagrams adopted from Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work, U.S. Department of Housing and Urban Development, Office of Lead Hazard Control, June 1999.



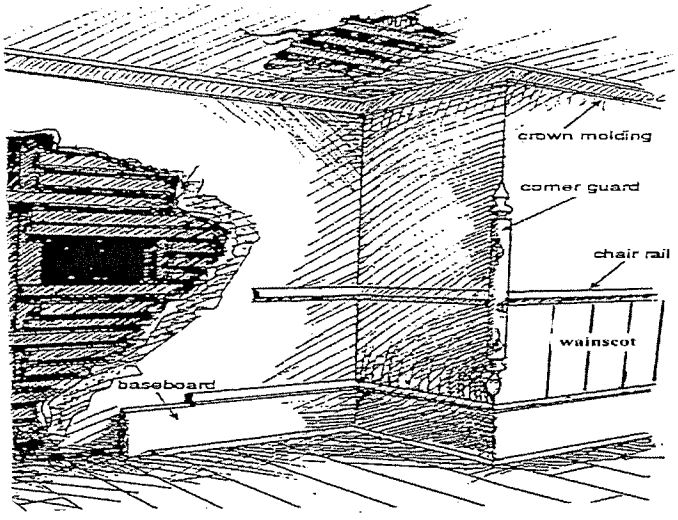
Door Components



Window Components



Stair Components



Wall Components

LEAD HAZARD CORRECTION COST ESTIMATES

Window replacement	$500 - $600
Wood window replacement	$900 - $1200
Window jamb liners	$350 - $500
Siding exterior	$400 - $600 square (square = 100 square feet)
Painting exterior	$275 - $400 square
Exterior door replacement	$750 - $900
Interior door replacement	$300 - $450
Friction/impact door	$250 - $400
E-cap baseboards	$200 - $400 per room
Paint baseboards	$200 - $300 per room
Stair system w/rubber	$400 - $800
Lead cleaning	$100 - $200 per room

C-3: Your Responsibilities

RE-EVALUATION & MONITORING SCHEDULE

Monitor Potential Lead Hazards Two Ways After Abatement/Interim Controls Completed:

Visual Survey: Perform one month and six months after lead hazard work. Perform once each year if no problems found. **Visual survey is completed by homeowner**.

Visual survey includes:

- Looking at painted surfaces known to have lead and see if paint is in good repair.
- Looking at areas lead hazards fixed to see if in good repair.
- Finding problems with the building that could cause new lead hazards.

Re-Evaluate: Every two years **a certified risk assessor** re-evaluates the building.

This includes:

- Measuring dust for lead.
- Measuring soil for lead.
- Assessing potential lead-based paint hazards.

FUTURE OWNERS OF THIS PROPERTY

A summary of this report must be shared with future tenants or owners of a pre-1978 property. Federal law (24 CFR part 35 and 40 CFR part 745) requires this report be shared before they become obligated under a lease or sales contract.

Landlords (lessors) and sellers are required to:

- Distribute an educational pamphlet. This pamphlet is approved from the U.S. Environmental Protection Agency (EPA). The document is: *"Protect Your Family from Lead in Your Home."*
- Include standard warning language in lease or sale contracts. This is to ensure parents have information they need to protect their children from lead hazards.

Contact 800-424-LEAD (5323) for information about your obligations under federal regulations.

NOTICE TO LANDLORDS

Landlord Penalty Law

If a child with an elevated blood lead level is identified in your rental unit you are responsible for ensuring that lead hazards identified in the elevated blood lead level report have been properly addressed. The following must be followed to avoid receiving penalties assessed through the Michigan Lead Abatement Act.

- If you conduct the work on your rental unit you must be certified through the EPA RRP Program or certified through the Michigan Lead Abatement Program. Depending on the method used to correct the hazard, you must follow applicable laws to ensure appropriate work practices are followed.
- Hire a lead abatement contractor, please see the certified list, located at www.michigan.gov/leadsafe.
- Check eligibility for work through the Lead Safe Home Program, please see webpage for details.

Any questions regarding compliance with the Landlord Penalty Act please email HHSInfo@michigan.gov or call 517-335-9390.

APPENDIX D – ALL XRF RESULTS & DEVICE USED

D-1: Results

ALL XRF RESULTS

TABLE 8: ALL XRF RESULTS

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
1	Calibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	1	Positive
2	Calibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	1	Positive
3	Calibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	1	Positive
4	Calibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	1	Negative
5	Calibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	1	Negative
6	Calibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	1	Negative
7	Single Family	2nd Floor	Bedroom 3	1	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0.6	1	Negative
8	Single Family	2nd Floor	Bedroom 3	1	A	Wall	Wall	Plaster	Pink	Intact	None	No	No	No	0.1	1	Negative
9	Single Family	2nd Floor	Bedroom 3	1	B	Wall	Wall	Plaster	Pink	Intact	None	No	No	No	0.2	1	Negative
10	Single Family	2nd Floor	Bedroom 3	1	C	Wall	Wall	Plaster	Pink	Intact	None	No	No	No	0	1	Negative
11	Single Family	2nd Floor	Bedroom 3	1	D	Wall	Wall	Plaster	Pink	Intact	None	No	No	No	0.1	1	Negative
12	Single Family	2nd Floor	Bedroom 3	1	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	2.7	1	Positive
13	Single Family	2nd Floor	Bedroom 3	1	D	Floor	Floor	Wood	Varnish	Intact	None	No	No	No	-0.1	1	Negative
14	Single Family	2nd Floor	Bedroom 3	1	D	Window	Casing	Wood	White	Intact	None	No	No	No	3.9	1	Positive
15	Single Family	2nd Floor	Bedroom 3	1	D	Window	Sash	Wood	White	Intact	None	No	No	No	7.5	1	Positive
16	Single Family	2nd Floor	Bedroom 3	1	A	Window	Sill	Wood	White	Deteriorated	Substrate	No	No	No	4.8	1	Positive
17	Single Family	2nd Floor	Bedroom 3	1	A	Window	Jamb	Wood	White	Intact	None	No	No	No	1.4	1	Positive
18	Single Family	2nd Floor	Bedroom 3	1	A	Door	Casing	Wood	White	Intact	None	No	No	No	4.1	1	Positive
19	Single Family	2nd Floor	Bedroom 3	1	A	Door	Panel	Wood	White	Intact	None	No	No	No	7.8	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
20	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Ceiling	Plaster	White	Intact	None	No	No	No	0.4	1	Negative
21	Single Family	2nd Floor	Bedroom 3	1	A	Closet	A Wall	Plaster	White	Intact	None	No	No	No	0.5	1	Negative
22	Single Family	2nd Floor	Bedroom 3	1	A	Closet	B Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
23	Single Family	2nd Floor	Bedroom 3	1	A	Closet	C Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
24	Single Family	2nd Floor	Bedroom 3	1	A	Closet	D Wall	Plaster	White	Intact	None	No	No	No	0.6	1	Negative
25	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Shelf	Wood	White	Intact	None	No	No	No	2.8	1	Positive
26	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Rail	Wood	White	Intact	None	No	No	No	3.1	1	Positive
27	Single Family	2nd Floor	Bedroom 3	1	A	Closet	Chute	Wood	White	Intact	None	No	No	No	6.2	1	Positive
28	Single Family	2nd Floor	Bedroom 3	1	C	Door	Jamb	Wood	White	Intact	None	No	No	No	3.3	1	Positive
29	Single Family	2nd Floor	Bedroom 3	1	C	Door	Casing	Wood	White	Deteriorated	Substrate	No	No	No	4.1	1	Positive
30	Single Family	2nd Floor	Bedroom 3	1	C	Door	Panel	Wood	White	Deteriorated	Substrate	No	No	No	3.2	1	Positive
31	Single Family	1st Floor	Entry Hall	2	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	1	1	Positive
32	Single Family	1st Floor	Entry Hall	2	A	Wall	Wall	Plaster	Tan	Intact	None	No	No	No	0.2	1	Negative
33	Single Family	1st Floor	Entry Hall	2	B	Wall	Wall	Plaster	White	Intact	None	No	No	No	-0.1	1	Negative
34	Single Family	1st Floor	Entry Hall	2	C	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.4	1	Negative
35	Single Family	1st Floor	Entry Hall	2	D	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.4	1	Negative
36	Single Family	1st Floor	Entry Hall	2	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	3.6	1	Positive
37	Single Family	1st Floor	Entry Hall	2	D	Door1	Casing	Wood	White	Intact	None	No	No	No	0	1	Negative
38	Single Family	1st Floor	Entry Hall	2	D	Door1	Stop	Wood	White	Intact	None	No	No	No	-0.1	1	Negative
39	Single Family	1st Floor	Entry Hall	2	D	Door2	Casing	Wood	White	Intact	None	No	No	No	3.7	1	Positive
40	Single Family	1st Floor	Entry Hall	2	A	Door	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
41	Single Family	1st Floor	Entry Hall	2	A	Door	Panel	Wood	White	Intact	None	No	No	No	6.6	1	Positive
42	Single Family	1st Floor	Entry Hall	2	A	Door1	Casing	Wood	White	Intact	None	No	No	No	3.2	1	Positive
43	Single Family	1st Floor	Entry Hall	2	B	Door1	Jamb	Wood	White	Intact	None	No	No	No	4.6	1	Positive
44	Single Family	1st Floor	Entry Hall	2	B	Door2	Jamb	Wood	White	Intact	None	No	No	No	0.6	1	Negative

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
45	Single Family	1st Floor	Entry Hall	2	B	Door2	Casing	Wood	White	Intact	None	No	No	No	4	1	Positive
46	Single Family	1st Floor	Entry Hall	2	B	Door3	Casing	Wood	White	Intact	None	No	No	No	3.5	1	Positive
47	Single Family	1st Floor	Entry Hall	2	B	Door3	Jamb	Wood	White	Intact	None	No	No	No	3.4	1	Positive
48	Single Family	1st Floor	Entry Hall	2	B	Closet	Ceiling	Plaster	White	Intact	None	No	No	No	6.9	1	Positive
49	Single Family	1st Floor	Entry Hall	2	B	Closet	A Wall	Plaster	White	Intact	None	No	No	No	0.5	1	Negative
50	Single Family	1st Floor	Entry Hall	2	B	Closet	B Wall	Plaster	White	Intact	None	No	No	No	0.5	1	Negative
51	Single Family	1st Floor	Entry Hall	2	B	Closet	Rail	Wood	White	Intact	None	No	No	No	2.8	1	Positive
52	Single Family	1st Floor	Entry Hall	2	B	Closet	Shelf	Wood	White	Intact	None	No	No	No	1.2	1	Positive
53	Single Family	1st Floor	Bathroom1	3	N/A	Ceiling	Ceiling	Plaster	White	Deteriorated	Substrate	No	No	No	0.8	1	Negative
54	Single Family	1st Floor	Bathroom1	3	A	Wall	Wall	Plaster	White	Deteriorated	Substrate	No	No	No	0.7	1	Negative
55	Single Family	1st Floor	Bathroom1	3	B	Wall	Wall	Plaster	White	Deteriorated	Substrate	No	No	No	0.8	1	Negative
56	Single Family	1st Floor	Bathroom1	3	C	Wall	Wall	Plaster	White	Deteriorated	Substrate	No	No	No	0.7	1	Negative
57	Single Family	1st Floor	Bathroom1	3	A	Window	Casing	Wood	White	Intact	None	No	No	No	3.5	1	Positive
58	Single Family	1st Floor	Bathroom1	3	A	Window	Sash	Wood	White	Intact	None	No	No	No	10.8	1	Positive
59	Single Family	1st Floor	Bathroom1	3	C	Door	Casing	Wood	White	Intact	None	No	No	No	7.2	1	Positive
60	Single Family	1st Floor	Bathroom1	3	C	Door	Stop	Wood	White	Intact	None	No	No	No	5.9	1	Positive
61	Single Family	1st Floor	Kitchen	4	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0.8	1	Negative
62	Single Family	1st Floor	Kitchen	4	A	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	1	1	Positive
63	Single Family	1st Floor	Kitchen	4	B	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	0	1	Negative
64	Single Family	1st Floor	Kitchen	4	C	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	0.7	1	Negative
65	Single Family	1st Floor	Kitchen	4	D	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	1	1	Positive
66	Single Family	1st Floor	Kitchen	4	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	4.5	1	Positive
67	Single Family	1st Floor	Kitchen	4	D	Door	Casing	Wood	White	Intact	None	No	No	No	0.2	1	Negative
68	Single Family	1st Floor	Kitchen	4	D	Door	Jamb	Wood	White	Intact	None	No	No	No	4.3	1	Positive
69	Single Family	1st Floor	Kitchen	4	A	Cabinet	Door	Wood	White	Intact	None	No	No	No	0.1	1	Negative

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
70	Single Family	1st Floor	Kitchen	4	A	Window	Casing	Wood	White	Intact	None	No	No	No	4.6	1	Positive
71	Single Family	1st Floor	Kitchen	4	A	Window	Sill	Wood	White	Intact	None	No	No	No	3.3	1	Positive
72	Single Family	1st Floor	Kitchen	4	D	Cabinet	Door	Wood	White	Intact	None	No	No	No	0	1	Negative
73	Single Family	1st Floor	Kitchen	4	D	Cabinet	Stile	Wood	White	Intact	None	No	No	No	9.1	1	Positive
74	Single Family	1st Floor	Kitchen	4	D	Cabinet	Drawer	Wood	White	Intact	None	No	No	No	-0.1	1	Negative
75	Single Family	1st Floor	Living Room	5	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
76	Single Family	1st Floor	Living Room	5	A	Wall	Wall	Plaster	Red	Intact	None	No	No	No	0.3	1	Negative
77	Single Family	1st Floor	Living Room	5	B	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
78	Single Family	1st Floor	Living Room	5	C	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.5	1	Negative
79	Single Family	1st Floor	Living Room	5	D	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.5	1	Negative
80	Single Family	1st Floor	Living Room	5	C	Door	Casing	Plaster	White	Intact	None	No	No	No	7.7	1	Positive
81	Single Family	1st Floor	Living Room	5	C	Door	Stile	Plaster	White	Intact	None	No	No	No	5	1	Positive
82	Single Family	1st Floor	Living Room	5	C	Fireplace	Mantle	Wood	White	Intact	None	No	No	No	10.1	1	Positive
83	Single Family	1st Floor	Living Room	5	A	Door	Casing	Wood	White	Intact	None	No	No	No	4.9	1	Positive
84	Single Family	1st Floor	Living Room	5	C	Door	Casing	Wood	White	Intact	None	No	No	No	0	1	Negative
85	Single Family	1st Floor	Living Room	5	C	Door	Stop	Wood	White	Intact	None	No	No	No	0.1	1	Negative
86	Single Family	1st Floor	Dining Rm	6	B	Window2	Stop	Wood	White	Intact	None	No	No	No	5.6	1	Positive
87	Single Family	1st Floor	Dining Rm	6	B	Window2	Casing	Wood	White	Intact	None	No	No	No	7.6	1	Positive
88	Single Family	1st Floor	Dining Rm	6	B	Window1	Casing	Wood	White	Intact	None	No	No	No	5.2	1	Positive
89	Single Family	1st Floor	Dining Rm	6	B	Window1	Sash	Wood	White	Intact	None	No	No	No	8.5	1	Positive
90	Single Family	1st Floor	Dining Rm	6	A	Wall	Vent	Metal	White	Intact	None	No	No	No	0.2	1	Negative
91	Single Family	1st Floor	Dining Rm	6	N/A	Floor	Floor	Wood	Varnish	Intact	None	No	No	No	0	1	Negative
92	Single Family	1st Floor	Bedroom1	7	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0.1	1	Negative
93	Single Family	1st Floor	Bedroom1	7	A	Wall	Wall	Plaster	Teal	Intact	None	No	No	No	0.1	1	Negative
94	Single Family	1st Floor	Bedroom1	7	B	Wall	Wall	Plaster	Teal	Intact	None	No	No	No	0.1	1	Negative

