

MISSOURI HOUSING DEVELOPMENT COMMISSION
ARCHITECTURAL/CONSTRUCTION COMPLIANCE
GUIDELINES

2009 NOFA

MHDC Form 1200
(Revised December 15, 2008)



3435 Broadway
Kansas City, Missouri 64111

**These guidelines supersede the Architectural Guidelines dated May 29, 2008;
significant changes have been highlighted.**

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**MISSOURI HOUSING DEVELOPMENT COMMISSION
ARCHITECTURAL GUIDELINES**

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INTRODUCTION. The primary objectives of this document are to set forth guidelines and standards for the design and construction of Missouri Housing Development Commission (MHDC)-supported multifamily developments, to aid in the determination of acceptability of proposed multifamily projects and to aid the Architects, Mortgage/Owners and Contractors in preparing complete submissions that will allow smoother commitment processing and construction disbursement processing.

It is the responsibility of the Mortgage/Owners and their agents to provide MHDC with the appropriate documentation to insure smooth and timely processing of architectural exhibits for firm commitment, loan closings and final project acceptance.

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I. DEFINITIONS

- A. Accessible Design. Generally means that an adult in a wheelchair can maneuver into and through a space and use the fixtures and appliances. To be considered accessible for MHDC-funded developments the design must meet the requirements of the Uniform Federal Accessibility Standards or an equivalent standard approved by MHDC.

- B. Adaptable Design. Generally means that an adult in a wheelchair can maneuver into and through a space and that the fixtures and appliances can be readily modified for use by an adult in a wheelchair. To be considered adaptable for MHDC-funded developments the design must meet the requirements of the Uniform Federal Accessibility Standards (see Sections 4.34.3 and 4.34.4) or must meet an equivalent standard approved by MHDC.

- C. Architect. The professional architect (or engineer), licensed in the State of Missouri, providing design and construction administration services to the mortgage/owner required by the Standard Form of Agreement Between Owner and Architect for Housing Services, AIA Document B181 and the MHDC rider, Amendment to AIA Document B181. Construction administration includes all architectural services required after the start of construction through the latent defects inspection.

- D. Conditional Commitment. The first stage of the Commission's (MHDC) approval of the owner/mortgage's application for funds.

- E. Conversion Closing. The point at which, after all of MHDC's requirements

have been met, the final draw has been submitted to the title company for final disbursement, and the loan is ready to convert from construction to permanent status. This was previously referred to as the "Final Closing."

- F. Energy Star. ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy intended to generate energy savings and protect the environment through energy efficient products and practices.
- G. Energy Star Building Performance Standard. All new and gut rehab residential buildings that committed in the application to be Energy Star-certified shall be designed to meet the standard for Energy Star Qualified new homes, scoring a number no higher than an 85 on the Home Energy Rating Systems ("HERS") scale. All procedures used for this rating shall comply with the HERS guidelines.
- H. Fair Housing Act Design Requirements. Generally means that an adult in a wheelchair can maneuver through the public and common spaces, get into certain units, maneuver through the unit and has limited access to fixtures and appliances. To be considered compliant for MHDC-funded developments the design must meet the requirements of the Fair Housing Act Design Manual.
- I. Firm Commitment. The second stage of the Commission's (MHDC) approval of the owner/mortgagor's application for funds.
- J. Initial Closing. The loan closing for construction/permanent loans prior to the start of construction.
- K. Manufactured Housing: Generally refers to housing assembled in a factory setting and transported to the development site for installation. Examples include system built housing, modular homes and mobile homes.
- L. Manufactured Components: Generally refers to prefabricated framing and structural components such as trusses and panelized systems which are assembled in a factory setting and transported to the development site for installation.
- M. Universal Design. Generally means that people with varying abilities and sizes can maneuver into and through the space and use the fixtures and appliances with minor modifications. The seven principles of Universal Design include 1) Equitable Use, 2) Flexibility in Use (easy to adapt), 3) Simple and Intuitive Use, 4) Perceptible Information, 5) Tolerance for Error, 6) Low Physical Effort and 7) Size and Space for Approach and

Use. There are no published rules or standards for achieving compliance with Universal Design and there is no right or wrong answer; it is a matter of realizing these Principles through thoughtful design and attention to detail.

II. GENERAL DEVELOPMENT ACCEPTABILITY

- A. Each proposed development must satisfy the needs of the affordable rental market of the local area.
- B. To be accepted, rental developments must:
1. Comply with applicable local, state and federal ordinances and laws.
 2. Provide facilities, equipment and amenities appropriate for use by the intended occupants.
 3. Be designed to meet the established construction budget.
 4. Be designed to be economical to maintain.
 5. Be in compliance with the Uniform Federal Accessibility Standards of April 1, 1988 (24 CFR, Part 8, Nondiscrimination Based on Handicap). This means that projects of **fifteen** or more units are required to have a minimum of one unit, to equal no less than 5% of the total units, accessible to physically handicapped persons, and an added 2% of the units usable by those with hearing or visual impairments **(HOME requirements may be more restrictive—contact MHDC construction compliance staff for more details). Common areas in all developments must be accessible.**
 6. For all new construction single family and duplex units, and all new construction senior housing, regardless of the number of units in the development, be designed utilizing the principles of Universal Design. Required elements are attached hereto as Exhibit "D."
 7. Include Energy Star appliances, including Energy Star-rated furnaces, air conditioning units, and windows. The use of Energy Star-rated hot water heaters and insulation values is highly recommended.
 8. For all developments which utilize natural gas, be equipped with a hardwired combination smoke and carbon monoxide detector. If this is not feasible, please submit a written request for a waiver of this requirement.

MHDC recommends the following features:

1. Natural gas leak detectors installed in units where natural gas is utilized.
2. The use of cages to surround and secure air conditioning units. If cages are not used, and theft of the air conditioning units becomes

a problem, MHDC may require cages be installed to reduce the chances of future theft.

- C. Developments must comply with the following design and construction standards:
1. Construction codes as adopted by the governmental unit in which the project is located.
 2. In the absence of locally adopted codes, the latest available edition of the International Building Code (2006), the International Plumbing Code, the International Mechanical Code, the National Electrical Code (2005) and/or the International Residential Code.
 3. Local zoning ordinances.
 4. The Fair Housing Act of 1968, as amended, and the Fair Housing Act Design Requirements.
 5. Projects receiving federal, state, county or municipal funding may, in addition to the Fair Housing Act Design Requirements, be required to comply with the Architectural Barriers Act of 1968, Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, all in their latest revisions.
 6. No part of any residential structure may be located within 30 feet of the outer boundary of a high-pressure gas and liquid petroleum transportation pipeline easement.
 7. No part of any residential structure may be located within 100 feet (horizontal) of any high voltage transmission lines or their supports.
 8. The 2006 International Energy Conservation Code (formerly the Model Energy Code) as published by ICC/CABO.
 9. For the control of lead hazards: the Lead Paint Poisoning Prevention Act, the Department of Housing and Urban Development Guidelines for the Evaluation and Control of Lead Based Paint in Housing, and the MHDC Lead-Based Paint Policy and Procedures which is attached as Exhibit "E."
 10. Due to multiple federal, State of Missouri, and local regulations governing the disturbance, employee exposure, and disposal of ACM (asbestos containing material(s)), MHDC recommends that asbestos-containing material(s) be properly addressed prior to the start of activities that may impact them. A MDNR (Mo. Department of Natural Resources) licensed abatement contractor should perform the removal of any ACM that may be impacted as part of renovation and / or demolition projects.
 11. If radon is detected to be above 4pCi/L in existing developments during the environmental review process, the rehabilitation process must include the venting of the affected area with a four-inch pipe that extends through the roof with a fan to exhaust the air outdoors.

If the geotechnical report states that radon is now or may in the

future be a danger for a new construction development, design and construction must include the penetration of the slab with a four-inch pipe that extends from the radon "sump pit" through the roof and a receptacle in the attic for the addition of a fan, if necessary. A radon test will be required to be performed in one unit on the first floor of every building prior to the issuance of an 8609 for final tax credit allocation or for permanent loan closing or conversion. A follow-up test will be required every five years thereafter. If radon is detected at levels above 4pCi/L as a result of any of these tests, a fan must be installed and activated and the sump pit sealed. Following activation of the evacuation system, radon levels must be re-tested and the venting adjusted until radon levels are at or below 4pCi/L.

