

CITY OF ANN ARBOR
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December 6, 2018

City of Ann Arbor
Building Board of Appeals
301. E. Huron St., First Floor
Ann Arbor, MI 48107

VIA HAND DELIVERY

Re: Request for VARIANCE Relating to Plumbing Permit PLUM14-1848 issued for the rehabilitation of the sewer line at 1625 Waltham Drive, Ann Arbor, MI 48103.

Peter J. Wood ("Mr. Wood"), by and through his attorney, requests a variance pursuant to MCL 125.1515, and in support states as follows:

BACKGROUND

1. The sewer line at 1625 Waltham Drive needed to be rehabilitated. In 2014, the homeowner hired Mr. Wood and his company RooterMD to improve the failing sewer line by installing what is known as "cured-in-place-piping or CIPP." The installation was completed on or about December 4, 2014.

2. On March 6, 2018 a notice was issued by Ann Arbor Code Official Ryan Miller ("Mr. Miller"). The notice indicates that an inspection was completed on October 30, 2017. The inspection was not approved. Mr. Miller contends that there is a violation of the 2009 Michigan Residential Code P3005.3 ("P3005.3). Please refer to Exhibit 1 for the notice and related documents. The video inspected is accessible at: https://youtu.be/3rRgabN_UMM The video of the sewer prior to CIPP installation is accessible at: <https://youtu.be/O1uJB-S51A>

3. P3005.3 provides:

Horizontal drainage piping slope. Horizontal drainage piping shall be installed in uniform alignment at uniform slopes not less than 1/4 unit vertical in 12 units horizontal (2-percent slope) for 2 1/2 inch (64 mm) diameter and less, and not less than 1/8 unit vertical in 12 units horizontal (1-percent slope) for diameters of 3

inches (76 mm) or more.

4. Mr. Miller cites as evidence that there is a “belly in liner from 81- to 56’ (pipe holding water).”

5. On November 15, 2018 this Board heard an appeal from Mr. Wood, wherein he requested that the Board reverse the City’s decision. The Board rejected Mr. Wood’s appeal, holding that there was in fact a technical violation of P3005.3 and affirming the City’s March 6, 2018 decision.

6. During that hearing several Board members proposed the idea of a “variance” and even discussed the substantive code sections that could apply (e.g. Appendix J). The City took the position that Mr. Wood was not seeking a variance, only an appeal. In the end, the Board did not formally consider a variance request at the hearing.

7. Mr. Wood now desires that the Board formally consider a variance request as permitted by the Construction Code Act, specifically:

125.1515 Specific variance from code; requirements; breach of condition; permissible variance.

Sec. 15. (1) After a public hearing a board of appeals may grant a specific variance to a substantive requirement of the code **if the literal application of the substantive requirement would result in an exceptional, practical difficulty to the applicant**, and if both of the following requirements are satisfied:

(a) The performance of the particular item or part of the building or structure with respect to which the variance is granted shall be adequate for its intended use and shall not substantially deviate from performance required by the code of that particular item or part for the health, safety and welfare of the people of this state.

(b) The specific condition justifying the variance shall be neither so general nor recurrent in nature as to make an amendment of the code with respect to the condition reasonably practical or desirable.

(2) A board of appeals may attach in writing any condition in connection with the granting of a variance that in its judgment is necessary to protect the health, safety and welfare of the people of this state. The breach of a condition shall automatically invalidate the variance and any permit, license and certificate granted on the basis of it. In no case shall more than minimum

variance from the code be granted than is necessary to alleviate the exceptional, practical difficulty.

WHY A VARIANCE IS PERMISSIBLE

8. This is a classic case for a variance. As explained in great detail during the November 15, 2018 appeal hearing the “literal application of the substantive requirement [P3005.3) [will] result in an exceptional, practical difficulty to the applicant [Mr. Wood].” The exceptional difficulty can be simplified as follows: Digging up 25 feet of sewer line (that the homeowner has no complaints about) is extremely expensive and difficult. In fact, Mr. Wood estimates that it will cost in excess of \$15,000 to dig up and replace the allegedly non-compliant line. For comparison, the homeowner paid approximately \$5,300 for the 2014 repair. The \$15,000 does not account for the disturbance to the homeowner’s yard, which we know she wanted to avoid because she chose a trenchless option.

9. **The Board should also be aware that, contractually speaking, the cost of such dig-up and replacement is ultimately the responsibility of the homeowner. In this case, Ms. Brooks agreed to pay for unexpected work and contingencies not specifically listed in the contract.** This adds additional “exceptional, practical difficulty” to Mr. Wood for obvious reasons. He would rather not have to charge his satisfied customer for work that that the customer does not consider necessary. It is expected that Ms. Brooks will challenge any decision to complete repairs at her expense that we all know are not necessary.

10. The City is concerned about sewer backups. However, there has not be a single sewer backup since the line was rehabilitated. The CIPP liner in this case was installed in 2014 and has been working without fault. The homeowner, Ms. Dorothy Brooks, is fully satisfied with the work. See Exhibit 2.

The Elements of MCL 125.1515 Are Met So A Variance Is Justified

11. Since Mr. Wood has demonstrated that the “literal application of the substantive requirement [P3005.3) [will] result in an exceptional, practical difficulty to him, he is entitled to a variance if two additional requirements are met. The first requirement is MCL 125.1515(1)(a):

(a) The performance of the particular item or part of the building or structure with respect to which the variance is granted shall be adequate for its intended use and shall not substantially deviate from performance required by the code of that particular item or part for the health, safety and welfare of the people of this state.

The evidence is ample that (1)(a) is met.

First, “adequate for its intended use.” Ms. Brooks has been using the repaired sewer line for 4 years without issue. She is satisfied with the performance and has no complaints. See Exhibit 2. We also know that the City has previously taken the position that “dips” such as the one complained of in this case are acceptable (see Trinity Lutheran Church installation, for example.) While we understand the City’s position to now be that SOP-501 does not apply, the fact that it did apply at one point in time suggests that even the City believes that a sewer line that does not perfectly comply with P3005.3 is adequate for its intended use.