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
95	Single Family	1st Floor	Bedroom1	7	C	Wall	Wall	Plaster	Teal	Intact	None	No	No	No	0.2	1	Negative
96	Single Family	1st Floor	Bedroom1	7	D	Wall	Wall	Plaster	Teal	Intact	None	No	No	No	0	1	Negative
97	Single Family	1st Floor	Bedroom1	7	C	Window	Casing	Wood	White	Intact	None	No	No	No	0	1	Negative
98	Single Family	1st Floor	Bedroom1	7	C	Window	Sill	Wood	White	Intact	None	No	No	No	-0.1	1	Negative
99	Single Family	1st Floor	Bedroom1	7	D	Window	Sill	Wood	White	Intact	None	No	No	No	0	1	Negative
100	Single Family	1st Floor	Bedroom1	7	B	Door	Casing	Wood	White	Intact	None	No	No	No	0	1	Negative
101	Single Family	1st Floor	Bedroom1	7	B	Door	Panel	Wood	Varnish	Intact	None	No	No	No	0	1	Negative
102	Single Family	1st Floor	Bedroom1	7	D	Door	Casing	Wood	Varnish	Intact	None	No	No	No	-0.1	1	Negative
103	Single Family	1st Floor	Bedroom1	7	A	Door1	Casing	Wood	White	Intact	None	No	No	No	0	1	Negative
104	Single Family	1st Floor	Bedroom1	7	A	Door2	Casing	Wood	White	Intact	None	No	No	No	-0.1	1	Negative
105	Single Family	1st Floor	Bathroom2	8	N/A	Ceiling	Ceiling	Plaster	Gray	Intact	None	No	No	No	0.2	1	Negative
106	Single Family	1st Floor	Bathroom2	8	A	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	0.2	1	Negative
107	Single Family	1st Floor	Bathroom2	8	B	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	0.2	1	Negative
108	Single Family	1st Floor	Bathroom2	8	C	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	0.1	1	Negative
109	Single Family	1st Floor	Bathroom2	8	D	Wall	Wall	Plaster	Gray	Intact	None	No	No	No	0.3	1	Negative
110	Single Family	1st Floor	Bathroom2	8	B	Door	Casing	Wood	Beige	Intact	None	No	No	No	-0.1	1	Negative
111	Single Family	1st Floor	Bathroom2	8	B	Door	Jamb	Wood	Beige	Intact	None	No	No	No	-0.2	1	Negative
112	Single Family	1st Floor	Stairwell1	9	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	-0.1	1	Negative
113	Single Family	1st Floor	Stairwell1	9	A	Wall	Wall	Plaster	White	Intact	None	No	No	No	-0.1	1	Negative
114	Single Family	1st Floor	Stairwell1	9	B	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.2	1	Negative
115	Single Family	1st Floor	Stairwell1	9	C	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
116	Single Family	1st Floor	Stairwell1	9	D	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
117	Single Family	1st Floor	Stairwell1	9	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	6.8	1	Positive
118	Single Family	1st Floor	Stairwell1	9	C	Window	Casing	Wood	White	Intact	None	No	No	No	0	1	Negative
119	Single Family	1st Floor	Stairwell1	9	B	Stair	Baluster	Wood	White	Intact	None	No	No	No	-0.1	1	Negative

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
120	Single Family	1st Floor	Stairwell1	9	B	Stair	Tread	Wood	White	Intact	None	No	No	No	0.1	1	Negative
121	Single Family	1st Floor	Stairwell1	9	B	Stair	Riser	Wood	White	Intact	None	No	No	No	6.1	1	Positive
122	Single Family	1st Floor	Stairwell1	9	B	Stair	Stringer	Wood	White	Intact	None	No	No	No	5.7	1	Positive
123	Single Family	Second	Bedroom2	10	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
124	Single Family	Second	Bedroom2	10	A	Wall	Wall	Plaster	Orange	Intact	None	No	No	No	-0.3	1	Negative
125	Single Family	Second	Bedroom2	10	B	Wall	Wall	Plaster	Orange	Intact	None	No	No	No	0.6	1	Negative
126	Single Family	Second	Bedroom2	10	C	Wall	Wall	Plaster	Orange	Intact	None	No	No	No	0.3	1	Negative
127	Single Family	Second	Bedroom2	10	D	Wall	Wall	Plaster	Orange	Intact	None	No	No	No	0.2	1	Negative
128	Single Family	Second	Bedroom2	10	B	Wall	Baseboard	Wood	White	Intact	None	No	No	No	4.2	1	Positive
129	Single Family	Second	Bedroom2	10	B	Door1	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
130	Single Family	Second	Bedroom2	10	B	Door1	Panel	Wood	White	Intact	None	No	No	No	6.4	1	Positive
131	Single Family	Second	Bedroom2	10	B	Door2	Jamb	Wood	White	Intact	None	No	No	No	3	1	Positive
132	Single Family	Second	Bedroom2	10	B	Door2	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
133	Single Family	Second	Bedroom2	10	A	Window	Casing	Wood	White	Intact	None	No	No	No	2.8	1	Positive
134	Single Family	Second	Bedroom2	10	A	Window	Apron	Wood	White	Intact	None	No	No	No	3.1	1	Positive
135	Single Family	Second	Bedroom2	10	D	Window	Apron	Wood	White	Intact	None	No	No	No	3.1	1	Positive
136	Single Family	Second	Bedroom2	10	D	Window	Casing	Wood	White	Intact	None	No	No	No	3	1	Positive
137	Single Family	Second	Bedroom2	10	D	Wall	Shelf	Wood	White	Intact	None	No	No	No	1.7	1	Positive
138	Single Family	Second	Bedroom2	10	B	Closet	Ceiling	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
139	Single Family	Second	Bedroom2	10	B	Closet	A Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
140	Single Family	Second	Bedroom2	10	B	Closet	B Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
141	Single Family	Second	Bedroom2	10	B	Closet	C Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
142	Single Family	Second	Bedroom2	10	B	Closet	D Wall	Plaster	White	Intact	None	No	No	No	0.6	1	Negative
143	Single Family	Second	Bedroom2	10	B	Closet	Access Panel	Plaster	White	Intact	None	No	No	No	4.5	1	Positive
144	Single Family	Second	Bedroom2	10	B	Closet	Rail	Wood	White	Intact	None	No	No	No	2.9	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
145	Single Family	Second	Bedroom2	10	B	Closet	Shelf	Wood	White	Intact	None	No	No	No	3.6	1	Positive
146	Single Family	Second	Bedroom4	11	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0	1	Negative
147	Single Family	Second	Bedroom4	11	A	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.4	1	Negative
148	Single Family	Second	Bedroom4	11	B	Wall	Wall	Plaster	White	Intact	None	No	No	No	-0.4	1	Negative
149	Single Family	Second	Bedroom4	11	C	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.4	1	Negative
150	Single Family	Second	Bedroom4	11	D	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
151	Single Family	Second	Bedroom4	11	D	Wall	Baseboard	Wood	White	Intact	None	No	No	No	3.3	1	Positive
152	Single Family	Second	Bedroom4	11	D	Door	Jamb	Wood	White	Intact	None	No	No	No	3.4	1	Positive
153	Single Family	Second	Bedroom4	11	D	Door	Panel	Wood	White	Intact	None	No	No	No	0.6	1	Negative
154	Single Family	Second	Bedroom4	11	D	Window	Apron	Wood	White	Intact	None	No	No	No	2.8	1	Positive
155	Single Family	Second	Bedroom4	11	D	Window	Sill	Wood	White	Deteriorated	Substrate	No	No	No	2.6	1	Positive
156	Single Family	Second	Bedroom4	11	B	Door	Casing	Wood	White	Intact	None	No	No	No	3.8	1	Positive
157	Single Family	Second	Bedroom4	11	B	Door	Jamb	Wood	White	Deteriorated	Substrate	No	No	No	0.1	1	Negative
158	Single Family	Second	Bedroom4	11	B	Window1	Sash	Wood	White	Deteriorated	Substrate	No	No	No	9.7	1	Positive
159	Single Family	Second	Bedroom4	11	B	Window1	Casing	Wood	White	Intact	None	No	No	No	3.3	1	Positive
160	Single Family	Second	Bedroom4	11	B	Window2	Sill	Wood	White	Deteriorated	Substrate	No	No	No	2.2	1	Positive
161	Single Family	Second	Bedroom4	11	B	Window2	Sash	Wood	White	Intact	None	No	No	No	10.5	1	Positive
162	Single Family	Second	Bedroom4	11	C	Window	Sill	Wood	White	Deteriorated	Substrate	No	No	No	3.4	1	Positive
163	Single Family	Second	Bedroom4	11	C	Window	Casing	Wood	White	Intact	None	No	No	No	3.1	1	Positive
164	Single Family	Second	Bedroom4	11	C	Door	Casing	Wood	White	Deteriorated	Substrate	No	No	No	3.7	1	Positive
165	Single Family	Second	Bedroom4	11	C	Door	Jamb	Wood	White	Intact	None	No	No	No	3.6	1	Positive
166	Single Family	Second	Bedroom4	11	C	Closet	Ceiling	Plaster	White	Intact	None	No	No	No	0.5	1	Negative
167	Single Family	Second	Bedroom4	11	C	Closet	A Wall	Plaster	White	Intact	None	No	No	No	0.5	1	Negative
168	Single Family	Second	Bedroom4	11	C	Closet	B Wall	Plaster	White	Intact	None	No	No	No	0.4	1	Negative
169	Single Family	Second	Bedroom4	11	C	Closet	C Wall	Plaster	White	Intact	None	No	No	No	0.2	1	Negative

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
170	Single Family	Second	Bedroom4	11	C	Closet	D Wall	Plaster	White	Intact	None	No	No	No	0.4	1	Negative
171	Single Family	Second	Bedroom4	11	C	Closet	Shelf	Wood	White	Intact	None	No	No	No	0.2	1	Negative
172	Single Family	Second	Bathroom3	12	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0.9	1	Negative
173	Single Family	Second	Bathroom3	12	A	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.7	1	Negative
174	Single Family	Second	Bathroom3	12	B	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.7	1	Negative
175	Single Family	Second	Bathroom3	12	C	Wall	Wall	Plaster	White	Intact	None	No	No	No	1	1	Positive
176	Single Family	Second	Bathroom3	12	D	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.7	1	Negative
177	Single Family	Second	Bathroom3	12	A	Door	Casing	Wood	White	Intact	None	No	No	No	3.1	1	Positive
178	Single Family	Second	Bathroom3	12	A	Door	Jamb	Wood	White	Intact	None	No	No	No	0.1	1	Negative
179	Single Family	Second	Bathroom3	12	D	Door	Casing	Wood	White	Intact	None	No	No	No	6.8	1	Positive
180	Single Family	Second	Bathroom3	12	D	Door	Panel	Wood	White	Intact	None	No	No	No	5.5	1	Positive
181	Single Family	Second	Bathroom3	12	C	Window	Casing	Wood	White	Intact	None	No	No	No	3.9	1	Positive
182	Single Family	Second	Bathroom3	12	C	Window	Sill	Wood	White	Intact	None	No	No	No	3.3	1	Positive
183	Single Family	Second	Bathroom3	12	D	Closet	Ceiling	Wood	White	Intact	None	No	No	No	4.5	1	Positive
184	Single Family	Second	Bathroom3	12	D	Closet	A Wall	Wood	White	Intact	None	No	No	No	4.5	1	Positive
185	Single Family	Second	Bathroom3	12	D	Closet	C Wall	Wood	White	Intact	None	No	No	No	5.1	1	Positive
186	Single Family	Second	Bathroom3	12	D	Closet	D Wall	Wood	White	Intact	None	No	No	No	0.4	1	Negative
187	Single Family	Second	Bathroom3	12	D	Closet	Rail	Wood	White	Intact	None	No	No	No	1.3	1	Positive
188	Single Family	Second	Bathroom3	12	D	Closet	Drawer	Wood	White	Intact	None	No	No	No	4.8	1	Positive
189	Single Family	Second	Hall	13	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0.8	1	Negative
190	Single Family	Second	Hall	13	A	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
191	Single Family	Second	Hall	13	B	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.5	1	Negative
192	Single Family	Second	Hall	13	C	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.4	1	Negative
193	Single Family	Second	Hall	13	D	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.5	1	Negative
194	Single Family	Second	Hall	13	A	Door	Casing	Wood	White	Intact	None	No	No	No	8.2	1	Positive

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
195	Single Family	Second	Hall	13	A	Door	Jamb	Wood	White	Intact	None	No	No	No	7	1	Positive
196	Single Family	Second	Hall	13	B	Door	Jamb	Wood	White	Intact	None	No	No	No	4.2	1	Positive
197	Single Family	Second	Hall	13	B	Door	Panel	Wood	White	Intact	None	No	No	No	3.7	1	Positive
198	Single Family	Second	Hall	13	C	Door1	Panel	Wood	White	Intact	None	No	No	No	2.8	1	Positive
199	Single Family	Second	Hall	13	C	Door1	Stop	Wood	White	Intact	None	No	No	No	3.8	1	Positive
200	Single Family	Second	Hall	13	C	Door2	Casing	Wood	White	Intact	None	No	No	No	4.5	1	Positive
201	Single Family	Second	Hall	13	C	Door2	Rail	Wood	White	Intact	None	No	No	No	3.2	1	Positive
202	Single Family	First	Exterior	14	D	Door	Jamb	Wood	White	Intact	None	No	No	No	25.8	1	Positive
203	Single Family	First	Exterior	14	D	Door	Casing	Wood	White	Deteriorated	Moisture	No	No	No	29	1	Positive
204	Single Family	First	Exterior	14	A	Wall	Address Plate	Wood	White	Deteriorated	Moisture	No	No	No	16.8	1	Positive
205	Single Family	First	Exterior	14	A	Window1	Sash	Wood	White	Deteriorated	Moisture	No	No	No	8.9	1	Positive
206	Single Family	First	Exterior	14	A	Window1	Stop	Wood	White	Deteriorated	Moisture	No	No	No	8.3	1	Positive
207	Single Family	First	Exterior	14	A	Window2	Stop	Wood	White	Deteriorated	Moisture	No	No	No	7.3	1	Positive
208	Single Family	First	Exterior	14	A	Window2	Sash	Wood	White	Deteriorated	Moisture	No	No	No	8	1	Positive
209	Single Family	First	Exterior	14	A	Window3	Stop	Wood	White	Deteriorated	Moisture	No	No	No	8.6	1	Positive
210	Single Family	First	Exterior	14	A	Window3	Sash	Wood	White	Deteriorated	Moisture	No	No	No	8.4	1	Positive
211	Single Family	First	Stairwell2	15	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0.1	1	Negative
212	Single Family	First	Stairwell2	15	B	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.2	1	Negative
213	Single Family	First	Stairwell2	15	C	Wall	Wall	Plaster	White	Intact	None	No	No	No	0.3	1	Negative
214	Single Family	First	Stairwell2	15	D	Wall	Wall	Plaster	White	Intact	None	No	No	No	-0.2	1	Negative
215	Single Family	First	Stairwell2	15	C	Stair	Riser	Plaster	White	Intact	None	No	No	No	0	1	Negative
216	Single Family	First	Stairwell2	15	C	Stair	Riser	Wood	Varnish	Intact	None	No	No	No	0	1	Negative
217	Single Family	Basement	Basement	16	N/A	Ceiling	Ceiling	Plaster	White	Intact	None	No	No	No	0.2	1	Negative
218	Single Family	Basement	Basement	16	A	Wall	Wall	Concrete	White	Deteriorated	None	No	No	No	0.1	1	Negative
219	Single Family	Basement	Basement	16	B	Wall	Wall	Concrete	White	Deteriorated	None	No	No	No	0.3	1	Negative