- D. The standards below pertain to Manufactured Housing, Manufactured Components and any assembly or portions thereof manufactured off-site and transported to the site for installation.
1. All Manufactured Housing must be designed by a professional architect or engineer registered in the state of Missouri.
 2. All Manufactured Housing and Manufactured Components must comply with locally-adopted building and zoning codes and seismic requirements.
 3. Manufactured Housing must be constructed on a permanent foundation.
 4. All components must be sealed, signed and dated by a registered architect or engineer licensed in the state of Missouri.
 5. All Manufactured Housing and Manufactured Components with concealed spaces must be inspected during fabrication and assembly at the plant by a third-party inspector registered in the State of Missouri and performing services under contract with the Owner. The inspecting party shall file inspection reports with the Owner and MHDC.
 6. The project architect is advised to contact the City to determine whether the City will require its representative to perform an inspection at the plant.
 7. MHDC requires factory specifications and warranties for review prior to the commencement of construction.

III. REQUIRED ARCHITECTURAL SERVICES

- A. General. The services of a professional architect and/or engineer, (hereinafter called Architect), licensed to practice in the State of Missouri, are required on all projects. Developments utilizing off-the-shelf plans must employ an Architect to take possession of the plans. Failure to

engage an Architect acceptable to MHDC shall be the basis for rejection of the application.

The principal or an authorized representative of the Architectural firm is required to stamp the drawings and sign off on monthly and final inspection reports, change orders, draw requests, and any other applicable documentation before its submission to MHDC. MHDC may request a resolution setting forth the names of the Architect's authorized representatives, along with their resumes, for the file.

- B. Owner-Architect Agreement. Architectural services shall be contracted using AIA Document B181, Standard Form of Agreement between Owner and Architect for Housing Services. The MHDC rider, Amendment to AIA Document B181, shall be signed and attached to the Agreement. See attached Exhibit "A."
1. The scope of services shall provide all architectural, structural, mechanical, electrical, civil, landscape and other consulting services necessary to clearly identify the requirements for construction of the project. The scope of services must include adequate provisions for the administration of the construction contract.
 2. The scope of services shall designate the responsibility for the services to be provided whether by the architect, owner or others.
 3. Modifications may be made to the Owner-Architect Agreement by striking out inapplicable provisions and inserting additional provisions in Article 12. Changes shall not delete any service, either by the architect or owner, necessary to the project.
 4. Required services may not be sublet or delegated to anyone not acceptable to MHDC.
 5. No modification of the MHDC rider is permitted.
- C. Basis of Compensation. The fee shall be a fixed fee for the services provided by the Architect as stated in the Agreement. The amount of compensation for design services and for construction phase services shall be separately identified and is subject to MHDC approval. The Construction Phase services should reflect an amount sufficient to compensate the Architect for required construction supervision services. MHDC reserves the right to adjust the fee structure based upon the amount of inspections deemed necessary in its sole discretion (see section VII.D).
- D. All identity of interests between Architect, Mortgagor/Owner/Developer, Contractor, Subcontractors and Suppliers must be disclosed.

- E. Where there is an identity of interest between the afore stated parties in paragraph D, then MHDC reserves the right to hire an independent construction inspector of its choice, and said construction inspector will be responsible to MHDC. The cost of said MHDC construction inspector will be reimbursed by the Owner.

IV. APPLICATION PACKAGE

- A. General. The MHDC architectural staff will review the architectural exhibits included in the owner/mortgagor's funding application for general site-related issues, rehabilitation issues and cost verification.
- B. Submittals. The following architectural exhibits shall be included in the mortgagors/owners' application for funding:
 - 1. City/Locality Map.
 - 2. Site Plan.
 - 3. Photographs of existing buildings if the project involves rehabilitation.
 - 4. Preliminary architectural drawings, including building and unit plans.
 - 5. Exterior building finishes notations.
 - 6. Physical Needs Assessment for rehabilitation projects prepared by a licensed architect or engineer. See MHDC Form 1201 for MHDC Physical Needs Assessment Standards.
 - 7. For historic buildings proposing a gut rehab, a letter from a structural engineer or equally qualified professional that certifies the building has been inspected and is structurally sound for the intended use.
 - 8. Site Evaluation (MHDC Form 1302) and all substantiating information/maps, including pertinent zoning information for the site and the surrounding area.

V. FIRM COMMITMENT PACKAGE

- A. The MHDC architectural staff will review the architectural/cost exhibits submitted as part of the owner/mortgagor's Firm Commitment package.
- B. MHDC requires that the following architectural exhibits be included in the firm commitment package:
 - 1. A complete set of construction documents adequate to describe the proposed site development; architectural, structural, mechanical and electrical components of the project in sufficient detail to verify

compliance with local zoning and building requirements and with all federal regulations. If your development is located in the Kansas City metropolitan area, please provide three full-size sets of architectural/engineering drawings and specifications. If your development is located in the out-state area, please provide 2 full-size sets of architectural/engineering drawings and specifications. Please provide one 11"x17" set (or half-size) which includes only the site plan, elevations and floor plans for all developments.

If the Owner chooses to use off-the-shelf design plans which are purchased from a third party (such as a book of house plans), the owner must present to MHDC a copy of the invoice and the terms of the purchase. The design plan must be submitted to the Architect of record for review and approval. This shall also include any changes to the off-the-shelf design plans which were requested by the Owner and approved by the third party. The terms of the purchase shall include whether or not there is a right to reproduce the off-the-shelf design plans for future use, including the right of the Owner to vary from the original plan. The terms of the purchase shall give an Architect rights to (a) make minor modifications and/or define in further detail all portions of the off-the-shelf design plans as may be necessary for the site where the improvements are to be constructed; (b) take possession, sign, seal and date the off-the-shelf design plans.

2. Documentation to confirm the sustainable housing practices committed in the application are being followed appropriately in the design process.
3. AIA Document B181, Standard Form of Agreement between Owner and Architect for Housing Services. If this agreement does not include all required architectural and engineering disciplines, include copies of all consulting contracts.
4. Amendment to AIA Document B181 (MHDC Rider). See attached Exhibit "A."
5. Mortgagor's and Contractor's Cost Breakdown, MHDC Form FIN 115 or AIA Document G702/G703 with the schedule of values filled in. These forms should be filled out to at least the level of detail specified in the MHDC Form FIN 115, with labor costs and material costs separately itemized and the work description clarifying each line item. This form is available on the MHDC web site.

6. When subcontractor work and material suppliers work exceeds \$10,000.00, their actual bids must be attached. These bids must be itemized clearly enough to verify costs. **Please note the following documents which must be bound within the bid documents:**
 - a. HOME-financed developments with 12 or more HOME-assisted units must include the current edition of the “General Conditions of the Contract for Construction” (AIA Document A201) as amended, the “Federal Labor Standards Provisions” (form HUD-4010).
 - b. Developments receiving Risk Share insurance must include the current edition of the “General Conditions of the Contract for Construction” (AIA Document A201) as amended, the “Supplementary Conditions of the Contract for Construction” (form HUD-2554), and the Section 3 Plan as approved by MHDC.
 - c. For developments receiving both HOME funds and Risk Share insurance, form HUD-2554 is the only form required.
7. For developments receiving HOME funding or Risk Share insurance, submit a Section 3 Plan for the construction of the development as outlined in the “Section 3 Compliance Guide
8. Geotechnical Engineering Report
 - a. Identify and describe soils by the nomenclature of the Unified Soils Classification System.
 - b. Borings must be in, or adjacent to, the proposed foundation area.
 - c. At least one boring must be made for every 2500 sq. ft. of foundation area. For buildings supported on pilings, one boring must be made for every 1600 sq. ft. of foundation area.
 - d. Borings must be at least to the bottom of the proposed footings and deep enough to locate bearing strata, which will support the proposed structure. When rock is encountered, the depth of drilling into the rock shall be sufficient to establish rock quality regarding voids, fissures and strength.
 - e. When ground water conditions influence the building design, observation of ground water levels must be recorded at the time of boring and at least 48 hours later.
 - f. Radon. If the development is new construction, and the report indicates a problem with radon, action must be taken to mitigate the danger. This includes periodic testing during the operation of the development as set out in the LIHTC Compliance Manual.
9. A Phase I Environmental Report prepared according to the ASTM

Standard E 1527-05 by a qualified professional. If the report recommends additional testing, a Phase II Environmental Report or other required test results must also be provided. See the Environmental Review Guidelines MHDC Form 1400 for detailed requirements.