Second, “shall not **substantially** deviate from performance required by the code of that particular item or part for the health, safety and welfare of the people of this state.” Again, the performance has been completely satisfactory. The key term here is “substantially.” There is no evidence that there is a performance problem with the sewer, much less a substantial performance issue. The sewer is performing in normal course and does not pose any threat to the health, safety and welfare of Ms. Brooks, her guests, her neighbors or the general public. The product has a State of Michigan Certificate of Acceptability (Exhibit 3) and comes with a 10 year warranty (Exhibit 3).

12. The second requirement [(1)(b)] that must be met is:

(b) The specific condition justifying the variance shall be neither so general nor recurrent in nature as to make an amendment of the code with respect to the condition reasonably practical or desirable.

13. Mr. Wood is not pursuing this variance to affect a general change to the code. While it is expected that he will seek variances in the other cases, he certainly does not expect to require a variance in every case in which he installs a CIPP liner. Going forward it is Mr. Wood’s intention to obtain preapproval from the City prior to completing any CIPP installation.

Though Not Required for This Variance Request, The City Could Approve the Permit Under Appendix J or R104 of the Michigan Residential Code

14. Though not necessary for the Board to grant a variance request under MCL 125.1515, anecdotally we want to point out that the City could approve the permit under Section 104 or Appendix J of the Residential Code. For reasons that we do not understand, it has decided against doing so. First, Section 104:

R104.10 Modifications. Where there are practical difficulties involved in carrying out the provisions of this code, the *building official* shall have the authority to grant modifications for individual cases, provided the *building official* shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, life and fire safety or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the department of building safety.

15. The justifications for applying this section are similar to those that support a variance. The point is that Mr. Miller and the City have the authority to exercise their discretion and allow technical non-compliance with P3005.3 in this case.

16. Section 104.11 provides relief as well:

R104.11 Alternative materials, design and methods of construction and equipment. The provisions of the code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by the code, if the alternative has been approved. An alternative material, design, or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of the code, and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed in the code. Compliance with the specific performance-based provisions of the Michigan building, R 408.30401 to R 408.30547, electrical, R 408.30801 to R 408.30880, mechanical, R 408.30901

to R 408.30998, and plumbing, R 408.30701 to R 408.30796, codes instead of specific requirements of the code shall also be permitted as an alternate.

R 408.30504

17. Finally, Appendix J to the Michigan Residential Code provides an avenue to approve this permit as well. The pertinent sections are included below:

**SECTION AJ101
PURPOSE AND INTENT**

AJ101.1 General. The purpose of these provisions is to encourage the continued use or reuse of legally existing buildings and structures. These provisions are intended to permit work in existing buildings that is consistent with the purpose of this code. Compliance with these provisions shall be deemed to meet the requirements of this code.

**SECTION AJ102
COMPLIANCE**

AJ102.1 General. Regardless of the category of work being performed, the work shall not cause the structure to become unsafe or adversely affect the performance of the building; shall not cause an existing mechanical or plumbing system to become unsafe, hazardous, insanitary or overloaded; and unless expressly permitted by these provisions, shall not make the building any less compliant with this code or to any previously *approved* alternative arrangements than it was before the work was undertaken.

18. There is no dispute that Mr. Wood and his company rehabilitated an existing sewer line that at the time was legally existing. There is also no dispute that the sewer line is now in better shape and sealed such that no sewage can leak into Ms. Brooks' yard. While we agree that the new liner conformed with the existing sewer line, the liner has not made the sewer less compliant since it was compliant to begin with. Mr. Wood made no changes to the slope, he simply lined to the existing contours. Further, and most important, the work completed has not "caused an existing mechanical or plumbing system to become unsafe, hazardous, insanitary or overloaded."

19. Appendix J "encourages the continued use or reuse of legally existing buildings and

structures.” That is exactly what is at play here. The homeowner wanted to repair but not completely replace the sewer line. Appendix J allowed her to do this. We cannot understand, in the face of the heavy evidence that the sewer line has been working properly for the past 4 years, why the City cannot approve the permit. See Exhibit 4.

CONCLUSION

20. Mr. Miller has issued a notice for “Failure to comply with 3005.3”. For the reasons set forth above, Mr. Wood requests that the Building Board of Appeals grant a variance and issue the following relief:

- a. A holding that Mr. Wood is not required to comply P3005.3 in the case of PLUM14-1848 ONLY.

Very truly yours,

HOOPER HATHAWAY, P.C



Oscar A. Rodriguez

EXHIBIT 1



CITY OF ANN ARBOR, MICHIGAN

Community Services Area
Planning & Development Services Unit
301 East Huron St., P.O. Box 8647,
Ann Arbor, Michigan 48107-8647
Phone: (734) 794-6267
Fax: (734) 994-8460
www.a2gov.org

March 6, 2018

Rooter MD att:

Peter Wood
31675 W Eight Mile
Livonia, MI 48152

Re: 1625 Waltham Drive, Ann Arbor, MI 48103 - PLUM14-1848

Mr. Peter Wood:

On December 7, 2017 you were notified and given 45 days to correct the conditions found with the installation of Cured in Place Pipe Liner at 1625 Waltham. You have not complied and the required corrections have not been made. By March 16, 2018 you shall schedule an on-site inspection, which you can do by phone during regular business hours at 734.794.6263 (select option 1) or through eTrakit (eTrakit.a2gov.org). If you By March 16, 2018, you use eTrakit, you must enter your request into eTrakit no later than 2:30 p.m. if you are requesting an inspection for the next day.

Failure to comply with the requirements of this letter by March 16, 2018 will result in the issuance of a ticket to initiate legal proceedings against you.