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
220	Single Family	Basement	Basement	16	C	Wall	Wall	Concrete	White	Deteriorated	None	No	No	No	0	1	Negative
221	Single Family	Basement	Basement	16	D	Wall	Wall	Concrete	White	Deteriorated	None	No	No	No	-0.2	1	Negative
222	Single Family	Basement	Basement	16	D	Door	Casing	Wood	Varnish	Intact	None	No	No	No	-0.2	1	Negative
223	Single Family	Basement	Basement	16	D	Door	Stile	Wood	Varnish	Intact	None	No	No	No	0	1	Negative
224	Single Family	Basement	Basement	16	C	Door	Stile	Wood	Varnish	Intact	None	No	No	No	-0.2	1	Negative
225	Single Family	Basement	Basement	16	C	Door	Rail	Wood	Varnish	Intact	None	No	No	No	-0.1	1	Negative
226	Single Family	Basement	Basement	16	B	Door	Rail	Wood	Varnish	Intact	None	No	No	No	0.1	1	Negative
227	Single Family	Basement	Basement	16	N/A	Floor	Floor	Concrete	Red	Deteriorated	Moisture	No	No	No	0.1	1	Negative
228	Single Family	Basement	Laundry	17	N/A	Ceiling	Ceiling	Concrete	Red	Deteriorated	Moisture	No	No	No	0	1	Negative
229	Single Family	Basement	Laundry	17	A	Wall	Wall	Concrete	White	Deteriorated	Moisture	No	No	No	0.1	1	Negative
230	Single Family	Basement	Laundry	17	C	Wall	Wall	Concrete	White	Intact	Moisture	No	No	No	0.2	1	Negative
231	Single Family	Basement	Laundry	17	D	Wall	Wall	Concrete	White	Intact	Moisture	No	No	No	-0.2	1	Negative
232	Single Family	Basement	Laundry	17	C	Closet	Ceiling	Concrete	White	Intact	Moisture	No	No	No	0	1	Negative
233	Single Family	Basement	Laundry	17	C	Closet	A Wall	Concrete	White	Intact	Moisture	No	No	No	0.3	1	Negative
234	Single Family	Basement	Laundry	17	C	Closet	B Wall	Concrete	White	Intact	Moisture	No	No	No	0.2	1	Negative
235	Single Family	Basement	Laundry	17	C	Closet	C Wall	Concrete	White	Intact	Moisture	No	No	No	0.1	1	Negative
236	Single Family	Basement	Laundry	17	C	Closet	D Wall	Concrete	White	Intact	Moisture	No	No	No	0	1	Negative
237	Single Family	Basement	Laundry	17	A	Closet	D Wall	Concrete	White	Intact	Moisture	No	No	No	-0.2	1	Negative
238	Single Family	Basement	Laundry	17	A	Closet	C Wall	Concrete	White	Intact	Moisture	No	No	No	0.2	1	Negative
239	Single Family	Basement	Laundry	17	A	Closet	B Wall	Concrete	White	Intact	Moisture	No	No	No	0.2	1	Negative
240	Single Family	Basement	Laundry	17	A	Closet	A Wall	Concrete	White	Intact	Moisture	No	No	No	0.1	1	Negative
241	Single Family	Basement	Laundry	17	A	Closet	Chute	Wood	White	Intact	Moisture	No	No	No	0	1	Negative
242	Single Family	Basement	Tool Room	18	N/A	Ceiling	Ceiling	Concrete	White	Deteriorated	Moisture	No	No	No	0.1	1	Negative
243	Single Family	Basement	Tool Room	18	A	Wall	Wall	Concrete	White	Deteriorated	Moisture	No	No	No	0.2	1	Negative
244	Single Family	Basement	Tool Room	18	B	Wall	Wall	Concrete	White	Deteriorated	Moisture	No	No	No	0.2	1	Negative

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
245	Single Family	Basement	Tool Room	18	C	Wall	Wall	Concrete	White	Deteriorated	Moisture	No	No	No	0	1	Negative
246	Single Family	Basement	Tool Room	18	D	Wall	Wall	Concrete	White	Deteriorated	Moisture	No	No	No	0.2	1	Negative
247	Single Family	First	Garage	19	A	Door1	Casing	Wood	White	Deteriorated	Moisture	No	No	No	26.1	1	Positive
248	Single Family	First	Garage	19	A	Door1	Jamb	Wood	White	Deteriorated	Moisture	No	No	No	29.8	1	Positive
249	Single Family	First	Garage	19	A	Door2	Jamb	Wood	White	Deteriorated	Moisture	No	No	No	33	1	Positive
250	Single Family	First	Garage	19	A	Door2	Casing	Wood	White	Deteriorated	Moisture	No	No	No	23.8	1	Positive
251	Single Family	First	Garage	19	A	Door2	Lintel	Metal	White	Deteriorated	Moisture	No	No	No	27	1	Positive
252	Single Family	First	Garage	19	A	Door1	Lintel	Metal	White	Deteriorated	Moisture	No	No	No	23.9	1	Positive
253	Single Family	First	Garage	19	A	Gutter	Downspout	Metal	White	Deteriorated	Moisture	No	No	No	0.7	1	Negative
254	Single Family	First	Exterior	14	B	Porch	Floor	Concrete	White	Deteriorated	Moisture	No	No	No	-0.3	1	Negative
255	Single Family	First	Exterior	14	B	Window1	Mullion	Wood	White	Deteriorated	Moisture	No	No	No	0	1	Negative
256	Single Family	First	Exterior	14	B	Window 2	Storm Sash	Wood	White	Deteriorated	Moisture	No	No	No	2.8	1	Positive
257	Single Family	First	Exterior	14	B	Window 3	Sorm Sash	Wood	White	Deteriorated	Moisture	No	No	No	6.3	1	Positive
258	Single Family	First	Exterior	14	B	Window 4	Storm Sash	Wood	White	Deteriorated	Moisture	No	No	No	2.1	1	Positive
259	Single Family	First	Exterior	14	A	Window1	Shutter	Wood	White	Deteriorated	Moisture	No	No	No	1.3	1	Positive
260	Single Family	First	Exterior	14	A	Window 2	Shutter	Wood	White	Deteriorated	Moisture	No	No	No	2	1	Positive
261	Single Family	First	Exterior	14	A	Wall	Wall 1	Wood	White	Deteriorated	Moisture	No	No	No	0.3	1	Negative
262	Single Family	First	Exterior	14	A	Wall	Wall 2	Wood	White	Deteriorated	Moisture	No	No	No	-0.4	1	Negative
263	Single Family	First	Exterior	14	D	Wall	Downspout	Metal	White	Deteriorated	Moisture	No	No	No	0.1	1	Negative
264	Single Family	First	Exterior	14	C	Roof	Support	Metal	White	Deteriorated	Moisture	No	No	No	-0.1	1	Negative
265	Caliibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.1	1	Positive
266	Caliibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.8	1	Negative
267	Caliibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.9	1	Negative
268	Caliibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.1	1	Negative
269	Caliibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.1	1	Negative

READING #	BUILDING	LEVEL/FLOOR	ROOM LOCATION	ROOM #	WALL	COMPONENT	SUB COMPONENT	SUBSTRATE	COLOR	CONDITION	CONDITION CAUSE	FRICTION	IMPACT	TEETH MARKS	XRF READING	XRF LIMIT	RESULT
270	Calibration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.2	1	Negative

** HUD reporting limits for positive XRF results are ≥ 1.0 mg/cm² for painted or glazed surfoces.*

D-2: XRF Device Used

HUERESIS PCS

HEURESIS PCS December 2015

Performance Characteristic Sheet

EFFECTIVE DATE: December 1, 2015

MANUFACTURER AND MODEL:

Make: ***Heuresis***

Models: ***Model Pb200i***

Source: ***^{57}Co, 5 mCi (nominal – new source)***

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Action Level mode

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm^2 (inclusive)

SUBSTRATE CORRECTION:

Not applicable

INCONCLUSIVE RANGE OR THRESHOLD:

ACTION LEVEL MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing ("HUD Guidelines"). Performance parameters shown on this sheet are calculated using test results on building components in the HUD archive. Testing was conducted on 146 test samples in November 2015, with two separate instruments running software version 2.1-2 in Action Level test mode. The actual source strength of each instrument on the day of testing was approximately 2.0 mCi; source ages were approximately one year.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If the average (rounded to 1 decimal place) of three readings is outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instrument into control before XRF testing proceeds.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm^2 for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.0 mg/cm^2 at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

Using the same XRF instrument, take three readings on a bare substrate area covered with the NIST SRM paint film nearest 1 mg/cm^2. Repeat this procedure by taking three more readings on a second bare substrate area of the same substrate covered with the NIST SRM.

Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.

For each substrate type (the 1.02 mg/cm^2 NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):

Correction value = (1st + 2nd + 3rd + 4th + 5th + 6th *Reading*)/6 - 1.02 mg/cm^2

Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and the retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF readings.

Compute the average of all ten re-test XRF readings.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the

difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

In the Action Level paint test mode, the instrument takes the longest time to complete readings close to the Federal standard of 1.0 mg/cm^2. The table below shows the mean and standard deviation of actual reading times by reading level for paint samples during the November 2015 archive testing. The tested instruments reported readings to one decimal place. No significant differences in reading times by substrate were observed. These times apply only to instruments with the same source strength as those tested (2.0 mCi). Instruments with stronger sources will have shorter reading times and those with weaker sources, longer reading times, than those in the table.

Mean and Standard Deviation of Reading Times in Action Level Mode by Reading Level		
Reading (mg/cm^2)	Mean Reading Time (seconds)	Standard Deviation (seconds)
< 0.7	3.48	0.47
0.7	7.29	1.92
0.8	13.95	1.78
0.9 – 1.2	15.25	0.66
1.3 – 1.4	6.08	2.50
≥ 1.5	3.32	0.05

CLASSIFICATION OF RESULTS:

XRF results are classified as positive if they are greater than or equal to the stated threshold for the instrument (1.0 mg/cm^2), and *negative* if they are *less than* the threshold.

Although the XRF instrument is not designed to analyze non-painted surfaces, according to the State of California (Department of Toxic Substances Control, Feb 2012), it can be an effective screening tool to determine lead content in metal.

DOCUMENTATION:

A report titled *Methodology for XRF Performance Characteristic Sheets* (EPA 747-R-95-008) provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. The report may be downloaded at http://www.epa.gov/lead/methodology-xrf-performance-characteristic-sheets-epa-747-r-95-008-september-1997.

This XRF Performance Characteristic Sheet (PCS) was developed by QuanTech, Inc., under a contract with the XRF manufacturer.

Reference

Department of Toxic Substances Control. (Feb 2012). *Testing and Evaluation of Lead Content in Plumbing Products, Materials and Components.* State of California. Retrieved from http://www.dtsc.ca.gov/PollutionPrevention/upload/lead-in-plumbing-testing-protocol.pdf

APPENDIX E – LABORATORIES USED & ORIGINAL LABORATORY ANALYSIS REPORTS

E-1: Laboratories Used

Trace Metals Laboratory used to test dust and soil samples:

Accurate Analytical Testing LLC
Trace Metals Laboratory
30105 Beverly Road
Romulus, MI 48174
P: 571-335-9490

Drinking Water Laboratory used to test water samples:

Accurate Analytical Testing LLC
Drinking Water Laboratory
30105 Beverly Road
Romulus, MI 48174
P: 571-335-9490

E-2: Original Laboratory Analysis Reports

All of the original laboratory analysis reports for any samples that were sent for testing are included in the following pages.

ACCURATE ANALYTICAL TESTING LLC

30105 Beverly Road
Romulus, MI 48174
Ph: 734-629-8161; Fax: 734-629-8431

Certificate of Analysis: Lead In Dust Wipe by EPA Method 7000B/3050B*

Client : Green Solutions Environmental Services
17800 Woodward Suite 200
Detroit, MI 48203
Attn : Denise Griffith **Email :** cdgriffith@gsgroupmi.com
Phone : 313 279-0449 **Fax :**

Client Project : 15327 WARWICK

Project Location : 15327 WARWICK

AAT Project : 553649
Sampling Date : 02/18/2020
Date Received : 02/19/2020
Date Analyzed : 02/20/2020
Date Reported : 2/20/2020 11:22:15AM

Lab Sample ID	Client Code	Sample Description	Length (inch)	Width (inch)	Area (Sq ft)	Results Lead µg/ft2 *
5332612	1	LR FL	12	12	1.00	<5.00
5332613	2	LR WS	2	17	0.24	51.69
5332614	3	DR FL	12	12	1.00	<5.00
5332615	4	DR WS	2	17	0.24	32.48
5332616	5	KIT FL	12	12	1.00	<5.00
5332617	6	KIT WT	2	17	0.24	32810.82
5332618	7	BATH 2 FL	12	12	1.00	5.34
5332619	8	BATH 2 WT	2	17	0.24	174.73
5332620	9	BDRM 1 FL	12	12	1.00	<5.00
5332621	10	BDRM 1 WT 2	2	17	0.24	<21.18
5332622	11	BDRM 3 FL	12	12	1.00	5.25
5332623	12	BDRM 3 WS	2	17	0.24	144.87
5332624	13	FIELD BLANK FL	12	12	1.00	<5.00

Analyst Signature

Nathan Ditty

ND = Not Detected, N/A = Not Available, RL = Reporting Limit, Analytical Reporting Limit is 5 ug/sample. For true values assume (2) significant figures. AAT internal SOP S205. The method and batch QC are acceptable unless otherwise stated. MI Lead Regulatory Limits including Pb Clearance: 10 ug/ft2 (Interior Floors), 40 ug/ft2 (Porch Floors), 100 ug/ft2 (Window Sills), 100 ug/ft2 (Window Troughs). The laboratory operates in accord with ISO 17025 guidelines and holds limited scopes of accreditation under AIHA-LAP and NY State DOH ELAP programs. These results are submitted pursuant to AAT, LLC current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. Analytical results relate to the samples as received by the lab. AAT will not assume any liability or responsibility for the manner in which the results are used or interpreted. All Quality Control requirements for the samples this report contains have been met. AAT does not blank correct reported values. Sample data apply only to items analyzed. Results are calculated with wipe dimensions supplied by client. Reproduction of this document other than in its entirety is not authorized by AAT, LLC. * = Validated modified method. Samples are stored for 15 days following report date

Accredited Laboratory Pb Lead ACCREDITED LAB ORG Lab ID #100986

AIHA LAP- Lab ID #100986, NY State DOH ELAP -Lab ID #11864, State of Ohio- Lab ID # 10042

Date Printed: 02/20/2020 AAT Project: 553649

ACCURATE ANALYTICAL TESTING LLC

30105 Beverly Road
Romulus, MI 48174
Ph: 734-629-8161; Fax: 734-629-8431

To : Green Solutions Environmental Services
17800 Woodward Suite 200
Detroit, MI 48203

Attn : Denise Griffith **Email :** cdgriffith@gsgroupmi.com
Phone : 313 279-0449

Project Location : 15327 WARWICK

AAT Project : 553649
Client Project : 15327 WARWICK
Date Reported : 2/20/2020 11:22:15AM

Sample	Client Code	Analysis Requested	Completed	Analyst
5332612	1	Dust Wipe	02/20/2020	Nathan Ditty
5332613	2	Dust Wipe	02/20/2020	Nathan Ditty
5332614	3	Dust Wipe	02/20/2020	Nathan Ditty
5332615	4	Dust Wipe	02/20/2020	Nathan Ditty
5332616	5	Dust Wipe	02/20/2020	Nathan Ditty
5332617	6	Dust Wipe	02/20/2020	Nathan Ditty
5332618	7	Dust Wipe	02/20/2020	Nathan Ditty
5332619	8	Dust Wipe	02/20/2020	Nathan Ditty
5332620	9	Dust Wipe	02/20/2020	Nathan Ditty
5332621	10	Dust Wipe	02/20/2020	Nathan Ditty
5332622	11	Dust Wipe	02/20/2020	Nathan Ditty
5332623	12	Dust Wipe	02/20/2020	Nathan Ditty
5332624	13	Dust Wipe	02/20/2020	Nathan Ditty