10. Asbestos and lead-based paint inspection reports, inspector certifications and abatement plans.
11. For all existing residential structures, whether rehabilitation or conversion, a radon test must be performed in one basement or first-floor unit or similar location for each building in the development. If the test results are above 4pCi/L, further testing of all units in the basement or first floor must be completed.
12. An updated Physical Needs Assessment current within six months of firm submission for rehabilitation of existing multifamily developments. For buildings being converted from other uses to multifamily, provide a detailed scope of work for the building structure and any components that will not be replaced during construction.
13. FEMA Flood Zone Area Map, including the referenced area, community panel number, and date. If this map is not available for the development location, other evidence acceptable to MHDC showing the location is not prone to flooding must be submitted.
14. Letters from the appropriate entity indicating that the required utilities (water, gas, electric, storm sewer and sanitary sewer) are available to the site and adequate for the proposed development. This letter shall be addressed to Rental Production, Missouri Housing Development Commission, 3435 Broadway, Kansas City, MO 64111-2415 and should include the exact legal description as indicated in the title commitment. The information contained in these letters must be supported by easements shown on the survey and/or copies of the construction permits for the utility work.
15. For developments approved for HOME financing or federal insurance, a completed Section 106 Project Information Form and the completed Cultural Resource Assessment, Section 106 Review from the Missouri Department of Natural Resources.
16. Contractor's Qualification Statement, AIA Form A305.
17. If MHDC is not providing construction financing, provide an

executed AIA Document A111-1997, Standard Form of Agreement Between Owner and Contractor Where the Basis for Payment is the Cost of the Work Plus a Fee with a Negotiated Guaranteed Maximum Price. The Mortgagor and Contractor must execute an MHDC-prepared Construction Contract if MHDC is providing the construction financing.

18. Survey and Surveyor's Report, form HUD-92457. Please refer to the "Preparation and Review Guidelines for Surveys and Surveyor's Reports Required for MHDC Multifamily Projects" for a complete description of MHDC's survey requirements.
19. For new construction developments, the owner must certify that it has consulted with the Architect and General Contractor to conform to the International Residential Code Section R320-Protection Against Subterranean Termites. Documentation of the measures taken must be incorporated into the construction documents and must be part of the scope of work.
20. For existing buildings, a termite inspection must be performed and a report submitted to demonstrate whether the scope of work needs to address the repair of termite damage.

C. Construction documents must include the following:

1. Specifications or Project Manual with:
 - a. A current edition of AIA Document A201, General Conditions of the Contract for Construction. An original of this document must be bound into the set of construction documents submitted to MHDC. It may not be included by reference only. This document may not be modified. Additions to the General Conditions may be made in the form of Supplementary General Conditions. Other project requirements should be included in the Division 1 General Requirements section of the technical specifications.
 - b. HOME-financed developments with 12 or more HOME-assisted units must include the current edition of the "General Conditions of the Contract for Construction" (AIA Document A201) as amended, the "Federal Labor Standards Provisions" (form HUD-4010), and a current wage determination as provided by MHDC.
 - c. Developments receiving Risk Share insurance must include the current edition of the "General Conditions of the Contract for Construction" (AIA Document A201) as amended, the "Supplementary Conditions of the Contract for Construction" (form HUD-2554), and a current wage determination as

provided by MHDC. Note that the wage determination must be verified and updated within 10 days of the construction loan closing and provided as an addendum to the specifications manual.

- d. Specifications to clarify construction administration requirements.
 - e. Technical specifications as required to clarify materials and methods of construction.
2. A cover sheet with the following information:
- a. Project name, location and MHDC project number.
 - b. Names and addresses of the Architect; the professional providing construction administration, if not the same; the Owner; the Contractor; and MHDC.
 - c. Spaces for the signature of each of the entities listed above.
 - d. A tabulation of the living units by unit type, number of each type in each building, number of non-rental living units and totals. Include a tabulation of all accessible, adaptable, universally designed or Fair Housing compliant units. **Please include a brief description of the universal design principals to be used in the design.**
 - e. Square footage of each unit type, each building, and all non-residential spaces included in the project.
 - f. Location map.
 - g. Number of covered, uncovered and accessible parking spaces.
 - h. Description of building codes enforced by the local governing body and/or used in the project design.
 - i. Accessibility standards used in the project design with all exceptions to compliance identified.
 - j. On all single family and duplex units, a brief description of the approach taken to utilizing the principles of Universal Design.
 - k. Certification, signed by the Architect, that the project design complies with the International Energy Conservation Code.
3. An index of drawings on 8½"x11" paper, which includes the drawing number, drawing title and date of latest revision. Include on the list the project manual or specifications with its date, and any addenda with their issuance dates. This list must be updated prior to the construction loan closing as the index must be included as exhibit "B" in the Capital Advance Construction Contract. Please provide an additional copy of the drawing list(s) directly to the MHDC Legal Department.

4. Topographic survey at a minimum scale of one inch to 30 feet.
 - a. Provide MHDC project name and number.
 - b. Contours at no more than 2-foot intervals. For steeply sloping sites, the maximum interval may be 5 feet.
 - c. Name of City, County, and State of property location.
 - d. North arrow, magnetic and true.
 - e. Owners of, and Lot and Block numbers of, subject property and adjacent properties.
 - f. Legal description of the property, and total square feet and acreage.
 - g. Dimensioned length and direction of each boundary, and physical indication of boundary (monuments, markers, fences, etc.).
 - h. Material variations from record lines by fences, walls, or structures (either on this property or adjoining).
 - i. All encroachments or deviations from the description of the property or conflicts with descriptions of adjoining properties.
 - j. Existing on-site and adjacent streets, alleys, drives, and walks.
 - (i) Provide street names or designations (include widths and dimensions).
 - (ii) Indicate surfacing, curbs, and other pertinent data.
 - (iii) Distance to nearest street.
 - k. All easements, rights-of-way, set back lines, and other restrictions, including widths of easements and rights-of-way, distance of right-of-way lines to paving and distance of set-back lines from property lines.
 - l. Location and size of all utility lines, facilities, poles, hydrants, manholes, etc., including those on, or adjacent to, the property and in adjacent streets. Include water, sewer (storm and sanitary), gas, electric, telephone, and TV. Include sewer invert elevations and direction of flow.
 - m. All high-pressure gas and liquid petroleum transmission pipelines within 220 yards of the property boundaries.
 - n. Location of natural features such as preservable trees, streams, rock outcroppings, etc.
 - o. Indicate, describe, and dimension all on-site existing structures.
 - p. Indicate, describe, and dimension structures adjacent to the site.
 - q. Available information about subsoil, ground water, fill, and buried foundations, tanks, debris, etc.
 - r. Name of licensed surveyor, signature and date of survey.
5. Site plan, grading, drainage and site MEP plan(s) and details. Identify on the site plan all accessible parking spaces, the accessible route(s) through the development and note all accessible, adaptable and Fair Housing compliant units.
6. Landscape plan. If a landscape allowance is used, submit a preliminary plan showing general plant types, quantities and

locations. Submit the final landscape drawing during construction, identifying quantities, plant types, seed and sod areas and other landscape information.

7. Dimensioned floor plans of sufficient detail to review individual unit and building layouts.
8. Exterior building elevations indicating all exterior materials and heights.
9. Structural plans and details including all required connection details.
10. Wall sections and construction details, including stair details. Note all fire resistive assemblies by detail and design assembly number such as IBC, UL or USG design number. Indicate how penetrations through all fire-resistive construction are to be protected and specify materials used.
11. Details indicating how the Americans with Disabilities Act Accessibility Guidelines (ADAAG) are being met in the public areas.
12. For HOME and federally-insured projects, details indicating how the Uniform Federal Accessibility Standards are being met.
13. Details indicating how the Fair Housing Act Guidelines are being met. Include site impracticality calculations for reductions to complete Fair Housing compliance.
14. Schedules as required to indicate door and window sizes and door, window and finish materials.
15. Mechanical, electrical line voltage, communication/control low voltage, and plumbing plans, details, and specifications for all mechanical equipment. If any or all of these systems are proposed and accepted as a "design/build" portion of the work, the Mortgagor/Owner shall insure that the design portion of the work and its full documentation, sealed by a registered engineer, be located at the work site prior to any work being performed.
16. Electrical plans and schedules, as required.
17. Fire alarm and sprinkler systems, if included in the project, may be in the form of specifications only for firm commitment submittal. Shop drawings, including complete system layouts, for these

systems must be submitted during construction.