Final inspection for *Cured in Place Pipe* installation was conducted on permit PLUM14-1848, Monday 10/30/2017. The inspection was not approved.

The following conditions were found to exist at 1625 Waltham, Ann Arbor, MI 48103:

- 1) Belly in liner from 81' to 56' (pipe holding water)

This condition is in violation of 2009 Michigan Residential code P3005.3 Please consider this a formal violation notice.

The video supplied by Rooter MD shows a large belly in the pipe. Solids collect in the belly and can cause future sewage back up inside of the house.

P3005.3 Horizontal drainage piping slope. Horizontal

drainage piping shall be installed in uniform alignment at uniform slopes not less than 1/4 unit vertical in 12 units horizontal (2-percent slope) for 2 1/2 inch (64 mm) diameter and less, and not less than 1/8 unit vertical in 12 units horizontal (1-percent slope) for diameters of 3 inches (76 mm) or more.

If you have any questions, please contact us at 734.794.6263 (select option 1) between 8:00 a.m. and 4:00 p.m., Monday through Friday.

Sincerely,

Ryan Miller
Code Official
City of Ann Arbor
rmiller@a2gov.org

cc: Glen Dempsey, Building Official
Kristen D. Larcom, Senior Assistant City Attorney
Dorothy Brooks (homeowner per Assessor's records)

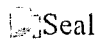
NOTE: You have the right to appeal this decision. If you believed the CIPP Building Sewer is properly installed and feel The City of Ann Arbor interpretation of 2009 Michigan Residential Code is incorrect, you may apply to The City of Ann Arbor Building Board of Appeals. The appeal for this address must be submitted by March 16, 2018

06/21/2018
8:28 PM

Permit No.	PLUM14-1848	Permit Type	PLUMBING	Site Address	1625 WALTHAM DR Ann Arbor, MI 48103
Applied	11/21/2014	Applicant	Rooter MD Plbg LLC		
Approved	11/21/2014	Owner	BROOKS DOROTHY		
Issued	11/21/2014	Contractor	Rooter MD Plbg LLC		
Parent Permit No.		Description	85' of 4" CIP Liner from Clean out o Within 1' of Main		
		Notes			

Date of Inspection	Inspection Type	Inspector	Result	Remarks	Notes
10/31/2017	PLM UNDERGROUND	MILLER RYAN	FAILED	No charge inspection	(10/31/2017 7:26 AM RMIL) - CIPP Holding water 81'-56' Repair required

PERMIT NO: PLUM14-1848 ON-LINE PERMIT

ANN ARBOR 301 E. Huron St., MI 48104 INSPECTION REQUEST LINE 734.794.6263 OR SCHEDULE EXISTING INSPECTION ON-LINE http://etrakit.a2gov.org	PERMIT TYPE PLUMBING	APPLIED DATE 11/21/2014	
	PERMIT SUB-TYPE PLUMBING	APPROVED DATE 11/21/2014	
	JOB VALUE 0 APN 09-09-31-306-036	ISSUED DATE 11/21/2014	
	DESCRIPTION 85' of 4" CIP Liner from Clean out o Within 1' of Main		

PERMIT INFORMATION		FEE SUMMARY	
SITE	1625 WALTHAM DR Ann Arbor, MI 48103	PLUMBING PERMIT FEES	\$100.00
APPLICANT	Rooter MD Plbg LLC 31675 W. Eight Mile Road Livonia MI 48152	Total Fees Collected:	\$100.00
OWNER	BROOKS DOROTHY 1625 WALTHAM DR Ann Arbor MI 48103		
CONTRACTOR	Rooter MD Plbg LLC 31675 W. Eight Mile Road Livonia MI 48152		

NOTE: This job copy of this permit shall be kept on the job site to make the required entries thereon. The permit will expire if work is not started in 180 days, is abandoned, or does not receive an inspection for more than 180 days. Additional fees will be collected to renew expired permits. This is a Building Permit when properly filed out, signed and validated, and is not transferable. Construction Hour: Construction is limited to the hours of 7:00am to 7:00pm each day. No work shall be performed on certain holidays (MMC V-213-3(b)).

<p align="center">LICENSED CONTRACTORS DECLARATION</p> <p>I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.</p> <p>License No. _____ Expiration Date: _____ Contractor: _____</p> <p align="center">OWNER-BUILDER DECLARATION</p> <p>I hereby affirm under penalty of perjury that I am exempt from the contractors license Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by an applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500):</p> <p>_____, I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner or property who builds or improves thereon, and who does such work himself or herself or through his or her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he or she did not build or improve for the purpose of sale.)</p> <p>_____, I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner or Property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law.)</p> <p>I am exempt under Sec. _____ B.P.C. for this reason _____</p> <p>DATE _____ OWNER _____</p> <p align="center">WORKERS COMPENSATION DECLARATION</p> <p>I hereby affirm under penalty of perjury one of the following declarations:</p> <p>_____, I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the permit is issued.</p> <p>_____, I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:</p> <p>Carrier/Policy No: _____</p> <p>(This section need not be completed if the permit is for one hundred dollars (\$100) or less).</p> <p>_____, I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any number so as to become subject to the workers' compensation laws or California, and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.</p> <p>DATE _____ APPLICANT: _____</p> <p>WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000), IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.</p> <p align="center">CONSTRUCTION LENDING AGENCY</p> <p>I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)</p> <p>DATE _____ APPLICANT: _____</p> <p>I certify that I have read this application and state that the above information is correct. I agree to comply with all city ordinances and state laws relating to building construction, and hereby authorize representatives of this city to enter upon the above-mentioned property for inspection purposes.</p> <p>SIGNATURE OF APPLICANT OR AGENT : _____ DATE _____</p>	<p align="center">INSPECTION SUMMARY</p> <p align="center">_____ PLM UNDERGROUND</p>
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Permit Finaled Date: _____ Inspector Name: _____ Signature: _____