Reviewed By Quality Assurance Coordinator - Stephen Northcott

AIHA LAP- Lab ID #100986, NY State DOH ELAP -Lab ID #11864, State of Ohio- Lab ID # 10042

ACCURATE ANALYTICAL TESTING LLC

30105 BEVERLY RD.
ROMULUS MI 48174
(734) 699-LABS (5227)
FAX: (734) 699-8407
www.accurate-test.biz

AIHA LAP, LLC ACCREDITED LABORATORY ENVIRONMENTAL LEAD ISO/IEC 17025:2005

SUBMITTING COMPANY
Green Solutions
Environmental Services
17800 Woodward Ave., Ste 200
Detroit, MI 48203

PO #

CONTACT INFORMATION
Denise Griffith
Office: 313-279-0449
Fax: 279-0519
Cell:
Email: cdariffith@asaroupmi.com

PROJECT NUMBER	SAMPLING DATE: 2/18/2020	REQUESTED ANALYSIS	LEAD
PROJECT ADDRESS	15327 WARWICK	SINGLE WIPE DUST (X)	
SAMPLE START TIME 9:05AM	SAMPLE END TIME 9:25AM	COMPOSITE SOIL ( )	
RISK ASSESOR Donnez Hemphill		PAINT CHIP: % By Wt. ( ) mg/cm² ( )	

Request Turnaround time (please check one)
SAME DAY ( ) | 24 Hour ( )
48 Hour (X) | 72 hours ( )
If no indicated, default is 72 hours

LAB ID	CLIENT SAMPLE ID	DESCRIPTION	WS, WT, F	WIPE AREA (e.g. 12 X 12)
12	1	LR	FL	12 X 12
13	2	LR	WS	2 X 17
14	3	DR	FL	12 X 12
15	4	DR	WS	2 X 17
16	5	Kit	FL	12 X 12
17	6	Kit	WT	2 X 17
18	7	Bath 2	FL	12 X 12
19	8	Bath 2	WT	2 X 17
20	9	Bd Rm 1	FL	12 X 12
21	10	Bd Rm 1	WT (2)	2 X 17
22	11	Bd Rm 3	FL	12 X 12
23	12	Bd Rm 3	WS	2 X 17
24	13	Field Blank	FL	12 X 12
				X
				X

CLIENT COMMENTS
Risk Assessor: D. Hemphill
Samples shipped 13

SAMPLE CONDITION

SEALS INTACT	Y	N
PRESERVATIVES	Y	N
CONTAINERS LABELED	Y	N

LAB REMARKS
1724

LAB PROJECT NUMBER 553604 9

SAMPLES RELINQUISHED BY	SAMPLES RECEIVED BY	Date	TIME	
D. Hemphill			AM	PM
			AM	PM
		2-19	(AM)	PM

By submitting samples to AAT, the client agrees to AAT's terms and conditions.

HISTORIC DISTRICT COMMISSION
PROJECT REVIEW REQUEST

CITY OF DETROIT
PLANNING & DEVELOPMENT DEPARTMENT
2 WOODWARD AVENUE, ROOM 808, DETROIT, MI 48226

DATE: 1/28/21

PROPERTY INFORMATION

ADDRESS: 15327 Warwick **AKA:**

HISTORIC DISTRICT: Rosedale Park Historic District

SCOPE OF WORK: (Check ALL that apply)

- [x] Windows/ Doors
- [x] Roof/Gutters/ Chimney
- [ ] Porch/ Deck
- [ ] Landscape/Fence/ Tree/Park
- [ ] General Rehab
- [ ] New Construction
- [ ] Demolition
- [ ] Addition
- [ ] Other:

APPLICANT IDENTIFICATION

- [ ] Property Owner/ Homeowner
- [x] Contractor
- [ ] Tenant or Business Occupant
- [ ] Architect/Engineer/ Consultant

NAME: Errol Parks **COMPANY NAME:** Jonmar Construction LLC

ADDRESS: 48 Maple Street **CITY:** River Rouge **STATE:** MI **ZIP:** 48218

PHONE: **MOBILE:** [313]399-7291 **EMAIL:** info@jonmarconstruction.co

PROJECT REVIEW REQUEST CHECKLIST

Please attach the following documentation to your request:

PLEASE KEEP FILE SIZE OF ENTIRE SUBMISSION UNDER 30MB

- [ ] **Completed Building Permit Application** (highlighted portions only)
- [ ] **ePLANS Permit Number** (only applicable if you've already applied for permits through ePLANS)
- [ ] **Photographs** of ALL sides of existing building or site
- [ ] **Detailed photographs** of location of proposed work (photographs to show existing condition(s), design, color, & material)
- [ ] **Description of existing conditions** (including materials and design)
- [ ] **Description of project** (if replacing any existing material(s), include an explanation as to why replacement--rather than repair--of existing and/or construction of new is required)
- [ ] **Detailed scope of work** (formatted as bulleted list)
- [ ] **Brochure/cut sheets** for proposed replacement material(s) and/or product(s), as applicable

NOTE:
Based on the scope of work, additional documentation may be required.

See www.detroitmi.gov/hdc for scope-specific requirements.

Upon receipt of this documentation, staff will review and inform you of the next steps toward obtaining your building permit from the Buildings, Safety Engineering and Environmental Department (BSEED) to perform the work.

SUBMIT COMPLETED REQUESTS TO HDC@DETROITMI.GOV

P2 - BUILDING PERMIT APPLICATION

Date: 1/28/21

PROPERTY INFORMATION

Address: 15327 Warwick Floor: _____ Suite#: ____ Stories: _____

AKA: _____ Lot(s): _____ Subdivision: _____

Parcel ID#(s): _____ Total Acres: _____ Lot Width: _____ Lot Depth: _____

Current Legal Use of Property: _____ Proposed Use: _____

Are there any existing buildings or structures on this parcel? ☐ Yes ☐ No

PROJECT INFORMATION

Permit Type: ☐ New ■ Alteration ☐ Addition ☐ Demolition ☐ Correct Violations

☐ Foundation Only ☐ Change of Use ☐ Temporary Use ☐ Other: _____

☐ Revision to Original Permit #: _____ (Original permit has been issued and is active)

Description of Work (Describe in detail proposed work and use of property, attach work list)

Remove and install six [6] windows [colonial]. Remove and install roof sysyem.[dimensional shingles]

☐ MBC use change ☐ No MBC use change

Included Improvements (Check all applicable; these trade areas require separate permit applications)

☐ HVAC/Mechanical ☐ Electrical ☐ Plumbing ☐ Fire Sprinkler System ☐ Fire Alarm

Structure Type

☐ New Building ☐ Existing Structure ☐ Tenant Space ☐ Garage/Accessory Building

☐ Other: _____ Size of Structure to be Demolished (LxWxH) _____ cubic ft.

Construction involves changes to the floor plan? ☐ Yes ☐ No

(e.g. interior demolition or construction to new walls)

Use Group: _____ Type of Construction (per current MI Bldg Code Table 601) _____

Estimated Cost of Construction $ 18,000.00 (By Contractor) $ _____ (By Department)

Structure Use

■ Residential-Number of Units: 1 ☐ Office-Gross Floor Area _____ ☐ Industrial-Gross Floor Area _____

☐ Commercial-Gross Floor Area: _____ ☐ Institutional-Gross Floor Area _____ ☐ Other-Gross Floor Area _____

Proposed No. of Employees: _____ List materials to be stored in the building: _____

PLOT PLAN SHALL BE submitted on separate sheets and shall show all easements and measurements (must be correct and in detail). SHOW ALL streets abutting lot, indicate front of lot, show all buildings, existing and proposed distances to lot lines. (Building Permit Application Continues on Next Page)

For Building Department Use Only

Intake By: _____ Date: _____ Fees Due: _____ DngBld? ☐ No

Permit Description:

Current Legal Land Use: _____ Proposed Use: _____

Permit#: _____ Date Permit Issued: _____ Permit Cost: $ _____

Zoning District: _____ Zoning Grant(s): _____

Lots Combined? ☐ Yes ☐ No (attach zoning clearance)

Revised Cost (revised permit applications only) Old $ _____ New $ _____

Structural: _____ Date: _____ Notes: _____

Zoning: _____ Date: _____ Notes: _____

Other: _____ Date: _____ Notes: _____

Permit #:

IDENTIFICATION (All Fields Required)

Property Owner/Homeowner ☐ Property Owner/Homeowner is Permit Applicant

Name: Alunda Boykin Company Name: _____

Address: 15327 Warwick City: _____ State: ____ Zip: _____

Phone: [313]715-7104 Mobile: _____

Driver's License #: _____ Email: _____

Contractor ■ Contractor is Permit Applicant

Representative Name: Errol Parks Company Name: Jonmar Construction LLC

Address: 48 Maple Street City: River Rouge State: MI Zip: 48218

Phone: _____ Mobile:]313]399-7291 Email: info@jonmarconstruction.com

City of Detroit License #: LIC- 2011 00384

TENANT OR BUSINESS OCCUPANT

☐ Tenant is Permit Applicant

Name: _____ Phone: _____ Email: _____

ARCHITECT/ENGINEER/CONSULTANT

☐ Architect/Engineer/Consultant is Permit Applicant

Name: _____ State Registration#: _____ Expiration Date: _____

Address: _____ City: _____ State: ____ Zip: _____

Phone: _____ Mobile: _____ Email: _____

HOMEOWNER AFFIDAVIT (Only required for residential permits obtained by homeowner.)

I hereby certify that I am the legal owner and occupant of the subject property and the work described on this permit application shall be completed by me. I am familiar with the applicable codes and requirements of the City of Detroit and take full responsibility for all code compliance, fees and inspections related to the installation/work herein described. I shall neither hire nor sub-contract to any other person, firm or corporation any portion of the work covered by this building permit.

Print Name: _____ Signature: _____ Date: _____
(Homeowner)

Subscribed and sworn to before me this ____ day of ____ 20 ____ A.D. _____ County, Michigan

Signature: _____ My Commission Expires: _____
(Notary Public)

PERMIT APPLICANT SIGNATURE

I hereby certify that the information on this application is true and correct. I have reviewed all deed restrictions that may apply to this construction and am aware of my responsibility thereunder. I certify that the proposed work is authorized by the owner of the record and I have been authorized to make this application as the property owner(s) authorized agent. Further I agree to conform to all applicable laws and ordinances of jurisdiction. **I am aware that a permit will expire when no inspections are requested and conducted within 180 days of the date of issuance or the date of the previous inspection and that expired permits cannot be**

Print Name: Errol Parks Signature: _____ Date: 1/28/21
(Permit Applicant)

Driver's License #: P620 234 497 780 Expiration: 10/10/23

Subscribed and sworn to before me this ____ day of ____ 20 ____ A.D. _____ County, Michigan

Signature: _____ My Commission Expires: _____
(Notary Public)

Section 23a of the state construction code act of 1972, 1972PA230, MCL 125.1523A, prohibits a person from conspiring to circumvent the licensing requirements of this state relating to persons who are to perform work on a residential building or a residential structure. Visitors of Section 23a are subject to civil fines.

This application can also be completed online. Visit detroitmi.gov/bseed/elaps for more information.

HISTORIC DISTRICT COMMISSION
PROJECT REVIEW REQUEST

CITY OF DETROIT
PLANNING & DEVELOPMENT DEPARTMENT
2 WOODWARD AVENUE, ROOM 808, DETROIT, MI 48226

DATE: _____

PROPERTY INFORMATION

ADDRESS: 15327 WARWICK AKA: _____

HISTORIC DISTRICT: _____

SCOPE OF WORK: (Check ALL that apply)
- [x] Windows/ Doors
- [ ] Roof/Gutters/ Chimney
- [ ] Porch/ Deck
- [ ] Landscape/Fence/ Tree/Park
- [ ] General Rehab
- [ ] New Construction
- [ ] Demolition
- [ ] Addition
- [ ] Other: _____

APPLICANT IDENTIFICATION

- [x] Property Owner/ Homeowner
- [ ] Contractor
- [ ] Tenant or Business Occupant
- [ ] Architect/Engineer/ Consultant

NAME: Alunda Boykin COMPANY NAME: _____

ADDRESS: 15327 WARWICK CITY: Detroit STATE: MI ZIP: 48223

PHONE: _____ MOBILE: 313/715/7104 EMAIL: Alundaboykin@Hotmail.com

PROJECT REVIEW REQUEST CHECKLIST

Please attach the following documentation to your request:
PLEASE KEEP FILE SIZE OF ENTIRE SUBMISSION UNDER 30MB

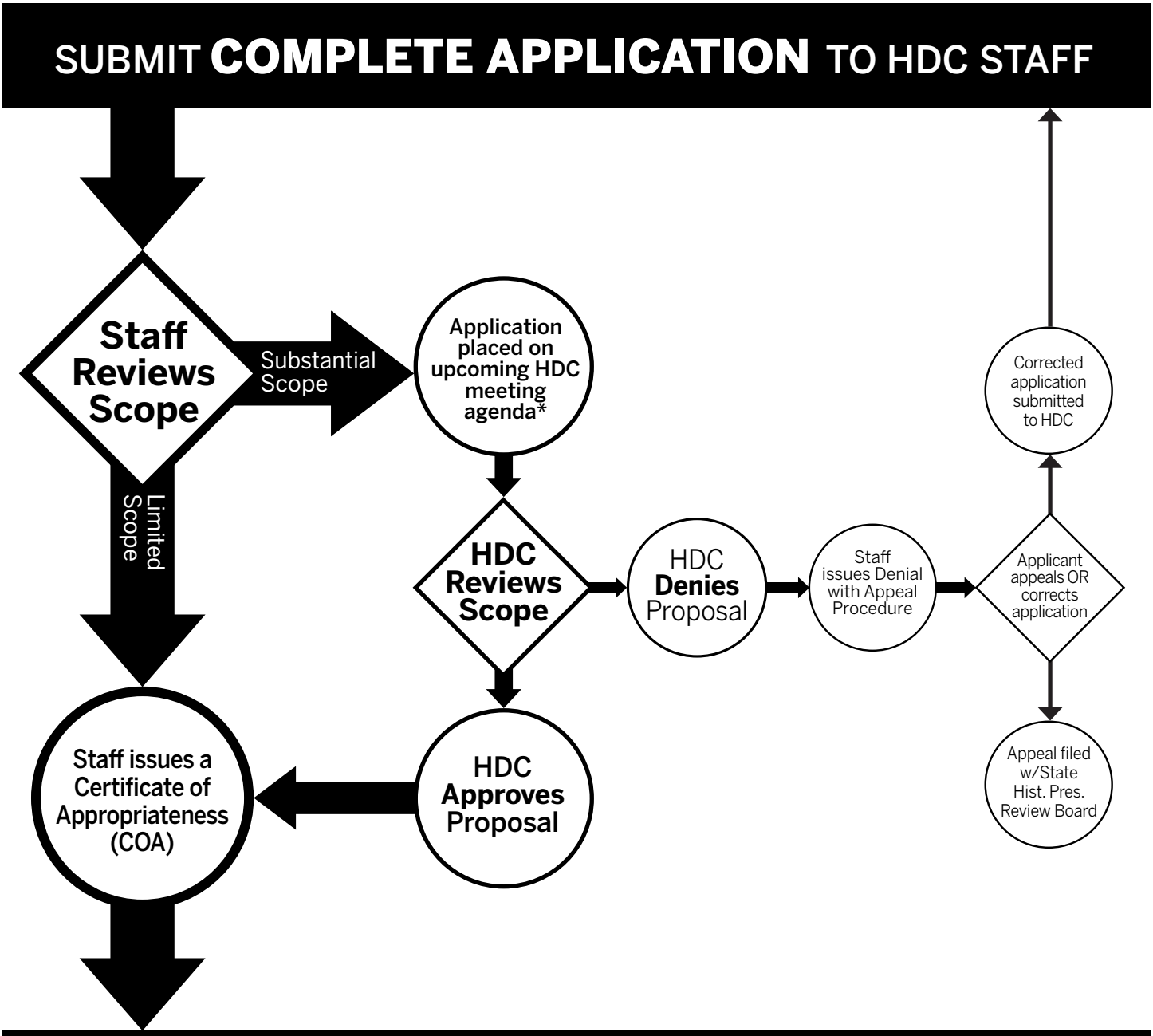
- [ ] **Completed Building Permit Application** (highlighted portions only)
- [ ] **ePLANS Permit Number** (only applicable if you've already applied for permits through ePLANS)
- [ ] **Photographs** of ALL sides of existing building or site
- [ ] **Detailed photographs** of location of proposed work (photographs to show existing condition(s), design, color, & material)
- [ ] **Description of existing conditions** (including materials and design)
- [ ] **Description of project** (if replacing any existing material(s), include an explanation as to why replacement--rather than repair--of existing and/or construction of new is required)
- [ ] **Detailed scope of work** (formatted as bulleted list)
- [ ] **Brochure/cut sheets** for proposed replacement material(s) and/or product(s), as applicable

NOTE:
Based on the scope of work, additional documentation may be required.
See www.detroitmi.gov/hdc for scope-specific requirements.