- D. The MHDC architectural staff shall review the firm commitment submission documents and prepare comments for the MHDC underwriting staff. A copy of these comments will be forwarded to the Architect for review and response.
- E. The Architect must provide MHDC with a written response to the architectural staff's comments on the construction documents submitted for firm commitment. This response should itemize how each of the MHDC architectural staff's comments or questions will be addressed. If modifications are to be made to the construction documents as part of the response, these should be made in the form of addenda. Once MHDC has approved the architectural exhibits and the construction documents, including any addenda or revisions made prior to the construction loan closing, no changes or variances will be allowed unless written approval is given by MHDC.

VI. CLOSING

- A. Changes in the construction documents made after firm commitment must be submitted to MHDC in the form of addenda or revisions for review prior to initial construction loan closing. Revision dates should be clearly marked on all documents. Revisions should be clearly marked on drawing sheets using standard "revision cloud" or other means acceptable to MHDC.
- B. Provide a copy of the updated drawing index (refer to Section V, paragraph C, item 3).
- C. Submit an updated FIN-115 showing the final construction budget for the development as of the closing date, executed by the General Contractor and the Owner.
- D. Provide copies of all building permits issued by the appropriate authority.
- E. For HOME and federally-insured projects, verify that the wage determination provided by MHDC has been updated within 10 days of the construction loan closing. It is the Owner's responsibility to request this update from MHDC at the appropriate time.
- F. Submit an updated list of major subcontractors for each work category on the Master Subcontractor List form MHDC 2502.

- G. Schedule a preconstruction conference for a time after the closing of the construction loan, in a location acceptable to MHDC. No construction should commence prior to the preconstruction conference. Attendees must include: the General Contractor (and/or prime subcontractor), MHDC representatives (schedule through the Construction Compliance Department), the project superintendent, the Architect and an Owner's representative. MHDC will require additional participants, such as major subcontractors and the payroll clerk. On all projects utilizing HOME funds or Risk Share insurance, failure to schedule this preconstruction meeting, or include the specified representatives in this meeting may be grounds to reject a disbursement request.

VII. CONSTRUCTION RESPONSIBILITIES (Construction/Permanent Loans and Permanent-only Loans)

- A. Provide the MHDC architectural staff with the following:
1. Development team contact list with addresses, including e-mail addresses, and phone numbers of Architect, General Contractor's project manager and/or superintendent, Owner's representative, and others as required. Update list as required throughout construction.
 2. A construction progress schedule must be provided for all projects at closing.
 3. If construction is being staged, then a turnover schedule must be provided and updated monthly.
 4. A schedule of progress meetings and payment application inspections must be provided as soon as it is available and updated throughout construction. It is required on projects with MHDC construction loans that monthly progress meetings be coordinated with MHDC architectural staff to insure timely payment application processing.
 5. A list of all major subcontractors. Update the list monthly throughout construction. Please see Section VI item D.
 6. Please be advised that if Section 3 applies to the development, a subcontractor may be required to provide MHDC with a Section 3 Plan, depending upon the amount of the contract award.
 7. Copies of all field inspection reports prepared by the Architect. These reports should include the time and date of inspection, weather information and approximate percentage of project completion.
 8. Copies of any progress meeting minutes.
 9. If requested, copies of any approved shop drawing submittals, data sheets, test results or certifications.
 10. Copies of drawings and specifications for any off-site improvements

relating to the project.

11. Copies of all Architect's Supplemental Instructions and Change Orders (on AIA Document G701) and all other deletions, additions and modifications (including material and equipment substitution) in whatever form these changes are executed.
 12. Provide a copy of the Application and Certification for Payment (on AIA Document G702 with continuation sheet G703). Note that the originals of AIA Documents G701, G702 and G703 should be submitted to MHDC's Construction Disbursement Department for Construction/Permanent Loans processing. **See the Construction Disbursement Guide, MHDC 2400 for instructions.**
- B. All deviations from the approved construction documents must be recorded and approved in writing by MHDC.
- C. At all times, the MHDC construction compliance staff has the right of reasonable access to the construction site and the right to inspect all work performed and materials furnished for the project.
- D. During the construction phase, the Architect of record shall make site visits to inspect all work and materials at a minimum of once monthly. Owners are encouraged to consider the benefits of frequent oversight provided by the Architect, especially for complex scopes of work. The Architect shall also perform footing/foundation inspections and a complete open wall inspection of each building prior to sheetrock. For developments receiving loan funds from MHDC, the frequency of inspection shall be agreed upon by the Architect and the Owner with the execution of the MHDC rider, Amendment to the AIA B181.
- MHDC shall review the proposed inspection schedule at firm submission and shall have the right in its sole discretion to require inspections by the Architect more than once a month as it deems necessary.
- E. Notify MHDC construction compliance staff **or its third-party representative** at the time each building is ready for an open-wall inspection, framing is complete and electrical wiring, plumbing lines and ductwork is installed.
- F. The Owner/Mortgagor, General Contractor and all Subcontractors must comply with federal, state and local laws concerning hiring practices and labor standards. This includes the receipt and review of the I-9 Employment Eligibility Verification Form by all employers for each employee involved in the construction or rehabilitation of an MHDC-financed development.
- G. Owners/Mortgagors and General Contractors **with contracts of \$200,000**

or greater, and Subcontractors with contracts of \$100,000 or greater must comply with Section 3 requirements as applicable.

VIII. CONSTRUCTION COMPLETION

- A. Notify the MHDC construction compliance staff in writing when construction has reached 90% completion.
- B. Coordinate occupancy and punch list inspections of all units/buildings with the MHDC construction compliance staff. Obtain a Certificate of Substantial Completion (AIA Document "G704") for each building/floor inspected, along with a single, final G704 that references the entire project as being complete. All G704 reports are subject to MHDC approval. **All punch list items must be completed prior to occupancy.**
- C. Provide MHDC with the following:
 - 1. Punch list and final inspection report in format similar to the Sample Punch List. See attached Exhibit "B."
 - 2. A fully executed G704 and Occupancy Permit for each building/floor/unit. More than one address may be on a G704.
 - 3. A final G704 that declares the entire project as being complete. This G704 must also state the date of the commencement of the 12 month warranty period, and the date of the commencement of the 9 month latent defect inspection period. All citations and deficiencies discovered at the latent defect inspection must be corrected by the end of the warranty period. The owner shall be responsible for the correction of all latent defect citations and deficiencies regardless of the occupancy of a unit prior to the issuance of the final G704 for the entire project. MHDC reserves the right to conduct additional latent defect inspections.
 - 4. A copy of the final punch list with all work signed off by the contractor and architect.
 - 5. A complete list of all changes made to the approved construction documents in the form of Change Order logs, ASI logs and/or meeting note logs (if changes were made via meeting notes).
- D. Final Inspection. Schedule a final inspection with the MHDC construction compliance staff. This inspection may be scheduled concurrent with the Architect's punch list inspection(s) provided that inspection occurs when the work is complete.

IX. CONVERSION OF CONSTRUCTION/PERMANENT LOANS AND CLOSING OF PERMANENT-ONLY LOANS

- A. Provide MHDC with the following:
 - 1. A copy of the Certificate of Occupancy or final inspection report from the governmental unit having jurisdiction, if applicable.
 - 2. An updated survey, identifying the location of all buildings and all improvements, along with all underground utility lines including water, storm and sanitary sewers, gas, electrical, telephone and cable TV lines.
 - 3. An updated site plan, showing all improvements and all underground utility lines including water, storm and sanitary sewers, gas, electrical, telephone and cable TV lines.
 - 4. The Final Architect's Certification. See attached Exhibit "C."
 - 5. A list of final "incomplete items" and their approximate value.

- B. Incomplete Items. The final inspection will establish the amount to be withheld from the final construction draw, which will be held in an escrow account. The incomplete items and the escrow are to be approved by MHDC.