EXHIBIT 2

Name Dorothy Brooks
Street Address 1625 Waltham DR.
City, State, Zip Ann Arbor, MI 48103

The following work was completed by Rooter MD Plumbing, LLC installed
liner (cipp) in sewer from house to city main

At (address work was completed) 12-04-14 - 1625 Waltham DR
Ann Arbor MI 48103

On (completion date) 12-04-14

Please ~~write yes or no~~ **CHECK BOX IF TRUE**

Since the completion of the work, no further work as been required, and there have been no Problems

djb I am 100% satisfied with the work completed by Rooter MD Plumbing, LLC

I appreciate that Rooter MD Plumbing extended the usual 10 year warranty an extra 2 years, giving us a 12 year warranty

Signed Dorothy J. Brooks
Name (Printed) Dorothy J. Brooks
Date 11/8/18

KAREN DAVENPORT
NOTARY PUBLIC
STATE OF MICHIGAN
COUNTY OF WAYNE
MY COMMISSION EXPIRES 11/27/23
ACTING IN THE COUNTY OF Washtenaw
DATE 11-8-18

Notary:
Subscribed and sworn/affirmed to by Dorothy Brooks before me on the
8 day of November, 2018
Signature Karen Davenport
Printed name Karen Davenport
Notary public, State of Michigan, County of Wayne
My Commission expires 11/27/2023
Acting in the county of Washtenaw

EXHIBIT 3



31675 W Eight Mile Road - Livonia, MI 48152
248) 888 7777 (248) 688 7786 fax

TEN YEAR WARRANTY

The undersigned Rooter MD Pipe Lining Contractor ("the contractor" herein) provides a 10-year warranty from the date of Substantial Completion for the Work that such piping systems restored by Contractor will be free of failure as a result of defects in material or workmanship with the following provisions:

- a) Under normal use, the epoxy lining shall not de-bond, break down or otherwise flake off. Contractor does not warrant against failure caused by, contributed in whole or in part by, or resulting from any of the following: abuse, such as, without limitation, vandalism; the introduction into the piping system of any chemical that would not be permitted in potable water, or chemicals approved for potable water at concentrations higher than approved for potable water; operating the water system at temperatures greater than the domestic hot standard; natural disasters or causes, such as, without limitation, flooding, windstorm, lightning, tornado, or earthquake; attachments to or modifications of the piping system not authorized by Contractor; external causes, where external, physical or chemical qualities produce damage to the epoxy lining such as, without limitation, an unsuitable or hostile environment including the use of a flame or torch on the epoxy lining; or another cause beyond the Contractor's control including other stresses placed on the pipe or its contents that are not considered normal to the original intended use or function of the piping system.
- b) Should the restored piping system be subjected to abuse, such as, without limitation, vandalism; the introduction into the piping system of any chemical that would not be permitted in potable water, or chemicals approved for potable water at concentrations higher than approved for potable water; operation of the water system at temperatures greater than the domestic hot standard; attachments to or modifications of the piping system not completed by methods authorized by Contractor; or other external causes including corrosion to the external surface of the piping that should result in leaks, or where external, physical or chemical qualities produce damage to the epoxy lining such as, without limitation, an unsuitable or hostile environment including the use of a flame or torch on the epoxy lining; or any other cause beyond the Contractor's control including other stresses placed on the pipe or its contents that are not considered normal to the original intended use or function of the piping system, this warranty will become immediately null and void with respect to such affected piping.
- c) The Contractor shall not be liable under any circumstances for any other direct or any indirect, general, special, incidental or consequential damages of any kind from whatever cause except to repair or replace the affected piping as provided herein.

As long as such failure occurs during the warranty period and the Owner notifies Contractor in writing within five (5) business days of Owner's discover of the failure of the treated piping system through the notice provisions provided in the Contract Documents, and Contractor is permitted the opportunity to inspect the defect, Contractor will correct the failure by repairing or replacing the affected piping within a reasonable time, without charge to the Owner. This warranty is limited to the cost of repairing or replacing the affected piping, including installation or additional treatments, and specially excluded any costs of repair associated with ancillary damage. Failure to provide Contractor such notice and opportunity to inspect such affected piping will terminate this warranty. Should Contractor be called to the property for problems unrelated to matters for which this warranty applies, Owner will be charged a minimum four (4) hour call out fee at rates predominant in the local market.

It is expressly understood and agreed that Contractor shall in no way be deemed or held to be obligated, liable or accountable upon or under any guarantees or warranties, expressed or implied beyond this express warranty. This warranty is the only warrant for the pipe restoration provided by the Contractor, and is and shall be in lieu of any and all other warranties, express or implied, including but not limited to an implied warranty of merchantability, or fitness for a particular use and of all other obligations or liabilities on the part of the Contractor. None of the Contractor's employees, and no other person or business, is authorized to make any other warranty on the Contractor's behalf covering the Work.

This warranty is transferable to a new owner of the property for a \$200.00 administrative fee payable to Contractor at the closing of the property transaction, and is otherwise non-transferable. This warranty gives Owner specific legal rights, and Owner may also have other rights that may vary from state to state. Some states do not allow the exclusion of limitation of incidental or consequential damages, and as a result may not apply to Owner.

All new valves and accessories installed as part of the work shall be covered by the manufacturers warranty(s) only for the period of such warranty(s). The Contractor shall turn over all manufacturers equipment warranties to the Owner upon completion and final sign-off of the work. Owner shall contact those manufacturers specifically regarding any claims thereto. The Contractor shall warrant the installation of such valves and accessories installed as part of the work for one year after final sign-off the work.