Upon receipt of this documentation, staff will review and inform you of the next steps toward obtaining your building permit from the Buildings, Safety Engineering and Environmental Department (BSEED) to perform the work.

SUBMIT COMPLETED REQUESTS TO HDC@DETROITMI.GOV

HISTORIC DISTRICT COMMISSION
REVIEW & PERMIT PROCESS



* THE **COMMISSION MEETS REGULARY AT LEAST ONCE PER MONTH,** TYPICALLY ON THE SECOND WEDNESDAY OF THE MONTH.
(SEE WEBSITE FOR MEETING SCHEDULE/AGENDAS)

FIND OUT MORE AT www.detroitmi.gov/hdc

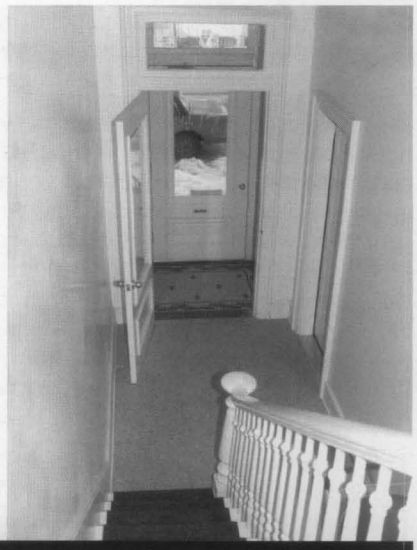
37 PRESERVATION BRIEFS

Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing

Sharon C. Park, FAIA, and Douglas C. Hicks

National Park Service
U.S. Department of the Interior

Heritage Preservation Services



Lead-based paint, a toxic material, was widely used in North America on both the exteriors and interiors of buildings until well into the second half of the twentieth century. If a "historic" place is broadly defined in terms of time as having attained an age of fifty years, this means that almost every historic house contains some lead-based paint. In its deteriorated form, it produces paint chips and lead-laden dust particles that are a known health hazard to both children and adults. Children are particularly at risk when they ingest lead paint dust through direct hand-to-mouth contact and from toys or pacifiers. They are also at risk when they chew lead-painted surfaces in accessible locations. In addition to its presence in houses, leaded paint chips, lead dust, or lead-contaminated soil in play areas can elevate a child's blood lead level to a degree that measures to reduce and control the hazard should be undertaken (see Action Level Chart, page 6)

The premise of this Preservation Brief is that historic housing can be made lead-safe for children without removing significant decorative features and finishes, or architectural trimwork that may contribute to the building's historic character (see fig. 1). *Historic housing* — encompassing private dwellings and all types of rental units—is necessarily the focus of this Brief because federal and state laws primarily address the hazards of lead and

Before

After

Figure 1. A large-scale historic rehabilitation project incorporated sensitive lead-hazard reduction measures. Interior walls and woodwork were cleaned, repaired, and repainted and compatible new floor coverings added. The total project was economically sound and undertaken in a careful manner that preserved the building's historic character. Photos: Landmarks Design Associates.

lead-based paint in housing and day-care centers to protect the health of children under six years of age. Rarely are there mandated requirements for the removal of lead-based paint from non-residential buildings.

Ideally, most owners and managers should understand the health hazards created by lead-based paint and voluntarily control these hazards to protect young children. A stricter approach has been taken by some state and federal funding programs which have compliance requirements for identifying the problem, notifying tenants, and, in some cases, remedying lead hazards in housing (see Legislation Sidebar, pg.15). With new rules being written, and new products and approaches being developed, it is often difficult to find systematic and balanced methodologies for dealing with lead-based paint in historic properties.

This Preservation Brief is intended to serve as an introduction to the complex issue of historic lead-based paint and its management. It explains how to plan and implement lead-hazard control measures to strike a balance between preserving a historic building's significant materials and features and protecting human health and safety, as well as the environment. It is not meant to be a "how-to guide" for undertaking the work. Such a short-cut approach could easily result in creating a greater health risk, if proper precautions were not taken. Home renovators and construction workers should be aware that serious health problems can be caused by coming into contact with lead. For this reason, there are also laws to protect workers on the job site (see Worker Safety Sidebar, pg. 4). Controlling the amount of waste containing lead-based paint residue will also reduce the impact on the environment. All of these considerations must be weighed against the goal of providing housing that is safe for children.

Lead in Historic Paints

Lead compounds were an important component of many historic paints. Lead, in the forms of lead carbonate and lead oxides, had excellent adhesion, drying, and covering abilities. White lead, linseed oil, and inorganic pigments were the basic components for paint in the 18th, 19th, and early 20th centuries. Lead-based paint was used extensively on wooden exteriors and interior trimwork, window sash, window frames, baseboards, wainscoting, doors, frames, and high gloss wall surfaces such as those found in kitchens and bathrooms. Almost all painted metals were primed with red lead or painted with lead-based paints. Even milk (casein) and water-based paints (distemper and calcimines) could contain some lead, usually in the form of hiding agents or pigments. Varnishes sometimes contained lead. Lead compounds were also used as driers in paint and window glazing putty.

In 1978, the use of lead-based paint in residential housing was banned by the federal government. Because the hazards have been known for some time, many lead components of paint were replaced by titanium and other less toxic elements earlier in the 20th century. Since houses are periodically repainted, the most recent layer of paint will most likely *not* contain lead, but the older layers underneath probably will. Therefore, the only way to accurately determine the amount of lead present in older paint is to have it analyzed.

It is important that owners of historic properties be aware that layers of older paint can reveal a great deal about the history of a building and that paint chronology is often used to date alterations or to document decorative period colors (see figs. 2, 3). Highly significant decorative finishes, such as graining, marbleizing, stenciling, polychrome decoration, and murals should be evaluated by a painting conservator to develop the appropriate preservation treatment that will stabilize the paint and eliminate the need to remove it. If such finishes must be removed in the process of controlling lead hazards, then research, paint analysis, and documentation are advisable as a record for future research and treatment.

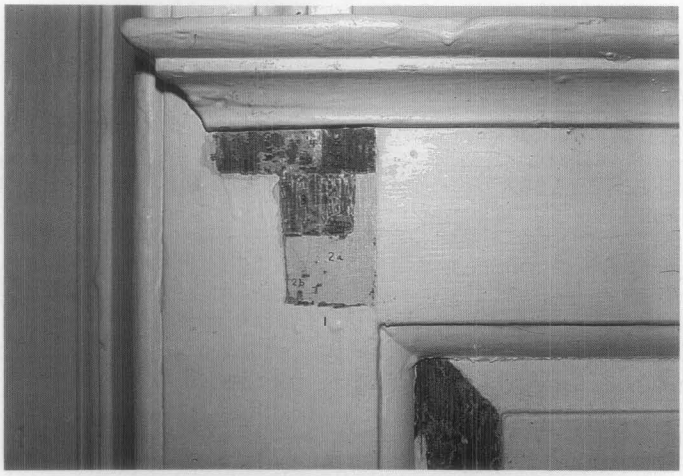


Figure 2. The paint chronology of this mantel, seen in the exposed paint layers in the left corner, proved it had been relocated from another room of the house. To remove a significant feature's paint history and the evidence of its original sequence of color by stripping off all the paint is inappropriate — and unnecessary — as part of a lead hazard reduction project. Careful surface preparation and repainting with lead-free top coats is recommended. Photo: NPS Files.

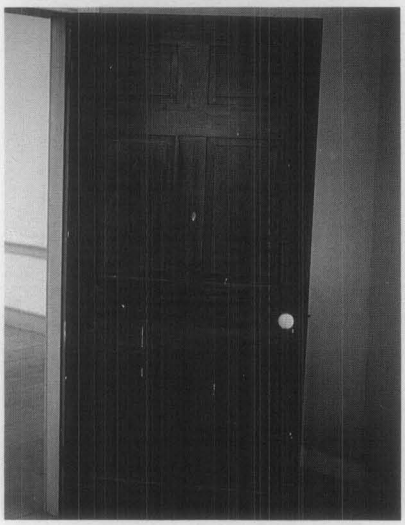


Figure 3. Significant architectural features and their finishes should not be removed during a project incorporating lead hazard controls. If the decorative stencilling above, or hand grained doors below, or painted murals need repair, then a paint conservator should be consulted. Once loose paint is consolidated or otherwise stabilized, a clear finish or other reversible clear protective surface or coating can be added to areas subject to impact or abrasion. Photos: NPS Files.

Planning for Lead Hazard Reduction in Historic Housing

Typical health department guidelines call for removing as much of the surfaces that contain lead-based paint as possible. *This results in extensive loss or modification of architectural features and finishes and is not appropriate for most historic properties* (see fig. 4). A great number of federally-assisted housing programs are moving away from this approach as too expensive and too dangerous to the immediate work environment. A preferred approach, consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*, calls for removing, controlling, or managing the hazards rather than wholesale—or even partial—removal of the historic features and finishes (fig. 5). This is generally achieved through careful cleaning and treatment of deteriorating paint, friction surfaces, surfaces accessible to young children, and lead in soil (see figs. 6, 7). Lead-based paint that it not causing a hazard is thus permitted to remain, and, in consequence, the amount of historic finishes, features and trimwork removed from a property is minimized.

Because the hazard of lead poisoning is tied to the risk of ingesting lead, careful planning can help to determine how much risk is present and how best to allocate available financial resources. An owner, with professional assistance, can protect a historic resource and make it lead-safe using this three-step planning process:

I. Identify the historical significance of the building and architectural character of its features and finishes;

II. Undertake a risk assessment of interior and exterior surfaces to determine the hazards from lead and lead-based paint; and,

III. Evaluate the options for lead hazard control in the context of historic preservation standards.

I. Identify the historical significance of the building and architectural character of its features and finishes

The historical significance, integrity, and architectural character of the building always need to be assessed before work is undertaken that might adversely affect them. An owner may need to enlist the help of a preservation architect, building conservator or historian. The State Historic Preservation Office (SHPO) may be able to provide a list of knowledgeable preservation professionals who could assist with this evaluation.

Before

After

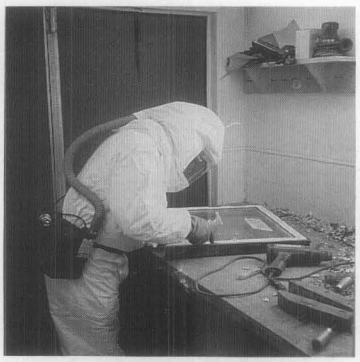
Figure 4. The typical method for abating lead-based paint through substrate removal is not consistent with the Standards for Rehabilitation. In this project, all the historic trim, base panels, and the transom were removed. While the unit is lead-safe, its character has been severly altered. Figure 5 shows a similar, but successful, balance of historic preservation and lead hazard control work. Photo: NPS Files.

Before

After

Figure 5. When historic interiors are rehabilitated, it is possible to remove the offending substance, such as deteriorated paint, without removing the features. In this case, the walls were repaired, and the trim and base panels were stripped of paint to a sound substrate, then repainted. Photos: Landmarks Design Associates.

Worker Safety



Low-level heat guns can be used to remove lead-based paint from significant historic windows and trimwork, but a worker exposed to lead dust over an extended period of time must be protected from the hazards created during the process of paint removal. Photo: Williamsport Preservation Training Center.

Current worker safety standards were established by OSHA's 29 CFR Part 1926, Lead Exposure in Construction; Interim Final Rule, which became effective June 3, 1993. These standards base levels of worker protection on exposure to airborne lead dust. They are primarily targeted to persons working within the construction industry, but apply to any workers who are exposed to lead dust for longer than a specific amount of time and duration. The Interim Final Rule establishes an action level of 30 micrograms of lead dust per cubic meter of air (30 ug/m^3) based on an eight hour, time-weighted average, as the level at which employers must initiate compliance activities; and it also establishes 50 ug/m^3 of lead dust as the permitted exposure level (PEL) for workers.

The standard identifies responsibilities before, during, and after the actual abatement activity necessary to protect the worker. Before the project begins, it requires an exposure assessment, a written compliance plan, initial medical surveillance, and training. The exposure assessment determines whether a worker may be exposed to lead. OSHA has identified a number of work tasks expected to produce dust levels between 50 and 500 ug/m^3 of air, including manual demolition, manual scraping, manual sanding, heat gun applications, general cleanup, and power tool use when the power tool is equipped with a dust collection system. It is an OSHA requirement that, at a minimum, a HEPA filtered half-face respirator with a protection factor of 10 be used for these operations. Initial blood lead level (BLL) base lines are established for each worker. Actual dust levels are monitored by air sampling of representative work activities, generally by an industrial hygienist or an environmental monitoring firm. Protective equipment is determined by the dust level. For all workers exposed at, or above, the action level for over 30 days in a 12-month period, BLLs are tested on a regular basis of every 2 months for the first 6 months and every 6 months thereafter. After completing a project, maintenance, medical surveillance, and recordkeeping responsibilities continue.

HEPA vacuums, HEPA respirators, and HEPA filters, which substantially reduce exposure to lead dust, are available through laboratory safety and supply catalogs and vendors.

Copies of 29 CFR Part 1926, Lead Exposure in Construction: Interim Final Rule, are available from the Department of Labor, Occupational Safety and Health Administration, or may be found in any library with a current edtion of the Code of Federal Regulation (CFR).

Features and finishes of a historic building that exhibit distinctive characteristics of an architectural style; represent work by specialized craftsmen; or possess high artistic value should be identified so they can be protected and preserved during treatment. When it is absolutely necessary to remove a significant architectural feature or finish—as noted in the first two priorities listed below—it should be replaced with a new feature and finish that matches in design, detail, color, texture, and, in most cases, material.

Figure 6. Deteriorating operable windows often contribute to lead dust in a house. Peeling paint and small particles from abraded surfaces collect in window troughs or sills and are then carried inside by air currents, settling on floors. When the lead dust mixes with regular house dust, it can easily be ingested by a child through hand to mouth contact. In homes with small children, floors and other surfaces should be kept as clean as possible to avoid lead contamination.

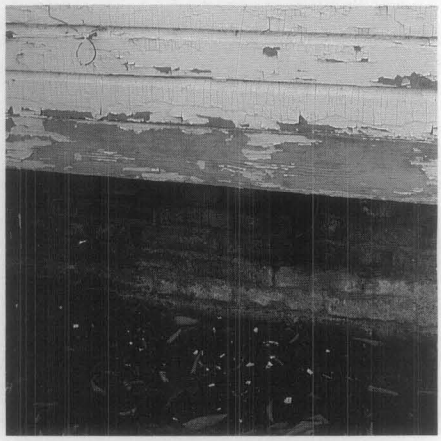


Figure 7. Chalking exterior paint can cause dangerous lead levels in soil around a house. Lead levels are usually highest in the one foot wide area adjacent to the building foundation. In these cases, the existing soil should be replaced with new soil or sod. This is particularly important if children and small pets play in contaminated areas, then inadvertently track the dirt inside.