- C. Latent Defects Escrow. A latent defects escrow in an amount equal to 2.5% of the construction contract amount must be established by the Contractor at final closing. The escrow will be held for 15 months from the date of substantial completion, as established by the MHDC approved Certificate of Substantial Completion (AIA G-704) for the entire project. This amount will be released only after an inspection and approval by the Owner/Mortgagor, the Architect and MHDC. An MHDC compliance officer shall schedule this inspection, and attendance by the Owner/Mortgagor, Contractor, and the Architect will be required.

X. REQUIREMENTS PRIOR TO THE SALE OF UNITS (RENTAL/HOMEOWNERSHIP DEVELOPMENTS)

Rental developments approved by MHDC for eventual sale to existing residents must address repair and maintenance needs utilizing replacement reserve funds and additional sources (if needed) prior to offering residents the opportunity to purchase.

Single-family Developments:

- A. Prepare a capital improvements plan to identify repair and maintenance needs at least one year prior to the planned sale date. The plan must include a proposed budget for repairs.

- B. Submit capital improvements plan and proposed budget to MHDC Asset Management for review and approval, identifying how replacement reserve funds and any additional sources will be used to complete the plan.
- C. Following MHDC approval, commence repairs according to the capital improvements plan, processing requests for payment and/or reimbursement from the replacement reserve through MHDC Asset Management.
- D. Following completion of improvements but prior to offering the homes for sale to the residents, Asset Management must inspect and approve repairs and maintenance.

Condominium Conversions:

- A. Prepare an initial draft capital improvements plan to identify repair and maintenance needs at the time of initial notice to MHDC of the intention to convert to condominiums. The plan must include a proposed budget for repairs.
- B. After the decision to proceed toward conversion (approximately two years prior to conversion), MHDC shall hire an independent architect or engineer to complete a Physical Needs Assessment for the property at the owner's expense. The owner shall submit to MHDC Asset Management for review and approval a final capital improvements plan and budget addressing deficiencies found in the Physical Needs Assessment, identifying how replacement reserve funds and any additional sources will be used to complete the plan.
- C. Following MHDC approval, commence repairs according to the capital improvements plan, processing requests for payment and/or reimbursement from the replacement reserve through MHDC Asset Management.
- D. Submit progress report with request for final approval of conversion.
- E. Following completion of improvements but prior to offering the units for sale to the residents, MHDC Asset Management staff must inspect and approve repairs and maintenance.

EXHIBIT "A"

AMENDMENT TO AIA DOCUMENT B181 Standard Form of Agreement Between Owner and Architect for Housing Services

The Provisions of this Amendment supersede and void all inconsistent provisions of the Agreement.

1. The Owner and the Architect represent that they are familiar with MHDC requirements, including all standards as set forth in publications given to them by MHDC for this Project and will perform all services in accordance with the applicable requirements of MHDC.
2. The Owner and the Architect recognize the interest of MHDC in the Project and any action or determination by either the Owner or the Architect is subject to acceptance or rejection by MHDC.
3. The portion of the Architect's services and responsibilities and the Owner's responsibilities shall not be sublet or delegated to anyone not acceptable to MHDC.
4. The Owner agrees to follow MHDC requirements regarding the use of off-the-shelf design plans and provide MHDC a copy of the invoice and the terms of the purchase which demonstrate whether the Owner has a right to reproduce the off-the-shelf design plans for future use, whether the Owner has a right to vary from the original plan, and whether the Architect of record has been given the right to (a) make minor modifications and/or define in further detail all portions of the off-the-shelf design plans as may be necessary for the site where the improvements are to be constructed; (b) take possession, sign, seal and date the off-the-shelf design plans.
5. The Architect will advise MHDC as well as the Owner of any omissions, substitutions, defects and deficiencies observed in the Work of the Contractor.
6. The principal of the Architect shall stamp all drawings and sign off on monthly and final inspection reports before its submission to MHDC.
7. The Architect shall issue Certificates of Payment and Certificates of Substantial Completion. These certificates shall be in the form prescribed by MHDC.
8. The Architect of record shall make a minimum of (check one) one visit two visits to the project per month throughout the construction period. MHDC in its sole discretion has the right to request additional inspections by the Architect as it deems necessary. Copies of the inspection reports shall be provided to MHDC.
9. The Architect of record shall perform a footing/foundation inspection and a complete open wall inspection of each building prior to the installation of sheet rock. Copies of these inspections reports shall be provided to MHDC.
10. The Architect will furnish copies of all field orders and field reports to MHDC in addition to the Owner.
11. The Agreement shall not be terminated without five days prior written Notice to MHDC.
12. The Owner and the Architect shall recognize as a valid reason for termination, any request by MHDC for termination because of inadequate performance, undue delay or representation which may make the further services of the Architect unacceptable to MHDC.
13. If the Project for which the drawings or specifications prepared by the Architect has not been completed and there is a default or foreclosure, MHDC may use the drawings or specifications to complete construction of the Project without additional cost.
14. The Architect shall participate in a latent defects inspection no sooner than nine (9) months after the

date of Substantial Completion, nor later than eleven (11) months. The Architect shall issue a list of construction contract defects arising out of this inspection to the Owner, Contractor and MHDC.

(SEAL)
ATTEST:

(SEAL)
ATTEST:

OWNER:

By: _____

ARCHITECT:

By: _____

EXHIBIT "B"

**SAMPLE
PUNCH LIST**

AAA Architects
1111 South First Street
First City, Missouri
Phone 816-555- 1111 Fax 816-555-1112

Inspection Report for First City Apartments
2222 South Second Street
First City, Missouri

Date of Inspection

Note: The following are to be completed or corrected by the Contractor prior to final acceptance of the Project. The Contractor shall return a copy of this list to the Architect (*or Engineer*) after each item has been addressed, properly dated and initialed by the person responsible for corrective action.

| DESCRIPTION | CONTRACTOR ADDRESSED | ARCHITECT ACCEPTED |
|---|-------------------------|-----------------------|
| | | INITIAL & DATE |
| | | INITIAL & DATE |
| Site | | |
| 1. Curb cuts not installed | _____ | _____ |
| 2. Lawn not seeded | _____ | _____ |
| Building #1 | | |
| 1. Install screens | _____ | _____ |
| 2. Termites have eaten hole in living room floor. Repair and apply termite treatment. | _____ | _____ |

*This format is recommended in terms of the layout. Other information may be added per design firm's policy if desired. The basic information, however; the work descriptions, the Contractor's initialed response for **each** item and the Architect's (or Engineer's) acceptance of **each** item is required.*

EXHIBIT "C"

FINAL ARCHITECT'S CERTIFICATION

**Development Name:
MHDC No.**

TO: MISSOURI HOUSING DEVELOPMENT COMMISSION

In order to induce the **MISSOURI HOUSING DEVELOPMENT COMMISSION** ("MHDC") to advance the final installment of permanent loan proceeds in the amount of \$ _____ for the development of _____, located in _____, **Missouri** ("Development"), and with the intent that MHDC rely upon the statements set forth herein as a basis for so doing, the undersigned hereby certifies as follows:

The above referenced Development has been built in accordance with the Plans and Specifications, which were prepared by _____, a Missouri _____ and incorporated as part of the Construction Contract. Any changes made to the approved Contract Documents during construction have been documented after review and approval by the undersigned and MHDC.

All defined terms of this document bear the same meaning as in the Construction Contract executed in conjunction with the Development.

ARCHITECT:

By: _____
Name: _____
Title: _____

Date: _____

EXHIBIT "D"
UNIVERSAL DESIGN REQUIREMENTS

MHDC requirements for Universal Design of housing for the elderly and single family dwellings.