Date of Substantial Completion

Authorized Signature



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
LANSING

SHELLY EDGERTON
DIRECTOR

CERTIFICATE of ACCEPTABILITY of PRODUCT

THIS ACKNOWLEDGES THAT

Performance Liner

Manufacturer Designation:

LMK Technologies
1779 Chessie Lane
Ottawa, IL 61350

Is acceptable for use in the State of Michigan and deemed adequate for its intended use and consistent with reasonable requirements for the health, safety and welfare of the people of this state.

Your Petition Application for Certificate of Acceptability was approved at the October 11, 2017 Construction Code Commission meeting in accordance with the authority granted under 1972 P.A. 230, MCL 125.1521. The product was reviewed in accordance with the 2015 Michigan Plumbing Code.

THIS CERTIFICATE SHALL NOT BE USED FOR ADVERTISING PURPOSES.

Product Approval Number: 1666-PA

Effective Date: October 11, 2017

EXHIBIT 4

PART 2--ADMINISTRATION AND ENFORCEMENT

SECTION R103
DEPARTMENT OF BUILDING SAFETY

R103.1 Creation of enforcement agency. The department of building safety is hereby created and the official in charge thereof shall be known as the building official.

*

SECTION R104
DUTIES AND POWERS OF THE BUILDING OFFICIAL

R104.1 General. The building official is hereby authorized and directed to enforce the provisions of this code. The building official shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies and procedures shall be in conformance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

R104.2 Applications and permits. The building official shall receive applications, review construction documents and issue permits for the erection and alteration of buildings and structures, inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code.

R104.3 Notices and orders. The building official shall issue necessary notices or orders to ensure compliance with this code.

R104.4 Inspections. The building official shall make the required inspections, or the building official shall have the authority to accept reports of inspection by approved agencies or individuals. Reports of such inspections shall be in writing and be certified by a responsible officer of such approved agency or by the responsible individual. The building official is authorized to engage such expert opinion as deemed necessary to report upon unusual technical issues that arise, subject to the approval of the appointing authority.

R104.5 Identification. The building official shall carry proper identification when inspecting structures or premises in the performance of duties under this code.

R104.6 Right of entry. In the discharge of duties, the code official may enter any building, structure, or premises in the jurisdiction to enforce the provisions of the act and the code.

R 408.30504

R104.7 Department records. The building official shall keep official records of applications received, permits and certificates issued, fees collected, reports of inspections, and notices and orders issued. Such records shall be retained in the official records for the period required for the retention of public records.

*

R104.9 Approved materials and equipment. Materials, equipment, and devices shall be constructed or installed in accordance with approvals granted under the act or by the building official. The building official shall review reports

prepared by recognized evaluation services and determine if the intent of the code is met.

R 408.30503

R104.9.1 Used materials and equipment. Used materials, equipment and devices shall not be reused unless approved by the building official.

R104.10 Modifications. Where there are practical difficulties involved in carrying out the provisions of this code, the building official shall have the authority to grant modifications for individual cases, provided the building official shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, life and fire safety or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the department of building safety.

R104.10.1 Flood hazard areas. The building official shall not grant modifications to any provisions required in flood hazard areas as established by Table R301.2(1) unless a determination has been made that:

- 1. There is good and sufficient cause showing that the unique characteristics of the size, configuration or topography of the site render the elevation standards of Section R322 inappropriate.
2. Failure to grant the modification would result in exceptional hardship by rendering the lot undevelopable.
3. The granting of modification will not result in increased flood heights, additional threats to public safety, extraordinary public expense, cause fraud on or victimization of the public, or conflict with existing laws or ordinances.
4. The modification is the minimum necessary to afford relief, considering the flood hazard.
5. Written notice specifying the difference between the design flood elevation and the elevation to which the building is to be built, stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation and stating that construction below the design flood elevation increases risks to life and property, has been submitted to the applicant.

R104.11 Alternative materials, design and methods of construction and equipment. The provisions of the code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by the code, if the alternative has been approved. An alternative material, design, or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of the code, and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed in the code. Compliance with the specific performance-based provisions of the Michigan building, R 408.30401 to R 408.30547, electrical, R 408.30801 to R 408.30880, mechanical, R 408.30901

to R 408.30998, and plumbing, R 408.30701 to R 408.30796, codes instead of specific requirements of the code shall also be permitted as an alternate.

R 408.30504

R104.11.1 Tests. Where there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the *building official* shall have the authority to require tests as evidence of compliance to be made at no expense to the *jurisdiction*. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the *building official* shall approve the testing procedures. Tests shall be performed by an *approved agency*. Reports of such tests shall be retained by the *building official* for the period required for retention of public records.

SECTION R105 PERMITS

R105.1 Required. Any owner or owner's authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the *building official* and obtain the required *permit*.

R105.2 Work exempt from permit. Exemption from the permit requirements of the code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of the code or any other laws or ordinances of this jurisdiction. Permits are not required for any of the following:

- (a) Building permits shall not be required for any of the following:
 - (i) One-story detached accessory structures, if the floor area does not exceed 200 square feet (18.58 m²).
 - (ii) A fence that is not more than 7 feet (2134 mm) high.
 - (iii) A retaining wall that is not more than 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge.
 - (iv) A water tank supported directly upon grade if the capacity is not more than 5,000 gallons (18 927 L) and the ratio of height to diameter or width is not greater than 2 to 1.
 - (v) A sidewalk and driveway not more than 30 inches (762 mm) above adjacent grade and not over any basement or story below and are not part of an accessible route.

- (vi) Painting, papering, tiling, carpeting, cabinets, counter tops, and similar finish work.

- (vii) A prefabricated swimming pool that is less than 24 inches (610 mm) deep, and not greater than 5,000 gallons (18 927 L), and is installed entirely above ground.

- (viii) Swings and other playground equipment accessory to detached 1- or 2-family dwellings.

- (ix) Window awnings in group R-3 and U occupancies, supported by an exterior wall that do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support, as applicable in Section 101.2 and group U occupancies.