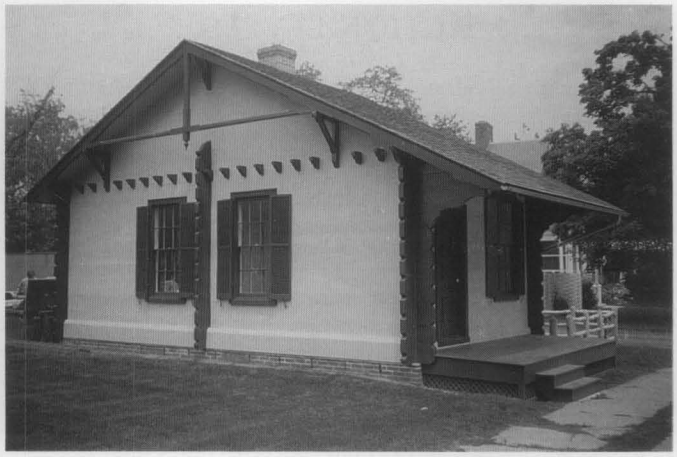
Finally, features and finishes that characterize simple, vernacular buildings should be retained and preserved; in the process of removing hazards, there are usually reasonable options for their protection. Wholesale removal of historic trim, and other seemingly less important historic material, undermines a building's overall character and integrity and, thus, is never recommended.

For each historic property, features will vary in significance. As part of a survey of each historic property (see figure 8), a list of priorities should be made, in this order:

- *Highly significant features and finishes that should always be protected and preserved;*
- *Significant features and finishes that should be carefully repaired or, if necessary, replaced in-kind or to match all visual qualities; and*
- *Non-significant or altered areas where removal, rigid enclosure, or replacement could occur.*

This hierarchy gives an owner a working guide for making decisions about appropriate methods of removing lead paint.

Before



After

Figure 8. A survey of the property will help establish priorities for treatment based on its historical significance and physical condition. In this 1878 plank house, the original interlocking planks, corner details, projecting rafter tails, and original windows were considered highly significant features and were carefully stripped of failing paint using chemical poultices and HEPA sanding, then repainted. The less significant, but character-defining, painted porch flooring was replaced in new, but matching material. The non-historic porch screening was removed entirely. Photo before: Bryan Blundell; Photo after: Deborah Birch.

II. Undertake a risk assessment of interior and exterior surfaces to determine hazards from lead and lead-based paint.

While it can be assumed that most historic housing contains lead-based paint, it cannot be assumed that it is causing a health risk and should be removed. The purpose of a risk assessment is to determine, through testing and evaluation, where hazards from lead warrant remedial action (see fig. 9). Testing by a specialist can be done on paint, soil, or lead dust either on-site or in a laboratory using methods such as x-ray fluorescence (XRF) analyzers, chemicals, dust wipe tests, and atomic absorption spectroscopy. Risk assessments can be fairly low cost investigations of the location, condition, and severity of lead hazards found in house dust, soil, water, and deteriorating paint. Risk assessments will also address other sources of lead from hobbies, crockery, water, and the parents' work environment. A public health office should be able to provide names of certified risk assessors, paint inspectors, and testing laboratories. These services are critical when owners are seeking to implement measures to reduce suspected lead hazards in housing, day-care centers, or when extensive rehabilitations are planned.

The risk assessment should record:

- *the paint's location*
- *the paint's condition*
- *lead content of paint and soil*
- *the type of surface (friction; accessible to children for chewing; impact)*
- *how much lead dust is actively present*
- *how the family uses and cares for the house*
- *the age of the occupants who might come into contact with lead paint.*

a

b

c

Figure 9. A variety of testing methods are used to establish how much lead is in paint and where this paint is located: a home test kit *(a) is a good screening device to determine if lead is present, but it should not be relied upon exclusively; an* X-ray Fluorescence *machine or scanner (b), used by a licensed professional, determines, without disturbing the surface, if lead is present in underlying layers of paint; and a* dust wipe test *(c), sent to a laboratory for processing, can be used as either a clearance test, once work is completed, or as a monitoring device to determine if lead dust is present on surfaces. Paint chips can also be sent to a laboratory for analysis to determine the exact amount of lead by weight in a sample.*

ACTION LEVELS

Check with a Regional Environmental Protection Agency (EPA) office or appropriate state authorities if you have questions about applicable action levels that may change over time.

Blood Lead Levels are generally established from drawn blood and not from a finger stick test that may be unreliable. Units are measured in micrograms per deciliter (μg/dL) and reflect the Centers for Disease Control (CDC) Standards in effect in 2006.

Children:
- <10 μg/dL normal; no action needed
- 10-14 μg/dL; slight concern; look for lead source
- 15-19 μg/dL; mild concern; counseling; medical monitoring
- 20-44 μg/dL; moderate-high concern; must find/reduce lead source
- >45 μg/dL; very serious; hospitalization and removal of lead source

Adults:
- 25 μg/dL; level of concern; find source of lead
- >50 μg/dL; Occupational Safety and Health Administration (OSHA) Standard for medical removal from the worksite.

Lead in paint: Paint with lead levels greater than or equal to 1.0 milligrams per square centimeter, or more that 0.5% by weight is considered lead-based paint.

Lead dust wipes should be below the following:
- Floors; 40 μg/ft2
- Window sills; 250 μg/ft2
- Window troughs; 400 μg/ft2

Lead in soil: measured in parts per million (ppm)
Hazardous conditions:
- Play area residential soil; 400 ppm
- Soil in remaining yard areas; 1200 ppm

It is important from a health standpoint that future tenants, painters, and construction workers know that lead-based paint is present, even under treated surfaces, in order to take precautions when work is undertaken in areas that will generate lead dust. Whenever mitigation work is completed, it is important to have a clearance test using the *dust wipe method* to ensure that lead-laden dust generated during the work does not remain at levels above those established by the Environmental Protection Agency (EPA) and the Department of Housing and Urban Development (HUD) (see Action Levels Chart, above). A building file should be maintained and updated whenever any additional lead hazard control work is completed.

Hazards should be removed, mitigated, or managed in the order of their health threat, as identified in a risk assessment (with 1. the greatest risk and 8. the least dangerous):

1. Peeling, chipping, flaking, and chewed interior lead-based paint and surfaces
2. Lead dust on interior surfaces
3. High lead in soil levels around the house and in play areas (check state requirements)
4. Deteriorated exterior painted surfaces and features
5. Friction surfaces subject to abrasion (windows, doors, painted floors)
6. Accessible, chewable surfaces (sills, rails) if small children are present
7. Impact surfaces (baseboards and door jambs)
8. Other interior surfaces showing age or deterioration (walls and ceilings)

III. Evaluate options for hazard control in the context of historic preservation standards.

The Secretary of the Interior's Standards for the Treatment of Historic Properties—established principles used to evaluate work that may impact the integrity and significance of National Register properties—can help guide suitable health control methods. The *preservation standards* call for the protection of historic materials and historic character of buildings through stabilization, conservation, maintenance, and repair. The *rehabilitation standards* call for the repair of historic materials with replacement of a character-defining feature appropriate only when its deterioration or damage is so extensive that repair is infeasible. From a preservation standpoint, selecting a hazard control method that removes *only* the deteriorating paint, or that involves some degree of repair, is always preferable to the total replacement of a historic feature.

By tying the remedial work to the areas of risk, it is possible to limit the amount of intrusive work on delicate or aging features of a building without jeopardizing the health and safety of the occupants. To make historic housing lead-safe, the gentlest method possible should be used to remove the offending substance—lead-laden dust, visible paint chips, lead in soil, or extensively deteriorated paint. Overly aggressive abatement may damage or destroy much more historic material than is necessary to remove lead paint, such as abrading historic surfaces. Another reason for targeting paint removal is to limit the amount of lead dust on the work site. This, in turn, helps avoid expensive worker protection, cleanup, and disposal of larger amounts of hazardous waste.

Whenever extensive amounts of lead must be removed from a property, or when methods of removing toxic substances will impact the environment, it is extremely important that the owner be aware of the issues surrounding worker safety, environmental controls, and proper disposal (see fig. 10, 11). Appropriate architectural, engineering and environmental professionals should be consulted when lead hazard projects are complex.

Following are brief explanations of the two approaches for controlling lead hazards, once they have been identified as a risk. These controls are recommended by the Department of Housing and Urban Development in *Guidelines for the Evaluation and Control of Lead-Paint Hazards in Housing*, and are summarized here to focus on the special considerations for historic housing:

Interim Controls: Short-term solutions include thorough dust removal; thorough washdown and clean-up of exposed surfaces; paint film stabilization and repainting; covering of lead-contaminated soil; and making tenants aware of lead hazards. Interim controls require ongoing maintenance and evaluation.

Figure 10. The choice of paint removal method will trigger various environmental controls and worker protection. The chemical poultice-type paint remover uses a paper backing that keeps the lead waste contained for proper disposal. The worker is adequately protected by a suit and gloves; for this work a respirator was not required. Local laws required containment and neutralization of any after-wash water run off. Photo: NPS Files.

Figure 11. New methods are being developed or adapted to safely remove lead-based paint from various substrates. On this cast iron building undergoing rehabilitation for apartment units, multiple layers of lead-based paint were removed with pneumatic needle guns with vacuum attachments. Paint chips and waste containing lead-based paint were placed in 55 gallon drums for transport to a special waste site, and the workers were fully protected. The cleaned metal was primed and repainted. Photo: Building Conservation Associates, Inc.

Hazard Abatement: Long-term solutions are defined as having an expected life of 20 years or more, and involve permanent removal of hazardous paint through chemicals, heat guns or controlled sanding/abrasive methods; permanent removal of deteriorated painted features through replacement; the removal or permanent covering of contaminated soil; and the use of enclosures (such as drywall) to isolate painted surfaces. The use of specialized elastomeric encapsulant paints and coatings can be considered as permanent containment of lead-based paint if they receive a 20-year manufacturer's warranty or are approved by a certified risk assessor. One should be aware of their advantages and drawbacks for use in historic housing.

Within the context of the historic preservation standards, the most appropriate method will always be the least invasive. More invasive approaches are considered only under the special circumstances outlined in the three-step process. An inverted triangle (see fig. 12) shows the greatest number of residential projects fall well within the "interim controls" section. Most housing can be made safe for children using these sensitive treatments, particularly if no renovation work is anticipated. Next, where owners may have less control over the care and upkeep of housing and rental units, more aggressive means of removing hazards may be needed. Finally, large-scale projects to rehabilitate housing or convert non-residential buildings to housing may successfully incorporate "hazard abatement" as a part of the overall work.

Appropriate Methods for Controlling Lead Hazards

In selecting appropriate methods for controlling lead hazards, it is important to refer to Step I. of the survey where architecturally significant features and finishes are identified and need to be preserved. Work activities will vary according to hazard abatement needs; for example, while an interim control would be used to stabilize paint on most trimwork, an accessible window sill might need to be stripped prior to repainting. Since paint on a window sill is usually not a significant finish, such work would be appropriate. Other appropriate methods for controlling lead hazards are summarized in the accompanying chart (see fig. 13).

The method selected for removing or controlling the hazards has a direct bearing on the type of worker protection as well as the type of disposal needed, if waste is determined to be hazardous (see fig. 14). Following are

Figure 12. An inverted triangle makes the point that most of the nation's housing can be made lead-safe using interim control methods, such as dust control, paint stabilization, and good housekeeping. Shaded from light to dark, the lighter interim controls will generally not harm the historic materials. The darker, more aggressive controls, can be implemented with rehabilitation projects where paint removal, selective replacement of deteriorated elements, and encapsulation or enclosure are incorporated into other work.

MANAGING OR REMOVING LEAD-BASED PAINT IN HISTORIC BUILDINGS

Interim solutions, the preferred approach, include a combination of the following:

General maintenance	Dust control	Paint stabilization	Soil treatment	Tenant education
Repair deteriorated materials; Control leaks; Maintain exterior roofs, siding, etc. to keep moisture out of building; Perform emergency repairs quickly if lead-based paint is exposed; Maintain building file with lead test data and reports, receipts or invoices on completed lead mitigation work.	Damp mop floor; wet broom sweep porches and steps; Damp dust window sills and window troughs; Washdown painted surfaces periodically (use tri-sodium phosphate or equivalent, if necessary); Clean or vacuum carpets regularly (use HEPA vacuum if lead dust returns); Undertake periodic inspection with annual dust wipe tests.	Wet-sand loose paint and repaint; Keep topcoats of paint in good condition; Selectively remove paint from friction & chewable surfaces (sills) and repaint; Use good quality latex, latex acrylic or oil/ alkyd paints compatible with existing paint; Consider more durable encapsulating paints and wall lining systems if necessary.	Add bark mulch, sod or topsoil to bare dirt areas with high lead levels; Discourage children from playing in these areas by providing sand box or other safe areas; Do not plant vegetable garden in areas with lead in soil; Be careful that pets do not track contaminated soil inside house.	Notify tenants and workers as to the location of lead-based paint; Instruct tenants to keep property clean; Instruct tenants to notify owner or manager when repairs are necessary; Provide tenants with health department pamphlets on the hazards of lead-based paint.

Hazard abatement removes the hazard - not necessarily all the paint or the feature, and may include:

Paint removal	Paint Encapsulation Enclosure	Replace deteriorated elements	Soil treatment	Compliance
Remove deteriorated paint or paint on friction, chewable, or impact surfaces to sound layer, repaint; Consider using the gentlest means possible to remove paint to avoid damage to substrate: wet sanding, low level heat guns, chemical strippers, or HEPA sanding; Send easily removable items (shutters, doors) off-site for paint stripping, then reinstall and paint.	Consider encapsulating paints with 20 years warranty to seal-in older paint; or use in combination with wall liners to stabilize plaster wall surfaces prior to repainting; Seal lead-based painted surfaces behind rigid enclosures, such as drywall, or use luan or plywood with new coverings over previously painted floors; Use rubber stair treads on painted steps.	Remove, only when necessary, seriously deteriorated painted elements such as windows, doors, and trimwork. Replace with new elements that match the historic in appearance, detailing, and materials, when possible; Replace component element of a friction surface (parting bead or stops of windows) or of impact surfaces (shoe moldings) with new elements.	Remove contaminated soil around foundation to a depth of 3" and replace with new soil and appropriate planting material or paving; If site is highly contaminated from other lead sources (smelter, sandblasted water tank) consult an environmental specialist as well as a landscape architect; Do not alter a significant historic landscape	Be aware of all federal, state and local laws regarding lead-based paint abatement, environmental controls and worker safety; Dispose of all hazardous waste according to applicable laws; Be aware that methods to remove lead-based paint can cause differing amounts of lead dust which can be dangerous to workers and residents.

Figure 13. This chart indicates the wide variety of treatments that can be used to control or eliminate lead-based paint hazards. For historic buildings, the least invasive method should be used to control the hazards identified during a risk assessment and are shown in the lighter shaded portion of the chart. The darker portions show the more invasive hazard control methods which must be carefully implemented to ensure that whenever possible, historic materials are protected. The total abatement of all surfaces is not recommended for historic buildings because it can damage historic materials and destroy the evidence of early paint colors and layering. Prepared by Sharon C. Park, AIA.