1. Equitable Use
 - a. Flat landing surfaces leading to doorways
 - b. Lever action door hardware
 - c. Lever action plumbing fixtures controls
 - d. No thresholds and/or change of walking surface greater than ½ inch

2. Flexibility in Use
 - a. Blocking in bathroom walls to accept grab rails
 - b. Blocking in or behind shower/tub enclosures to accept grab rails
 - c. Door assemblies and cabinet door assemblies that will accept lever or knob hardware without alteration or replacement

3. Simple and Intuitive
 - a. Buttons on control panels that can be distinguished by touch

4. Perceptible Information
 - a. Signage with large contrasting print in addition to generally recognized icons
 - b. Contrasting colors between wiring devices [receptacles and light switches] and surrounding surfaces
 - c. Contrasting colors between steps and landings
 - d. Contrasting colors between different floor coverings
 - e. Contrasting colors between countertops and flooring
 - f. Contrasting colors between plumbing fixtures and flooring/countertops

5. Tolerance for Error
 - a. Light switches with large flat pads
 - b. Non-slip walking surfaces

6. Low Physical Effort
 - a. Self closing fire rated doors must be on lowest setting while complying with the enforced building code.
 - b. No interior ramps

7. Size and space for approach and use
 - a. 36 inch wide doors
 - b. 5 feet turning radius in kitchen
 - c. 5 feet turning radius in bathroom
 - d. 42 inch wide residential unit and common hallways

Exhibit "E"

MHDC Lead-Based Paint Policy and Procedures

MHDC Rental Housing Production Programs Guidelines for Rehabilitation Projects

- 1) MHDC requires a physical needs assessment for all rental housing production proposals for the rehabilitation of existing buildings. The physical needs assessment must include an assessment of the presence or suspected presence of lead-based paint, asbestos or mold for all proposals.
- 2) Developers must provide the age of the structure as requested in the Rental Production application FIN-100.
- 3) Developers must submit the following documents with the Part 1 application for firm commitment (generally due March 1 of each year):
 - a) Phase I Environmental Report with potential lead hazard identified for buildings constructed prior to 1978;
 - b) Lead Hazard Evaluation Procedures; and
 - c) Lead Hazard Reduction Procedures.

As the result of the firm submission review, MHDC staff shall indicate the required lead hazard reduction work and protective measures to be followed during construction.

- 4) Prior to the conversion or closing of a permanent loan with MHDC, the borrower shall provide:
 - a) Tenant Notification Procedures;
 - b) Lead Clearance;
 - c) Contractor's Abatement License; and
 - d) Ongoing Maintenance Procedures, if required.

HOME Rental Production Program

Lead-Based Paint Reference Guide (24 CFR Part 35)

Revised 07/20/2007

(Sub-Grantees are to refer to and comply with all of the pertinent lead paint regulations. The following is only an overview.)

A. HUD's Lead-Safety Regulation

Federal Register (Wednesday, September 15, 1999)
Department of Housing and Urban Development
24 CFR Part 35, et al.

Requirements for Notification, Evaluation, and Reduction of Lead-Based Paint Hazards in Federal Owned Residential Property and Housing Receiving Federal Assistance; Final Rule

B. Exemptions 24 CFR 35.115

- Post-1977 housing (1978 and newer)
- Zero-bedroom units
- Property certified as lead safe
- Property where lead-based paint was removed
- Rehabilitation or maintenance activities that do not disturb painted surfaces
- Emergency actions

C. Documentation Required

1. **Notice To Occupants:** Occupants must be provided with the following documentation:
 - a. EPA Lead Hazard Information Pamphlet at the time of purchase or lease;
 - b. "Notice of Hazard Evaluation" (or presumption) within 15 calendar days of the date when the evaluation is received or the presumption is made (*24 CFR 35.125(a)*); and
 - c. "Notice of Hazard Reduction & Clearance" no more than 15 calendar days after the hazard reduction activities have been completed (*24 CFR 35.125(b)(1)*).
2. **Hazard Reduction:** The following documentation must be completed:
 - a. Final scope of work addressing both lead and non-lead paint prior to firm commitment for construction funded from the multifamily HOME Rental Production Program.
 - b. For lead reduction activities that are performed on properties funded through the single-family HOME Repair Program, MHDC requires the contractor supervisor to be trained in Safe Work Practices.
 - c. For properties funded through the multifamily HOME Rental Production Program, MHDC requires the Owner to hire a contractor certified as a lead-based paint specialist. A copy of the contractor's Lead Abatement Contractor license is required prior to conversion/permanent closing.
 - d. For properties funded through the multifamily HOME Rental Production Program, certification by the contractor that Safe Work Practices (*24 CFR Part 35.1350*) have been observed is required prior to conversion/permanent closing.

3. **Clearance Report:** Clearance must be performed by a licensed Risk Assessor after all rehab work is done, with a copy of the clearance report and qualifications of the Risk Assessor sent to the MHDC Homeownership division at the time of payment request (HOME Repair Program) or to the MHDC Rental Production division prior to conversion/permanent closing (HOME Rental Production Program).

D. **General Procedural Overview**

For single-family properties receiving funds from the HOME Repair program:

1. A visual assessment walk-through by an HQS inspector trained in visual assessment (per self-administered HUD Internet course at <http://www.hud.gov/offices/lead>) looks for defective paint and applies the *de minimis levels* (24 CFR Part 35.1350(d)) to all rehabilitation work to be performed regardless of defective paint.
2. MHDC staff reviews the level of HOME rehabilitation assistance and calculates the applicable lead-based paint requirements.

For multifamily developments receiving funds from the HOME Rental Production Program:

1. A lead paint inspection or risk assessment must be performed by a licensed lead-based paint professional.
2. MHDC staff reviews the results and determines mitigating items that must be addressed prior to the completion of construction.

The rehabilitation scope of work must integrate both “lead” and “non-lead” triggered activities. (Provide the preliminary work write-up to Risk Assessor, then incorporate the assessment’s findings.)

1. **De Minimis Levels:** *De minimis levels* are exceptions to safe work practices **and defined as work** which disturbs less than:
 - a. 10 square feet on exterior surfaces;
 - b. 2 square feet in any one interior room or space; or
 - c. 10 percent of area of a interior or exterior component with a small area (sills, baseboards, etc.).
2. **Lead-Triggered Activity:** A lead-triggered activity is anything that is a lead hazard, or reduces a lead hazard, including:
 - a. Any defective paint surface (until tested to be non-lead)
 - b. Any rehabilitation work greater than the *de minimis levels* disturbing a lead painted surface to be performed with safe work practices
 - c. Any abatement activities from risk assessment
3. **Course of Action:**
 - a. Determine the level of hazard evaluation and reduction (24 CFR 35.915-930).
 - b. Presume lead or evaluate (*option – 24 CFR 35.120*); evaluation recommended.
 - c. Perform Lead Paint Inspection and/or risk assessment and/or Lead Hazard Screen by licensed personnel.

- d. Include in the scope of work for “lead” activities the interim controls and/or abatement recommendations from a risk assessor and safe work practices for items determined to be lead paint.
- e. Determine impact of ‘occupant relocation’ requirements (24 CFR 35.1345).
- f. Based on the results of Lead Paint Inspection and/or risk assessment and/or Lead Hazard Screen, establish contractor qualifications (see *Safe Work Practices 24 CFR 35.1325-1330*), safe work practices to be used (including occupant protections), and achieve clearance in bid invitation and contract.
- g. Relocate occupants and belongings, if necessary (24 CFR Part 35.1345).
- h. Supervise work so that “Safe Work Practices” at 24 CFR Part 35.1350 are used: worksite is prepared/contained and occupants and their belongings are protected, prohibited methods of paint removal are not used, specialized cleaning is conducted to achieve clearance, certification is made that Safe Work Practices have been followed.
- i. Collect lead dust wipe and soil clearance samples upon the completion of the work.
- j. Achieve clearance and obtain report approval after all rehab work is done.

E. Lead Hazard Evaluation Methods & Qualifications

1. **Visual Assessment (accepted for HOME Repair only):** A visual assessment for deteriorated paint consists of a visual search for cracking, scaling, peeling, or chipping paint. This assessment does not identify the presence of lead, only the potential danger. The assessment is performed by either a licensed risk assessor or Housing Quality Standards (HQS) inspector trained in visual assessment.
2. **Lead Paint Inspection:** A lead-based paint inspection is a surface-by-surface investigation to determine the presence of lead-based paint through XRF analyzer testing and laboratory analysis. Lead Paint Inspections must be conducted by state licensed lead paint inspectors or risk assessors and are only valid for one year.
3. **Risk Assessment:** A risk assessment is a comprehensive investigation of a dwelling to identify lead-based paint hazards that includes paint testing, dust and soil sampling, and a visual evaluation. Risk assessment details are summarized in a written report with recommendations for actions. A licensed risk assessor must conduct the assessment.
4. **Lead Hazard Screen:** A lead hazard screen is similar to a risk assessment. The sampling is less extensive, but the requirements are more stringent. If the unit fails the lead hazard screen, then a full risk assessment must be performed. The screen must be performed by a licensed risk assessor.