- (x) Decks not exceeding 200 square feet (18.58 m²) in area, that are not more than 30 inches (762 mm) above grade at any point as prescribed by Section R312.1.1, are not attached to a dwelling or its accessory structures, are not within 36 inches (914 mm) of a dwelling or its accessory structures, and do not serve any ingress or egress door of the dwelling or its accessory structures.

- (b) Electrical permits shall not be required, as in accordance with the Michigan electrical code, R 408.30801 to R 408.30880, for any of the following:

- (i) Repairs and maintenance: Minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.

- (ii) Radio and television transmitting stations: The provisions of the code do not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for power supply and to the installation of towers and antennas.

- (iii) Temporary testing systems: A permit is not required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.

- (c) Mechanical permits shall not be required for any of the following:

- (i) A portable heating or gas appliance that has inputs of less than 30,000 BTU's per hour.

- (ii) Portable ventilation appliances and equipment.

- (iii) A portable cooling unit.

- (iv) Steam, hot water, or chilled water piping within any heating or cooling equipment or appliances regulated by this code.

- (v) Replacement of any minor part that does not alter the approval of equipment or an appliance or make such equipment or appliance unsafe.

- (vi) A portable evaporative cooler.

APPENDIX J

EXISTING BUILDINGS AND STRUCTURES

(The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.)

SECTION AJ101 PURPOSE AND INTENT

AJ101.1 General. The purpose of these provisions is to encourage the continued use or reuse of legally existing buildings and structures. These provisions are intended to permit work in existing buildings that is consistent with the purpose of this code. Compliance with these provisions shall be deemed to meet the requirements of this code.

AJ101.2 Classification of work. For purposes of this appendix, work in existing buildings shall be classified into the categories of repair, renovation, alteration and reconstruction. Specific requirements are established for each category of work in these provisions.

AJ101.3 Multiple categories of work. Work of more than one category shall be part of a single work project. Related work permitted within a 12-month period shall be considered to be a single work project. Where a project includes one category of work in one building area and another category of work in a separate and unrelated area of the building, each project area shall comply with the requirements of the respective category of work. Where a project with more than one category of work is performed in the same area or in related areas of the building, the project shall comply with the requirements of the more stringent category of work.

SECTION AJ102 COMPLIANCE

AJ102.1 General. Regardless of the category of work being performed, the work shall not cause the structure to become unsafe or adversely affect the performance of the building; shall not cause an existing mechanical or plumbing system to become unsafe, hazardous, insanitary or overloaded; and unless expressly permitted by these provisions, shall not make the building any less compliant with this code or to any previously approved alternative arrangements than it was before the work was undertaken.

AJ102.2 Requirements by category of work. Repairs shall conform to the requirements of Section AJ301. Renovations shall conform to the requirements of Section AJ401. Alterations shall conform to the requirements of Section AJ501 and the requirements for renovations. Reconstructions shall conform to the requirements of Section AJ601 and the requirements for alterations and renovations.

AJ102.3 Smoke detectors. Regardless of the category of work, smoke detectors shall be provided where required by Section R314.3.1.

AJ102.4.1 Energy efficiency. Replacement windows shall comply with the requirements of Chapter 11.

AJ102.4.2 Safety glazing. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of Section R308.

AJ102.4.3 Emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue openings, replacement windows shall be exempt from the maximum sill height requirements of Section R310.1 and the requirements of Sections R310.1.1, R310.1.2, R310.1.3 and R310.2 provided that the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
2. The replacement window is not part of a change of occupancy.
3. Window opening control devices complying with ASTM F2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.

AJ102.4.4 Window control devices. Where window fall prevention devices complying with ASTM F2090 are not provided, window opening control devices complying with ASTM F2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable.
2. The window replacement includes replacement of the sash and the frame.
3. The top of the sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor.
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere where the window is in its largest opened position.
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully

open, shall not reduce the minimum net clear opening area of the window unit.

AJ102.5 Flood hazard areas. Work performed in existing buildings located in a flood hazard area as established by Table R301.2(1) shall be subject to the provisions of Section R105.3.1.1.

AJ102.6 Equivalent alternatives. Work performed in accordance with the *International Existing Building Code* shall be deemed to comply with the provisions of this appendix. These provisions are not intended to prevent the use of any alternative material, alternative design or alternative method of construction not specifically prescribed herein, provided that any alternative has been deemed to be equivalent and its use authorized by the *building official*.

AJ102.7 Other alternatives. Where compliance with these provisions or with this code as required by these provisions is technically infeasible or would impose disproportionate costs because of construction or dimensional difficulties, the building official shall have the authority to accept alternatives. These alternatives include materials, design features and operational features.

AJ102.8 More restrictive requirements. Buildings or systems in compliance with the requirements of this code for new construction shall not be required to comply with any more restrictive requirement of these provisions.

AJ102.9 Features exceeding code requirements. Elements, components and systems of existing buildings with features that exceed the requirements of this code for new construction, and are not otherwise required as part of *approved* alternative arrangements or deemed by the *building official* to be required to balance other building elements not complying with this code for new construction, shall not be prevented by these provisions from being modified as long as they remain in compliance with the applicable requirements for new construction.

SECTION AJ103 PRELIMINARY MEETING

AJ103.1 General. If a building *permit* is required at the request of the prospective *permit* applicant, the *building official* or his or her designee shall meet with the prospective applicant to discuss plans for any proposed work under these provisions prior to the application for the *permit*. The purpose of this preliminary meeting is for the *building official* to gain an understanding of the prospective applicant's intentions for the proposed work, and to determine, together with the prospective applicant, the specific applicability of these provisions.

SECTION AJ104 EVALUATION OF AN EXISTING BUILDING

AJ104.1 General. The *building official* shall have the authority to require an existing building to be investigated and evaluated by a registered *design professional* in the case of proposed reconstruction of any portion of a building. The evaluation shall determine the existence of any potential non-

conformities to these provisions, and shall provide a basis for determining the impact of the proposed changes on the performance of the building. The evaluation shall use the following sources of information, as applicable:

1. Available documentation of the existing building.
 - 1.1. Field surveys.
 - 1.2. Tests (nondestructive and destructive).
 - 1.3. Laboratory analysis.