IMPACT OF VARIOUS PAINT REMOVAL/ABATEMENT TECHNIQUES

REMOVAL METHOD	IMPACT ON MATERIALS	LEAD DUST GENERATED	IMPACT ON WORKER	IMPACT ON ENVIRONMENT
Wet scraping; wet sanding; repainting	Low: Gentle to substrate; feather edges to obtain smooth paint surface	Low: Misting surfaces reduces lead dust	Low: No special protection for respiration, but wash before eating, drinking, etc.	Low-medium: Debris often general waste; check disposal requirements
Heat gun; paint removal w/ scrapers < 450°F	Low: Gentle to substrate	Medium: Flicking softened paint does create airborne lead dust	Medium: Respirator w/HEPA filters usually required	Medium: Lead-paint sludge is hazardous waste
Chemical stripping on-site; use liquid or poultice; avoid methylene chloride	Low to Medium: Avoid damage to wood texture/grain with long dwell time	Low: Chemicals are moist and reduce lead dust	Low: For lead dust; for volatile chemicals may require solvent filter mask	Medium: Lead residue hazardous; off/rinse must be filtered or contained
Controlled HEPA sanding; primarily for wooden surfaces; sander uses HEPA vacuum shroud	Low to Medium: Avoid gouging wooden surfaces; good for feathering edges	Medium to High: Worker must know how to use equipment	Medium to High: Requires respirator with HEPA filter and possibly containment of area	Medium to High: Paint debris is hazardous and must be contained in drums for disposal
Dry Abrasives on cast iron; CO_2, walnut shells, needle gun removal; can use vacuum shrouds	Low to Medium: Substrate must be durable and in good condition; not for soft or porous materials	Generally High: Large volume of paint chips fall freely unless there is a vacuum shroud	High; Generally requires full suiting, respirators and containment, even if vacuum shroud used	Medium to High: Increased volume of hazardous waste if abrasive is added to lead debris
Chemical stripping off-site; cold tank reduces ungluing caused by hot tank	Medium to High: Elements can be damaged during removal or in tank	Usually low: Take care when removing elements to minimize lead-laden dust	Low: Take care when washing up to remove dust; wash clothes separately	Low to Medium: Stripping contractor responsible for disposal
Feature or substrate removal and replacement	High: Loss of feature is irretrievable; Avoid wholesale removal of significant elements	Usually low: Worker exposure can be high if element hazardous due to high amounts of lead-based paint	Usually low: Varies with lead dust generated; use air monitors and wet mist area	Varies: Must do a TCLP leach test to determine if debris can go to landfill or is hazardous waste

Figure 14. This chart shows how the impact of lead hazard control work can impact a property. The paint or hazard removal methods, shaded from light to dark, are listed from low to medium to high impact on historic materials. Each method will generate varying amounts of lead dust and hazardous materials; the impact on workers and the environment will thus vary accordingly. This information gives a general overview and is not a substitute for careful air monitoring and compliance with worker protection as established by OSHA regulations, and the proper handling/disposal of hazardous waste. Prepared by Sharon C. Park, AIA.

examples of appropriate methods to use to control lead hazards within an historic preservation context.

Historic Interiors (deteriorating paint and chewed surfaces). Whenever lead-based paint (or lead-free paint covering older painted surfaces) begins to peel, chip, craze, or otherwise comes loose, it should be removed to a sound substrate and the surface repainted. If children are present and there is evidence of painted surfaces that have been chewed, such as a window sill, then these surfaces should be stripped to bare wood and repainted. The removal of peeling, flaking, chalking, and deteriorating paint may be of a small scale and undertaken by the owner, or may be extensive enough to require a paint contractor. In either case, care must be taken to avoid spreading lead dust throughout the dwelling unit. If the paint failure is extensive and the dwelling unit requires more permanent hazard removal, then an abatement contractor should be considered. Many states are now requiring that this work be undertaken by specially trained and certified workers.

If an owner undertakes interim controls, it would be advisable to receive specialized training in handling lead-based paint. Such training emphasizes isolating the area, putting plastic sheeting down to catch debris, turning off mechanical systems, taping registers closed, and taking precautions to clean up prior to handling food. Work clothes should be washed separately from regular family laundry. The preferred method for removing flaking paint is the wet sanding of surfaces because it is gentle to the substrate and controls lead dust. The key to reducing lead hazards while stabilizing flaking paint is to keep the surfaces slightly damp to avoid ingesting lead dust. Wet sanding uses special flexible sanding blocks or papers that can be rinsed in water or used along with a bottle mister. This method will generally not create enough debris to constitute hazardous waste (see fig. 15).

Other methods for selectively removing more deteriorated paint in historic housing include controlled sanding, using low-temperature heat guns, or chemical strippers. Standard safety precautions and appropriate worker protection should be used. Methods to *avoid* include uncontrolled dry abrasive methods, high heat removal (lead vaporizes at 1100° F), uncontrolled water blasting, and some chemicals considered carcinogenic (methylene chloride). When possible and practicable, painted elements, such as radiators, doors, shutters, or other easily removable items, can be taken to an off site location for paint removal.

In most cases, when interior surfaces are repainted, good quality interior latex or oil/alkyd paints may be used. The paint and primer system must be compatible with the substrate, as well as any remaining, well-bonded, paint.

Encapsulant paints and coatings, developed to contain lead-based paint, rely on an adhesive bonding of the new paint through the layers of the existing paint. The advantages of these special paint coatings is that they allow the historic substrate to remain in-place; reduce the amount of existing paint removed; can generally be applied without extensive worker protection; and are a durable finish. (They cannot, however, be used on friction surfaces.) The drawbacks include their ability to obscure carved details, unless thinly applied in several applications, and difficulty in future removal. If a specialized paint, such as an elastomeric encapsulant paint, is considered, the manufacturer should be contacted for specific instructions for its application. Unless these specialized paint systems are warranted for 20 years, they are considered as less permanent interim controls.

Lead-dust on interior finishes. Maintaining and washing painted surfaces is one of the most effective measures to prevent lead poisoning. Houses kept in a clean condition, with paint film intact and topcoated with lead-free paint or varnish, may not even pose a health risk. Dust wipe tests, which are sent to a laboratory for processing, can identify the level of lead dust present on floors, window sills, and window troughs. If lead dust is above acceptable levels, then specially modified maintenance procedures can be undertaken to reduce it. All paints deteriorate over time, so maintenance must be ongoing to control fine lead dust. The periodic washing of surfaces with a surfactant, such as tri-sodium phosphate (TSP) or its equivalent, loosens dirt and removes lead dust prior to a water rinse and touch-up painting, if necessary. This interim treatment can be extremely beneficial in controlling lead dust that is posing a hazard (see fig. 16).

Soil/landscape. Soil around building foundations may contain a high level of lead from years of chalking and peeling exterior paint. This dirt can be brought indoors on shoes or by pets and small children if they play outside a house. Lead in the soil is generally found in a narrow band

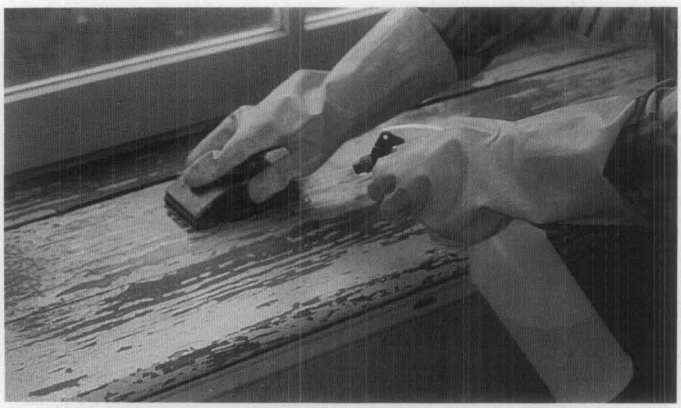


Figure 15. Wet sanding of interior surfaces will keep dust levels down, reduce the need for workers' protection, and provide a sound surface for repainting. Priming and repainting with oil/ alkyd, latex or latex acrylic should be undertaken according to manufacturers' instructions.

Figure 16. Washing windows and cleaning debris from window wells on a periodic basis can substantially reduce lead dust. Using water and tri-sodium phosphate (TSP or equivalent) will remove loose paint, and, after rinsing, the surface can be repainted with latex, oil/ alkyd, or latex acrylic paints.

directly adjacent to the foundation. If the bare soil tests high in lead (see Action Levels Chart, pg. 6), it should be replaced to a depth of several inches or covered with new sod or plantings. Care should be taken to protect historic plantings on the building site and, in particular, historic landscapes, while mitigation work is underway (see fig. 17). If an area has become contaminated due to a variety of environmental conditions (for example, a smelter nearby or water tanks that have been sandblasted in the past), then an environmental specialist as well as a landscape preservation architect should be consulted on appropriate site protection and remedial treatments. It is inappropriate to place hard surfaces, such as concrete or macadam, over historically designed landscaped areas, which is often the recommendation of typical abatement guidelines.

Figure 17. When historic sites are found to contain high levels of lead in bare soil — particularly around foundations — it is important to reduce the hazard without destroying significant landscapes. In many cases, contaminated soil can be removed from the foundation area and appropriate plantings or ground covers replanted in new soil. Photo: Charles A. Birnbaum, ASLA.

Deteriorating paint on exteriors. Deteriorating exterior paint will settle onto window ledges and be blown into the dwelling, and will also contaminate soil at the foundation, as previously discussed. Painted exteriors may include wall surfaces, porches, roof trim and brackets, cornices, dormers, and window surrounds. Most exteriors need repainting every 5-10 years due to the cumulative effect of sun, wind, and rain or lack of maintenance. Methods of paint removal that do not abrade or damage the exterior materials should be evaluated. Because there is often more than one material (for example, painted brick and galvanized roof ornaments), the types of paint removal or paint stabilization systems need to be compatible with each material (see fig. 18). If paint has failed down to the substrate, it should be removed using either controlled sanding/scraping, controlled light abrasives for cast iron and durable metals, chemicals, or low heat. If chemicals are used, it may be necessary to have the contractor contain, filter, or otherwise treat any residue or rinse water. Environmental regulations must be checked prior to work, particularly if a large amount of lead waste will be generated or public water systems affected.

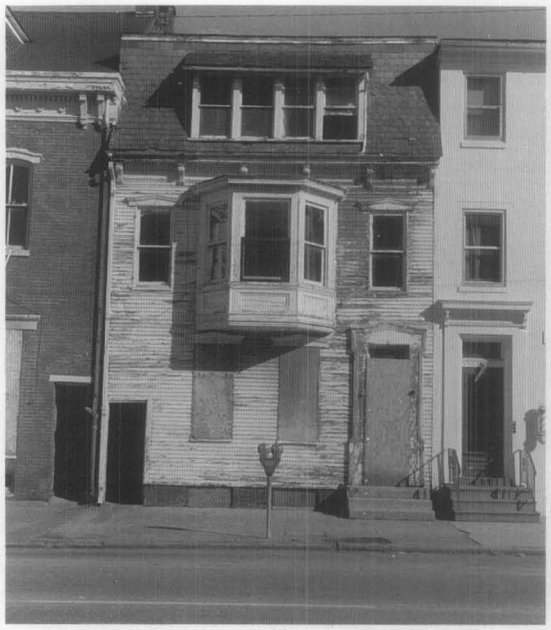
A cost analysis may show that, in the long run, repair and maintenance of historic materials or in-kind replacement can be cost effective. Due to the physical condition and location of wood siding, together with the cost of paint removal, a decision may be made to remove and replace

Figure 18. As part of an urban housing grant program, the exterior of this row house was sucessfully made lead-safe and met the Secretary of the Interior's Standards for Rehabilitation. The exterior was washed, then repainted with exterior grade alkyd paint. The decorative roof brackets and cornice were repainted; not removed or covered as is often recommended in typical abatement guidelines. The previously altered, deteriorated window sash were replaced with new sash and jamb liners set within the historic frames. Photos: Deborah Birch.

these materials on some historic frame buildings. If the repair or replacement of historic cladding on a primary elevation is being undertaken, such replacement materials should match the historic cladding in material, size, configuration, and detail (see fig. 19). The use of an artificial siding or aluminum coil stock panning systems over wooden trimwork or sills and lintels (as recommended in some abatement guidelines) is not appropriate, particularly on principal facades of historic buildings because they change the profile appearance of the exterior trimwork and may damage historic materials and detailing during installation. Unless the siding is too deteriorated to warrant repair and the cost is too prohibitive to use matching replacement materials (i.e., wood for wood), substitute materials are not recommended.

The use of specialized encapsulant paint coatings on exteriors—in particular, moist or humid climates, and, to some extent, cold climates—is discouraged because such coatings may serve to impede the movement of moisture that naturally migrates through other paints or mask leaks that may be causing substrate decay. Thus, a carefully applied exterior paint system (either oil/alkyd or latex) with periodic repainting can be very effective.

Friction Surfaces. Interior features with surfaces that—functionally—rub together such as windows and doors, or are subject to human wear and tear, such as floor and steps, are known as friction surfaces. It is unclear how much lead dust is created when friction surfaces that contain lead-based paint, but are top-coated with lead-free paint, rub together because much of the earlier paint may have worn away. For example, if lead dust levels around windows or on painted floors are consistently above acceptable levels, treating nearby friction surfaces should be considered. If surfaces, such as operable windows, operable doors, painted porch decks, painted floors and painted steps appear to be generating lead dust, they should be controlled through isolating or removing the lead-based paint. Window and door edges can be stripped or planed, or the units stripped on or off site to remove paint prior to repainting. Simple wooden stops and parting beads for windows, which often split upon removal, can be replaced.



Before

After

Figure 19. In many cases, exterior wood siding can be repaired, selectively replaced, and repainted, as illustrated in this successful residential rehabilitation. Deteriorating wood siding was removed from the foundation to the top of the first floor windows and replaced with matching wood siding. The entire building was repainted. Photos: Crispus Attucks Community Development Corporation.

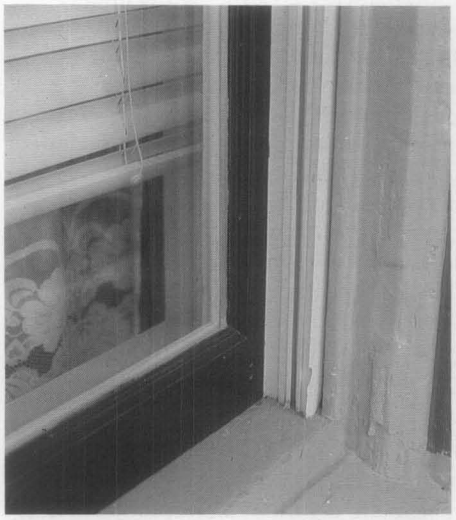


Figure 20. Operable windows have friction surfaces between the sash and the frames, which can be a source of fine lead dust. In this case, the deteriorated sash was replaced, but the historic frame remains in place, sucessfully isolated from the sash with a simple vinyl jamb liner that is part of the new sash operation.

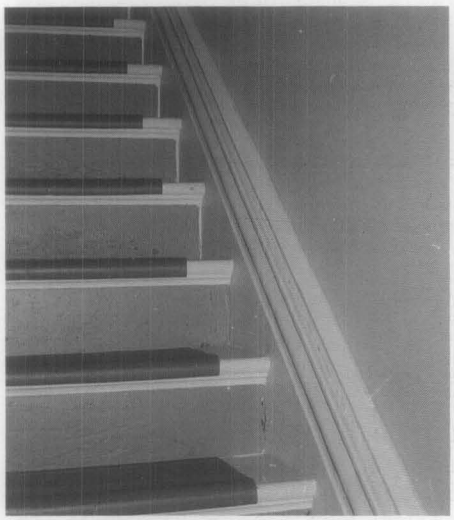


Figure 21. Painted stairs and floors can cause a problem because lead dust settles between the wooden boards. In this case, the steps were sanded, repainted, and covered with rubber stair treads. The floors could not be effectively cleaned and sealed so they were isolated with a new subflooring, and a washable tile finish installed.

If window sash are severely deteriorated, it is possible to replace them; and vinyl jamb liners can effectively isolate remaining painted window jambs (see fig. 20). When windows are being treated within rehabilitation projects, their repair and upgrading are always recommended. In the event that part or all of a window needs to be replaced, the new work should match in size, configuration, detail, and, whenever possible, material.