F. Lead Hazard Reduction Methods

1. **Paint Stabilization:** Paint stabilization reduces exposure to lead-based paint by addressing deteriorated paint on exterior and interior surfaces through repairs, safe paint removal, and repainting or abatement.
2. **Interim Controls:** (24 CFR 35.1330) Interim controls are short-term measures (lasting less than twenty years) to reduce human exposure to lead-based paint hazards through repairs, painting, maintenance, special cleaning, occupant protection measures,

clearance, and education programs. Ongoing monitoring is necessary in all situations. Interim control methods require safe practices and include:

- a. **Paint stabilization** – All deteriorated paint on exterior and interior surfaces must be stabilized through repairs, safe paint removal, and repainting.
- b. **Treatment for friction or impact surfaces** – If lead-based paint is found and exceeds acceptable levels or is presumed to exceed it, the conditions creating friction or impact with surfaces with lead-based paint such as those that rub, bind, or crush must be corrected. Examples of this work include re-hanging binding doors, installing door stops, or reworking windows.
- c. **Treatment for chewable surfaces** – If a child under six has chewed surfaces known to contain lead-based paint or if lead-based paint is presumed, these surfaces must be enclosed or coated so they are impenetrable.
- d. **Lead-contaminated dust control** – All horizontal surfaces that are rough, pitted, or porous such as bare floors, stairs, window sills, and window troughs must be covered with a smooth, cleanable covering or coating such as metal coil stock, plastic, polyurethane, or linoleum. Carpeting must be vacuumed or rugs must be removed and vacuumed on both sides. Vacuuming must be done using HEPA vacuums.
- e. **Lead-contaminated soil control** – If soil is lead-contaminated, interim controls that may be used include impermanent surface coverings such as gravel, bark, and sod as well as land use controls such as fencing, landscaping, and warning signs.

Interim Controls (including Standard Treatments) (*24 CFR 35.1330*): the workers should be trained in accordance with the OSHA Hazard Communication Requirements (*29 CFR 1926.59*) and either be supervised by an individual certified as a lead-based paint abatement supervisor or must have successfully completed one of the following courses:

- LBP abatement worker or supervisor (*40 CFR 745.225*);
 - Operations and Maintenance (NETA);
 - Remodeler's and Renovator's Lead-Based Paint Training Program developed by HUD and the National Association of the Remodeling Industry; or
 - An equivalent course approved by EPA or HUD.
3. **Abatement**: Abatement mitigates lead-based paint and lead-based paint hazards by either permanently removing lead-based paint and its dust, or encapsulating or enclosing the lead-based paint for a period of twenty years or more, replacing components that have lead-based paint, and removing or permanently covering lead-contaminated soil. Limited or no monitoring may be required based upon the action taken. Encapsulation and enclosure require ongoing monitoring and maintenance to check their effectiveness.

Abatement must be conducted by certified abatement workers who have successfully completed a lead-based paint abatement worker course accredited by EPA. These workers must be supervised by a lead-based paint abatement supervisor certified under a State program authorized by EPA or conducted by EPA.

G. Safe Work Practices 24 CFR 35.1350

1. Prohibited Methods of Paint Removal: (24 CFR 35.140)

The following methods *shall not be used* to remove paint that is, or may be, lead-based paint:

- a. Open flame burning or torching;
- b. Machine sanding or grinding without a high-efficiency particulate air (HEPA) local exhaust control;
- c. Abrasive blasting or sandblasting without HEPA local exhaust control;
- d. Heat guns operating above 1100 degrees Fahrenheit or charring the paint;
- e. Dry sanding or dry scraping, except dry scraping in conjunction with heat guns or within 1.0 ft. (0.30 m.) of electrical outlets, or when treating defective paint spots totaling no more than 2 sq. ft. (0.2 sq. m.) in any one interior room or space, or totaling no more than 10 sq. ft. (2.0 sq. m.) on exterior surfaces; or
- f. Paint stripping in a poorly ventilated space using a volatile stripper that is a hazardous substance in accordance with regulations of the Consumer Product Safety Commission at 16 CFR 1500.3, and/or a hazardous chemical in accordance with the Occupational Safety and Health Administration regulations at 29 CFR 1910.1200 or 1926.59, as applicable to the work.

2. Occupant Protection: (24 CFR 35.1345)

Occupants shall not be permitted to enter the worksite during hazard reduction activities (unless they are employed in the conduct of these activities at the worksite), until after hazard reduction work has been completed and clearance, if required, has been achieved.

Occupants shall be temporarily relocated before and during hazard reduction activities to a suitable, decent, safe, and similarly accessible dwelling unit that does not have lead-based paint hazards, except if:

- a. Treatment will not disturb lead-based paint, dust-lead hazards or soil-lead hazards;
- b. Only the exterior of the dwelling unit is treated, and windows, doors, ventilation intakes and other openings in or near the worksite are sealed during hazard control work and cleaned afterward, and entry free of dust-lead hazards, soil-lead hazards, and debris is provided;
- c. Treatment of the interior will be completed within one period of eight daytime hours, the worksite is contained so as to prevent the release of leaded dust and debris into other areas, and treatment does not create other safety, health or environmental hazards (e.g., exposed live electrical wiring, release of toxic fumes, or on-site disposal of hazardous waste); or
- d. Treatment of the interior will be completed within five calendar days, the worksite is contained so as to prevent the release of leaded dust and debris into other areas, treatment does not create other safety, health or environmental hazards; and, at the end of work on each day, the worksite and the area within at least 10 feet (3 meters) of the containment area is cleaned to remove any visible dust or debris, and occupants have safe access to sleeping areas, and bathroom and kitchen facilities. (HUD Interpretive Guidance J24 – The term “interior work” refers to work in a single room. See also R18 and R19.)

The dwelling unit and the worksite shall be secured against unauthorized entry, and

occupants' belongings protected from contamination by dust-lead hazards and debris during hazard reduction activities. Occupants' belongings in the containment area shall be relocated to a safe and secure area outside the containment area, or covered with an impermeable covering with all seams and edges taped or otherwise sealed.

3. Worksite Preparation: (24 CFR 35.1345)

The worksite shall be prepared to prevent the release of leaded dust and contain lead-based paint chips and other debris from hazard reduction activities within the worksite until they can be safely removed. Practices that minimize the spread of leaded dust, paint chips, soil and debris shall be used during worksite preparation.

A warning sign shall be posted at each entry to a room where hazard reduction activities are conducted when occupants are present, at each main and secondary entryway to a building from which occupants have been relocated, or, for an exterior hazard reduction activity, where it is easily read 20 feet (6 meters) from the edge of the hazard reduction activity worksite. Each warning sign shall be as described in 29 CFR 1926.62(m), except that it shall be posted irrespective of employees' lead exposure and, to the extent practicable, provided in the occupants' primary language.

4. Specialized Cleaning:

After hazard reduction activities have been completed, the worksite shall be cleaned using cleaning methods, products, and devices that are successful in cleaning up dust-lead hazards, such as a HEPA vacuum or other methods of equivalent efficacy, and lead-specific detergents or the equivalent.

5. De Minimis Levels: Safe Work Practices are not required when maintenance or hazard reduction activities do not disturb painted surfaces that total more than:

- a. 10 square feet (2 square meters) on exterior surfaces;
- b. 2 square feet (0.2 square meters) in any one interior room or space; or
- c. 10 percent of the total surface area on an interior or exterior type of component with a small surface area. Examples include window sills, baseboards, and trim.

H. Worker Protection

1. Prior to the start of any stabilization, demolition and / or renovation work that will impact building components with lead-based paint, the contractor performing the work must have a written respiratory protection program in place (*OSHA 29 CFR 1910.134*), documentation indicating that his or her workers have had medical surveillance, are medically cleared to wear a respirator, and have passed a qualitative fit test.
2. In accordance with OSHA 19 CFR 1926.62 (Lead in Construction Standard), an initial employee exposure assessment must be conducted (through personal lead air monitoring) during stabilization, renovation and / or demolition activities that will impact building components with lead-based paint. Respiratory protection will be required for each activity until air monitoring many prove exposures are below the Permissible Exposure Limit (PEL).