Exception: Detached one- or two-family dwellings that are not irregular buildings under Section R301.2.2.2.5 and are not undergoing an extensive reconstruction shall not be required to be evaluated.

SECTION AJ105 PERMIT

AJ105.1 Identification of work area. The work area shall be clearly identified on the *permits* issued under these provisions.

SECTION AJ201 DEFINITIONS

AJ201.1 General. For purposes of this appendix, the terms used are defined as follows.

ALTERATION. The reconfiguration of any space; the *addition* or elimination of any door or window; the reconfiguration or extension of any system; or the installation of any additional *equipment*.

CATEGORIES OF WORK. The nature and extent of construction work undertaken in an existing building. The categories of work covered in this appendix, listed in increasing order of stringency of requirements, are repair, renovation, *alteration* and reconstruction.

DANGEROUS. Where the stresses in any member; the condition of the building, or any of its components or elements or attachments; or other condition that results in an overload exceeding 150 percent of the stress allowed for the member or material in this code.

EQUIPMENT OR FIXTURE. Any plumbing, heating, electrical, ventilating, air-conditioning, refrigerating and fire protection *equipment*; and elevators, dumb waiters, boilers, pressure vessels, and other mechanical facilities or installations that are related to building services.

LOAD-BEARING ELEMENT. Any column, girder, beam, joist, truss, rafter, wall, floor or roof sheathing that supports any vertical load in addition to its own weight, or any lateral load.

MATERIALS AND METHODS REQUIREMENTS. Those requirements in this code that specify material standards; details of installation and connection; joints; penetrations; and continuity of any element, component or system in the building. The required quantity, fire resistance, flame spread, acoustic or thermal performance, or other performance attribute is specifically excluded from materials and methods requirements.

RECONSTRUCTION. The reconfiguration of a space that affects an exit, a renovation or *alteration* where the work area

is not permitted to be occupied because existing means-of-egress and fire protection systems, or their equivalent, are not in place or continuously maintained; or there are extensive *alterations* as defined in Section AJ501.3.

REHABILITATION. Any repair, renovation, *alteration* or reconstruction work undertaken in an existing building.

RENOVATION. The change, strengthening or *addition* of load-bearing elements; or the refinishing, replacement, bracing, strengthening, upgrading or extensive repair of existing materials, elements, components, *equipment* or fixtures. Renovation does not involve reconfiguration of spaces. Interior and exterior painting are not considered refinishing for purposes of this definition, and are not renovation.

REPAIR. The patching, restoration or minor replacement of materials, elements, components, *equipment* or fixtures for the purposes of maintaining those materials, elements, components, *equipment* or fixtures in good or sound condition.

WORK AREA. That portion of a building affected by any renovation, *alteration* or reconstruction work as initially intended by the owner and indicated as such in the *permit*. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed, and portions of the building where work not initially intended by the owner is specifically required by these provisions for a renovation, *alteration* or reconstruction.

SECTION AJ301 REPAIRS

AJ301.1 Materials. Except as otherwise required herein, work shall be done using like materials or materials permitted by this code for new construction.

AJ301.1.1 Hazardous materials. Hazardous materials no longer permitted, such as asbestos and lead-based paint, shall not be used.

AJ301.1.2 Plumbing materials and supplies. The following plumbing materials and supplies shall not be used:

1. All-purpose solvent cement, unless *listed* for the specific application.
2. Flexible traps and tailpieces, unless *listed* for the specific application.
3. Solder having more than 0.2 percent lead in the repair of potable water systems.

AJ301.2 Water closets. Where any water closet is replaced with a newly manufactured water closet, the replacement water closet shall comply with the requirements of Section P2903.2.

AJ301.3 Electrical. Repair or replacement of existing electrical wiring and *equipment* undergoing repair with like material shall be permitted.

Exceptions:

1. Replacement of electrical receptacles shall comply with the requirements of Chapters 34 through 43.
2. Plug fuses of the Edison-base type shall be used for replacements only where there is not evidence of

overfusing or tampering in accordance with the applicable requirements of Chapters 34 through 43.

3. For replacement of nongrounding-type receptacles with grounding-type receptacles and for branch circuits that do not have an *equipment* grounding conductor in the branch circuitry, the grounding conductor of a grounding-type receptacle outlet shall be permitted to be grounded to any accessible point on the grounding electrode system, or to any accessible point on the grounding electrode conductor, as allowed and described in Chapters 34 through 43.

SECTION AJ401 RENOVATIONS

AJ401.1 Materials and methods. The work shall comply with the materials and methods requirements of this code.

AJ401.2 Door and window dimensions. Minor reductions in the clear opening dimensions of replacement doors and windows that result from the use of different materials shall be allowed, whether or not they are permitted by this code.

AJ401.3 Interior finish. Wood paneling and textile wall coverings used as an interior finish shall comply with the flame spread requirements of Section R302.9.

AJ401.4 Structural. Unreinforced masonry buildings located in Seismic Design Category D₂ or E shall have parapet bracing and wall anchors installed at the roofline whenever a reroofing *permit* is issued. Such parapet bracing and wall anchors shall be of an *approved* design.

SECTION AJ501 ALTERATIONS

AJ501.1 Newly constructed elements. Newly constructed elements, components and systems shall comply with the requirements of this code.

Exceptions:

1. Openable windows may be added without requiring compliance with the light and *ventilation* requirements of Section R303.
2. Newly installed electrical *equipment* shall comply with the requirements of Section AJ501.5.

AJ501.2 Nonconformities. The work shall not increase the extent of noncompliance with the requirements of Section AJ601, or create nonconformity to those requirements that did not previously exist.