Painted floors often present a difficult problem because walking on them abrades the surface, releasing small particles of lead-based paint. It is difficult to remove lead dust between the cracks in previously painted strip flooring even after sanding and vacuuming using special High Efficiency Particulate Air (HEPA) filters to control the lead dust. If painted floors are not highly significant in material, design, or craftsmanship, and they cannot be adequately cleaned and refinished, then replacing or covering them with new flooring may be considered. Stair treads can be easily fitted with rubber or vinyl covers (see fig. 21).

Accessible, projecting, mouthable surfaces. Accessible, chewable surfaces that can be mouthed by small children need not be removed entirely, as some health guidelines recommend. These accessible surfaces are listed as projecting surfaces within a child's reach, including window sills, banister railings, chair rails, and door edges. In many cases, the projecting edges can have all paint removed using wet sanding, a heat gun or chemical strippers, prior to repainting the feature (see fig. 22). If the homeowner feels that there is no evidence of unsupervised mouthing of surfaces, a regular paint may be adequate once painted surfaces have been stabilized. An encapsulant paint that adhesively bonds existing paint layers onto the substrate extends durability. While encapsulant paint systems are difficult to remove from a surface in the future, they permit retention of the historic feature itself. If encapsulant paint is used on molded or decorative woodwork, it should be applied in several thin coats to prevent the architectural detail from being obscured by the heavy paint (see fig 23).

Figure 22. Research has shown that some small children will chew on projecting window sills while teething. As part of a lead hazard control project, the edge of the sill can be stripped to bare wood or an encapsulating paint applied. In this case, a new window sill was installed as part of a window upgrade that retained the historic trim and frame.

Figure 23. Stair banisters and railings are considered mouthable surfaces. In this case, the old paint was wet sanded to a sound layer. Special encapsulant paints were then applied in three thin layers to avoid obscuring the woodwork's fine detailing. It should be noted that many encapsulant paints are now treated with a bitter agent to discourage mouth contact. Photo: Landmarks Design Associates.

Impact Surfaces. Painted surfaces near doorways and along corridors tend to become chipped and scraped simply because of their location. This is particularly true of baseboards, which were designed to protect wall surfaces, and also for doorjambs. Owners should avoid hitting painted impact surfaces with vacuums, brooms, baby carriages, or wheeled toys. Adding new shoe moldings can give greater protection to some baseboards. In most cases, stabilizing loose paint and repainting with a high quality interior paint will provide a durable surface. Clear panels or shields can be installed at narrow doorways, if abrasion continues, or these areas can be stripped of paint and repainted. Features in poor condition may need to be replaced with new, matching materials (see fig. 24).

Other surfaces showing age or deterioration/ walls and ceilings. Many flat wall surfaces and ceilings were not painted with lead-based paint, so will need to be tested for its presence prior to any treatment. Flat surfaces that contain deteriorating lead-based paint should be repaired following the responsible approach previously cited (i.e., removing loose paint to a sound substrate, then repairing damaged plaster using a skim coat or wet plaster repair (see fig. 25). Drywall is used *only* when deterioration is too great to warrant plaster repair. If walls and ceilings have a high lead content, and extensive paint removal is not feasible, there are systems available that use elastomeric paints with special fabric liners to stabilize older, though intact, wall surfaces.

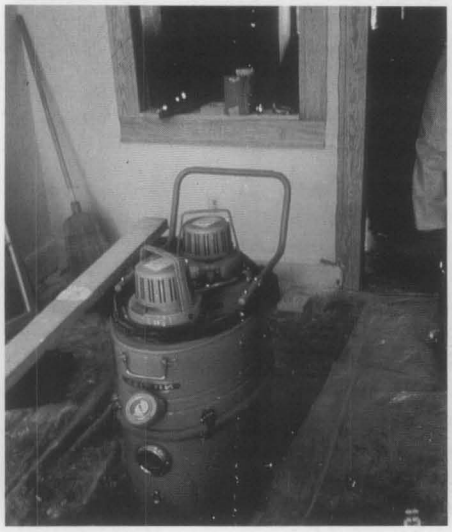
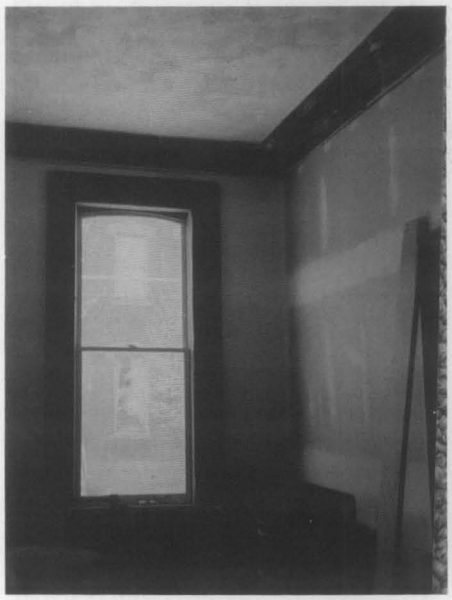


Figure 24. Historic baseboards are often bumped by brooms and vacuum cleaners, causing lead-based paint chips to fall on the floor. Shoe moldings can be added or replaced to increase protection to the baseboard itself. In this case, because the condition of the interior warranted substantial repair, simple historic board trim was replaced with new matching trim. Note the HEPA filter vacuum in the foreground. Photo: NPS file.

Figure 25. In some cases, skim coating deteriorated plaster and repainting is adequate. If the plaster is seriously damaged or failing, drywall may be considered so long as the molding and window reveal relationships are retained. In this case, plaster between the windows was repaired and repainted and the side wall plaster was replaced with drywall. Photo: Landmarks Design Associates.



If a new drywall surface needs to be applied, care should be taken that the historic relationship of wall to trim is not lost. Also, if there are significant features, such as crown moldings or ceiling medallions, they should always be retained and repaired (see fig. 26).

Figure 26. Deteriorated ceiling plaster was removed and a new drywall ceiling installed. The historic ceiling medallion was preserved, and the plaster cornices repaired in place. Photo: Landmarks Design Associates.

Maintenance after Hazard Control Treatment

Following treatment, particularly where interim controls have been used, ongoing maintenance and re-evaluation become critical. In urban areas, even fully lead-safe houses can be re-contaminated within a year from lead or dirt outside the immediate property. Thus, housing interiors must be kept clean, once lead hazard control measures have been implemented. Dust levels should be kept down by wet sweeping porch steps and entrances on a regular basis. Vacuum cleaning and dusting should be repeated inside on a weekly basis or even more often. Vinyl, tile, and wood floor surfaces should be similarly damp mopped. Damp washing of window troughs and sills to remove new dust should be encouraged several times a year, particularly in the spring and fall when windows will be open. Carpets and area rugs should be steam cleaned or washed periodically if they appear to hold outside dirt.

Housing should be inspected frequently for signs of deterioration by both owner and occupant. Tenants need to be made aware of the location of lead-based paint under lead-free top coats and instructed to contact the owners or property managers when the paint film becomes disturbed (see figure 27). Any leaks, peeling paint, or evidence of conditions that may generate lead-dust should be identified and corrected immediately. Occupants must be notified prior to any major dust-producing project. Dry sanding, burning, compressed air cleaning or blasting should be not be used. Repairs, repainting, or remodeling activities that have the potential of raising significant amounts of lead dust should be undertaken in ways that isolate the area, reduce lead-laden dust as much as possible, and protect the occupants.

Yearly dust wipe tests are recommended to ensure that dust levels remain below actionable levels. Houses or dwelling units that fail the dust-wipe test should be thoroughly re-cleaned with TSP, or its equivalent, washed down, wet vacuumed and followed by HEPA vacuuming, if necessary, until a clearance dust wipe test shows the area to be under actionable levels (see Action Levels chart). Spaces that are thoroughly cleaned and maintained in good condition are not a health risk (see fig. 28).

Figure 27. Wall leaks can cause historic surfaces to deteriorate, thereby exposing underlayers of lead-based paint. If painted surfaces show signs of deterioration, they should be repaired as soon as possible.

Figure 28. This recently completed housing, which is now lead-safe, could become re-contaminated from lead if safe conditions are not maintained. Damp mopping floor surfaces and regular dusting to keep the house clean will ensure its continuing safety.

Conclusion

The three-step planning process outlined in this Brief provides owners and managers of historic housing with responsible methods for protecting historic paint layers and architectural elements, such as windows, trimwork, and decorative finishes. Exposed decorative finishes, such as painted murals or grained doors can be stabilized by a paint conservator without destroying their significance.

Reducing and controlling lead hazards can be successfully accomplished without destroying the character-defining features and finishes of historic buildings. Federal and state laws generally support the reasonable control of lead-based paint hazards through a variety of treatments, ranging from modified maintenance to selective substrate removal. The key to protecting children, workers, and the environment is to be informed about the hazards of lead, to control exposure to lead dust and lead in soil, and to follow existing regulations. In all cases, methods that control lead hazards should be selected that minimize the impact to historic resources while ensuring that housing is lead-safe for children.

LEAD-BASED PAINT LEGISLATION

Federal Legislation: **Title X (Ten) Residential Lead-Based Paint Hazard Reductions Act of 1992.** Title X is part of Housing and Urban Development (HUD) Housing and Community Development Act of 1992 (Public Law 102-550). Title X calls for the reduction of lead in housing that is *federally supported* and outlines the federal responsibility towards its own residential units and the need for disclosure of lead in residences, even private residences, prior to sale.

Interim Final Regulations of Lead in Construction Standards (29 CFR 1926.62). Issued by the Department of Labor, Occupational Safety and Health Administration (OSHA), these regulations address worker safety, training, and protective measures. It is based in part on environmental air sampling to determine the amount of lead dust generated by various activities.

Lead: Identification of Dangerous Levels of Lead; Final Rule (Environmental Protection Agency (EPA) 40 CFR Part 745). This regulation supports the efforts of Title X to reduce and prevent lead poisoning in children under the age of six. This rule issues uniform national standards for lead paint hazards. EPA Regional Offices can provide guidance on the appropriate regulatory agency for states within their region. See www.epa.gov/lead.

State Laws: States generally have the authority to regulate the removal and transportation of lead-based paint and the generated waste for disposal through the appropriate state environmental and public health agencies. Most states have requirements for mitigation in the case of a lead-poisoned child, or for protection of children, or for oversight to ensure the safe handling and disposal of lead waste. When undertaking a lead-based paint reduction program, it is important to determine which laws are in place that may affect your project. Call the appropriate officials.

Local Ordinances: Check with local health departments, Poison Control Centers, and offices of housing and community development to determine if there are laws that require compliance with building owners. Some cities have their own rules, so check with your local authorities to see which laws apply to you or for assistance in finding firms licensed to handle lead-based paint projects.

Owner's Responsibility: Owners are ultimately responsible for ensuring that hazardous waste is properly disposed of when generated on site. Owners should check with the state or local authorities to determine requirements for proceeding with abatement or management of lead-based paint in either commercial or residential projects. Owners should establish that the contractor is responsible for the safety of the crew and that all applicable laws are followed, and that transporters and disposers of hazardous waste have liability insurance as a protection for the owner. If an interim treatment is being used to reduce lead hazards, the owner should notify the contractor that lead-based paint is present and that it is the contractor's responsibility to follow appropriate work practices to protect workers and complete a thorough clean-up to ensure that lead-laden dust is not present after the work is completed.

Glossary of Terms

Deteriorated Lead-Based Paint: Paint known to contain lead that shows signs of peeling, chipping, chalking, blistering, alligatoring or otherwise separating from its substrate.

Dust Removal: The process of removing dust to avoid creating a greater problem of spreading lead particles, usually through wet or damp collection or through the use of special HEPA vacuums.

Hazard Abatement: Long-term measures to remove the hazards of lead-based paint through selective paint stripping of deteriorated areas, or, in some cases, replacement of deteriorated features.

Hazard Control: Measures to reduce lead hazards to make housing safe for young children. Can be accomplished with interim (short-term) or hazard abatement (long-term) controls.

Interim Control: Short-term methods to remove lead dust, stabilize deteriorating surfaces, and repaint surfaces. Maintenance can ensure that housing remains lead-safe.

Lead-based Paint: Any existing paint, varnish, shellac, or other coating that is in excess of 1.0 mg/cm2 as measured by an XRF detector or greater than 0.5% by weight from laboratory analysis (5,000 ppm, 5,000 ug /g, or 5,000 mg/kg). For new products, the Consumer Safety Act notes 0.06% as the maximum amount of lead allowed in paint.

Lead-safe: The act of making a property safe from contamination by lead-based paint, lead-dust, and lead in soil generally through short and long-term methods to remove it, or to isolate it from small children.

Risk Assessment: An on-site investigation to determine the presence and condition of lead-based paint, including limited test samples, and an evaluation of the age, condition, housekeeping practivces, and uses of a residence.

Further Reading

Chase, Sara B. *Preservation Brief 28,* "Painting Historic Interiors." Washington, DC: U.S. Department of the Interior, National Park Service, 1992.

"Coping with Contamination: A Primer for Preservationists," *Information Booklet No. 70.* Washington, DC: National Trust for Historic Preservation, 1993.

Historic Buildings and the Lead Paint Hazard. Hartford, CT: Connecticut Historical Commission, 1990.

"Health Hazards in National Park Service Buildings," *NPS-76 Housing Design and Rehabilitation.* Washington, DC: U.S. Department of the Interior, National Park Service, 1995.

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing. Washington, DC: U.S. Department of Housing and Urban Development, 1995.

Jandl, H. Ward. *Preservation Brief 18:* "Rehabilitating Historic Interiors – Identifying and Preserving Character-Defining Elements." Washington, DC: U.S. Department of the Interior, National Park Service, 1988.

Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work. HUD, EPA. CDC. HUD Office of Lead Hazard Control, HUD-1779-LHC, June, 1999; available in pdf format at www.hud.gov/offices/lead/

MacDonald, Marylee. "Getting Rid of Lead," *Old House Journal,* July/August. 1992.

Myers, John H. *Preservation Brief 9,* "Repair of Historic Wooden Windows." Washington, DC: U.S. Department of the Interior, National Park Service, 1981.

OSHA Lead in Construction Standard (29 CFR 1926.62), Occupational Safety and Health Administration, May 4, 1993 (Federal Register).

Park, Sharon C. and Camille Martone. "Lead-Based Paint in Historic Buildings," *CRM Bulletin.* Washington, DC: U.S. Department of the Interior, National Park Service. Vol. 13, No.1, 1990.

Park, Sharon C. "Managing Lead in Building Interiors: An Emerging Approach," *Interiors Handbook for Historic Buildings, Vol. II.* Washington, DC: U.S. Department of the Interior, National Park Service and Historic Preservation Education Foundation, 1993.

Park, Sharon C. "What to do about Lead-Based Paint," *CRM Bulletin.* Washington, DC: U.S. Department of the Interior, National Park Service. Vol. 17, No.4, 1994.

The Secretary of the Interior's Standards for the Treatment of Historic Properties. Washington, DC: U.S. Department of the Interior, National Park Service, 1992.

Title X (Residential Lead-Based Paint Hazard Reduction Act of 1992) of Housing and Community Development Act of 1992 (P.L. 102-550), October 28, 1992.

Weeks, Kay D. and David Look, AIA. *Preservation Brief 10,* "Exterior Paint Problems on Historic Woodwork." Washington, DC: U.S. Department of the Interior, National Park Service, 1982.

Photographs courtesy of the authors unless identified.

Front cover:
Most residences painted prior to 1978 will contain some lead-based paint. It was widely used on exterior woodwork, siding, and windows as well as interior finishes. This apartment stairhall retains its historic character after a successful rehabilitation project that included work to control lead-based paint hazards. Photo: Crispus Attucks Community Development Corporation.

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