I. Lead Hazard Criteria

DUST (EPA and most other states)

| | |
|------------------------|--|
| Floors | < 40 micrograms per square foot (40 µg/ft ²) |
| Window Sills (stools) | < 250 µg/ft ² |
| Window Troughs (wells) | < 400 µg/ft ² (clearance only) |

PAINT (HUD, EPA, Kansas, Missouri, and most other states)

| | |
|--------------------|--|
| XRF (On-Site Test) | ≥ 1.0 milligrams per square centimeter (mg/cm ²) |
| AAS (Laboratory) | ≥ 0.5% by weight |
| CPSC (1978 law) | ≥ 0.06% by weight (maximum lead concentration for residential paints only) |

AIR (OSHA)

| | |
|----------------------------------|--|
| Action Level (AL) | ≥ 30 micrograms per cubic meter (µg/m ³) |
| Permissible Exposure Limit (PEL) | ≥ 50 µg/m ³ |

WASTE (EPA – Under RCRA, there are four characteristic tests. The two not shown below are *Ignitability* and *Reactivity*. The two types of characteristic tests shown below are the types that fail most often.)

| | |
|------------------|---|
| Toxicity (TCLP) | ≥ 5 parts per million (PPM) – 7 other metals also |
| Corrosivity (pH) | < 2.0 pH units or > 12.5 pH units |

WATER (EPA – SDWA)

| | |
|----------------|------------------------------|
| Drinking Water | < 15 parts per billion (PPB) |
|----------------|------------------------------|

BLOOD

| | |
|--------------|--|
| OSHA (Adult) | < 40 micrograms per deciliter (µg/dl) 2 @ ≥ 50 µg/dl - requires medical removal |
| CDC Children | < 10 µg/dl |
| Adults | < 25 µg/dl (recommendation) |

SOIL (EPA and most other states)

| | |
|------------|--|
| Bare Soils | < 400 PPM – high traffic/high contact/play areas < 1200 PPM – all other areas of property |
|------------|--|

(reference: Baker Environmental Consulting, Inc.)

J. Resources on Lead Based Paint Regulations

- HUD's Lead-Safety Regulation – 24 CFR Part 35
“Requirements for Notification, Evaluation, and Reduction of Lead-Based Paint Hazards in Federal Owned Residential Property and Housing Receiving Federal Assistance; Final Regulation (September 15, 1999)”
- HUD Interpretive Guidance September 21, 2000

- HUD Guidelines for Evaluation and Control of Lead-Based Paint Hazards
- HUD Office of Healthy Homes & Lead Hazard Control
 Website: <http://www.hud.gov/offices/lead>
 Regulation Hotline: (202) 755-1822 ext 104
 E-mail: lead_regulations@HUD.gov
- The National Center for Lead-Safe Housing
 Website: www.leadshousing.org
 Implementing HUD's Lead-Safety Regulation
 Internet Guide to the Rule, Model Documents and Specifications
- The Lead Listing (for HUD)
 Website: www.leadlisting.org
 Hotline: 1 (888) LEADLIST
 Lists companies providing lead services and training opportunities
- The Environmental Network
 Website: <http://www.environmentalnetwork.com/>
 Lists companies providing lead services
- EPA
 Website: www.epa.gov/opptintr/lead
- National Lead Information Center
 Hotline: 1 (800) 424-5323

**AMENDMENT TO AIA DOCUMENT B181
Standard Form of Agreement Between
Owner and Architect for Housing Services**

The Provisions of this Amendment supersede and void all inconsistent provisions of the Agreement.

1. The Owner and the Architect represent that they are familiar with MHDC requirements, including all standards as set forth in publications given to them by MHDC for this Project and will perform all services in accordance with the applicable requirements of MHDC.
2. The Owner and the Architect recognize the interest of MHDC in the Project and any action or determination by either the Owner or the Architect is subject to acceptance or rejection by MHDC.
3. The portion of the Architect's services and responsibilities and the Owner's responsibilities shall not be sublet or delegated to anyone not acceptable to MHDC.
4. The Owner agrees to follow MHDC requirements regarding the use of off-the-shelf design plans and provide MHDC a copy of the invoice and the terms of the purchase which demonstrate whether the Owner has a right to reproduce the off-the-shelf design plans for future use, whether the Owner has a right to vary from the original plan, and whether the Architect of record has been given the right to (a) make minor modifications and/or define in further detail all portions of the off-the-shelf design plans as may be necessary for the site where the improvements are to be constructed; (b) take possession, sign, seal and date the off-the-shelf design plans.
5. The Architect will advise MHDC as well as the Owner of any omissions, substitutions, defects and deficiencies observed in the Work of the Contractor.
6. The principal of the Architect shall stamp all drawings and sign off on monthly and final inspection reports before its submission to MHDC.
7. The Architect shall issue Certificates of Payment and Certificates of Substantial Completion. These certificates shall be in the form prescribed by MHDC.
8. The Architect of record shall make a minimum of (check one) one visit two visits to the project per month throughout the construction period. MHDC in its sole discretion has the right to request additional inspections by the Architect as it deems necessary. Copies of the inspection reports shall be provided to MHDC.
9. The Architect of record shall perform a footing/foundation inspection and a complete open wall inspection of each building prior to the installation of sheet rock. Copies of these inspections reports shall be provided to MHDC.
10. The Architect will furnish copies of all field orders and field reports to MHDC in addition to the Owner.
11. The Agreement shall not be terminated without five days prior written Notice to MHDC.
12. The Owner and the Architect shall recognize as a valid reason for termination, any request by MHDC for termination because of inadequate performance, undue delay or representation which may make the further services of the Architect unacceptable to MHDC.
13. If the Project for which the drawings or specifications prepared by the Architect has not been completed and there is a default or foreclosure, MHDC may use the drawings or specifications to complete construction of the Project without additional cost.

14. The Architect shall participate in a latent defects inspection no sooner than nine (9) months after the date of Substantial Completion, nor later than eleven (11) months. The Architect shall issue a list of construction contract defects arising out of this inspection to the Owner, Contractor and MHDC.

(SEAL)
ATTEST:

(SEAL)
ATTEST:

OWNER:

By: _____

ARCHITECT:

By: _____

SAMPLE PUNCH LIST

AAA Architects
1111 South First Street
First City, Missouri
Phone 816-555- 1111 Fax 816-555-1112

Inspection Report for First City Apartments
2222 South Second Street
First City, Missouri

Date of Inspection

Note: The following are to be completed or corrected by the Contractor prior to final acceptance of the Project. The Contractor shall return a copy of this list to the Architect (*or Engineer*) after each item has been addressed, properly dated and initialed by the person responsible for corrective action.

| DESCRIPTION | CONTRACTOR ADDRESSED INITIAL & DATE | ARCHITECT ACCEPTED INITIAL & DATE |
|---|---|---|
| Site | | |
| 1. Curb cuts not installed | _____ | _____ |
| 2. Lawn not seeded | _____ | _____ |
| Building #1 | | |
| 1. Install screens | _____ | _____ |
| 2. Termites have eaten hole in living room floor. Repair and apply termite treatment. | _____ | _____ |

*This format is recommended in terms of the layout. Other information may be added per design firm's policy if desired. The basic information, however; the work descriptions, the Contractor's initialed response for **each** item and the Architect's (or Engineer's) acceptance of **each** item is required.*

FINAL ARCHITECT'S CERTIFICATION

Development Name:
MHDC No.

TO: MISSOURI HOUSING DEVELOPMENT COMMISSION

In order to induce the **MISSOURI HOUSING DEVELOPMENT COMMISSION** ("MHDC") to advance the final installment of permanent loan proceeds in the amount of \$_____ for the development of _____, located in _____, **Missouri** ("Development"), and with the intent that MHDC rely upon the statements set forth herein as a basis for so doing, the undersigned hereby certifies as follows:

The above referenced Development has been built in accordance with the Plans and Specifications, which were prepared by _____, a Missouri _____ and incorporated as part of the Construction Contract. Any changes made to the approved Contract Documents during construction have been documented after review and approval by the undersigned and MHDC.

All defined terms of this document bear the same meaning as in the Construction Contract executed in conjunction with the Development.

ARCHITECT:

By: _____
Name: _____
Title: _____

Date: _____