AJ501.3 Extensive alterations. Where the total area of all of the work areas included in an *alteration* exceeds 50 percent of the area of the *dwelling unit*, the work shall be considered to be a reconstruction and shall comply with the requirements of these provisions for reconstruction work.

Exception: Work areas in which the *alteration* work is exclusively plumbing, mechanical or electrical shall not be included in the computation of the total area of all work areas.

AJ501.4 Structural. The minimum design loads for the structure shall be the loads applicable at the time the building

APPENDIX J

was constructed, provided that a dangerous condition is not created. Structural elements that are uncovered during the course of the *alteration* and that are found to be unsound or dangerous shall be made to comply with the applicable requirements of this code.

AJ501.5 Electrical equipment and wiring.

AJ501.5.1 Materials and methods. Newly installed electrical *equipment* and wiring relating to work done in any work area shall comply with the materials and methods requirements of Chapters 34 through 43.

Exception: Electrical *equipment* and wiring in newly installed partitions and ceilings shall comply with the applicable requirements of Chapters 34 through 43.

AJ501.5.2 Electrical service. Service to the *dwelling unit* shall be not less than 100 ampere, three-wire capacity and service *equipment* shall be dead front having no live parts exposed that could allow accidental contact. Type "S" fuses shall be installed where fused *equipment* is used.

Exception: Existing service of 60 ampere, three-wire capacity, and feeders of 30 ampere or larger two- or three-wire capacity shall be accepted if adequate for the electrical load being served.

AJ501.5.3 Additional electrical requirements. Where the work area includes any of the following areas within a *dwelling unit*, the requirements of Sections AJ501.5.3.1 through AJ501.5.3.5 shall apply.

AJ501.5.3.1 Enclosed areas. Enclosed areas other than closets, kitchens, *basements*, garages, hallways, laundry areas and bathrooms shall have not less than two duplex receptacle outlets, or one duplex receptacle outlet and one ceiling- or wall-type lighting outlet.

AJ501.5.3.2 Kitchen and laundry areas. Kitchen areas shall have not less than two duplex receptacle outlets. Laundry areas shall have not less than one duplex receptacle outlet located near the laundry *equipment* and installed on an independent circuit.

AJ501.5.3.3 Ground-fault circuit-interruption. Ground-fault circuit-interruption shall be provided on newly installed receptacle outlets if required by Chapters 34 through 43.

AJ501.5.3.4 Lighting outlets. Not less than one lighting outlet shall be provided in every bathroom, hallway, stairway, attached garage and detached garage with electric power to illuminate outdoor entrances and exits, and in utility rooms and *basements* where these spaces are used for storage or contain *equipment* requiring service.

AJ501.5.3.5 Clearance. Clearance for electrical service *equipment* shall be provided in accordance with Chapters 34 through 43.

AJ501.6 Ventilation. Reconfigured spaces intended for occupancy and spaces converted to habitable or occupiable space in any work area shall be provided with *ventilation* in accordance with Section R303.

AJ501.7 Ceiling height. *Habitable spaces* created in existing *basements* shall have ceiling heights of not less than 6 feet, 8

inches (2032 mm), except that the ceiling height at obstructions shall be not less than 6 feet 4 inches (1930 mm) from the *basement* floor. Existing finished ceiling heights in non-habitable spaces in *basements* shall not be reduced.

AJ501.8 Stairs.

AJ501.8.1 Stair width. Existing *basement* stairs and handrails not otherwise being altered or modified shall be permitted to maintain their current clear width at, above and below existing handrails.

AJ501.8.2 Stair headroom. Headroom height on existing *basement* stairs being altered or modified shall not be reduced below the existing stairway finished headroom. Existing *basement* stairs not otherwise being altered shall be permitted to maintain the current finished headroom.

AJ501.8.3 Stair landing. Landings serving existing *basement* stairs being altered or modified shall not be reduced below the existing stairway landing depth and width. Existing *basement* stairs not otherwise being altered shall be permitted to maintain the current landing depth and width.

SECTION AJ601 RECONSTRUCTION

AJ601.1 Stairways, handrails and guards.

AJ601.1.1 Stairways. Stairways within the work area shall be provided with illumination in accordance with Section R303.6.

AJ601.1.2 Handrails. Every required exit stairway that has four or more risers, is part of the means of egress for any work area, and is not provided with at least one handrail, or in which the existing handrails are judged to be in danger of collapsing, shall be provided with handrails designed and installed in accordance with Section R311 for the full length of the run of steps on not less than one side.

AJ601.1.3 Guards. Every open portion of a stair, landing or balcony that is more than 30 inches (762 mm) above the floor or *grade* below, is part of the egress path for any work area, and does not have *guards*, or in which the existing *guards* are judged to be in danger of collapsing, shall be provided with *guards* designed and installed in accordance with Section R312.

AJ601.2 Wall and ceiling finish. The interior finish of walls and ceilings in any work area shall comply with the requirements of Section R302.9. Existing interior finish materials that do not comply with those requirements shall be removed or shall be treated with an *approved* fire-retardant coating in accordance with the manufacturer's instructions to secure compliance with the requirements of this section.

AJ601.3 Separation walls. Where the work area is in an attached *dwelling unit*, walls separating *dwelling units* that are not continuous from the foundation to the underside of the roof sheathing shall be constructed to provide a continuous fire separation using construction materials consistent with the existing wall or complying with the requirements for new structures. Performance of work shall be required only on the

side of the wall of the *dwelling unit* that is part of the work area.

AJ601.4 Ceiling height. *Habitable spaces* created in existing *basements* shall have ceiling heights of not less than 6 feet, 8 inches (2032 mm), except that the ceiling height at obstructions shall be not less than 6 feet 4 inches (1930 mm) from the *basement* floor. Existing finished ceiling heights in non-habitable spaces in *basements* shall not be reduced.