



Design Standards Manual for New Construction and Rehabilitation

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Links for References

ADA accessibility guidelines	https://www.access-board.gov/ada/#about-the-a
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	da accessibility-standards
International Code Council	https://www.iccsafe.org/
Energy Star	https://www.energystar.gov/
NSPIRE	https://www.hud.gov/program_offices/public_indian_housing/reac/nspire
ADFA's Qualified Allocation Plan	https://adfa.arkansas.gov/files
ASTM International	https://www.astm.org/
24 CFR 92.251	https://www.ecfr.gov/current/title-24/subtitle-A/part-92/subpart-F/section-92.251
24 CFR 93.301	https://www.ecfr.gov/current/title-24/subtitle-A/part-93
Uniform Federal Accessibility Standards	https://www.accessboard.gov/aba/ufas.html#introduction
Crime Prevention Through Environmental Design	https://www.cpted.net/
Safe Drinking Water Act	https://www.epa.gov/sdwa
Build America, Buy America (BABA) HUD.gov / U.S. Department of Housing and Urban Development	https://hud.gov/baba

1. General Requirements

1.1. Design Standards

These Design Standards shall apply when Arkansas Development Finance Authority (“ADFA”) funding is used for all new construction and rehabilitation projects financed through ADFA’s Programs. ADFA’s Design Standards are provided in conformance with the requirements of 24 CFR 92.251 and 24 CFR 93.301 and are to be used as a guideline to meet or exceed all applicable federal, state, county, and local codes. These standards also serve as a vehicle to promote and enforce modern construction and design practices for builders, contractors, and design professionals who wish to use funding from ADFA. Through implementation of these standards, ADFA seeks to ensure that its funding promotes the creation of safe, durable, well-constructed projects for the long-term benefit of residents.

1.2. Quality Assurance

General Contractors and/or subcontractors shall furnish a written material and labor warranty on all units, materials, and construction for a period not less than one full year after the date of issuance of a certificate of occupancy or owner’s final inspection acceptance. All construction must meet the workmanship standards set forth in this manual.

1.3. Inspection Protocols and Codes

All construction shall comply with applicable federal, state, county, and local codes, planning and zoning requirements, local authorities’ rules, ADFA’s Qualified Allocation Plan (“QAP”), and regulations.

Federal regulations which may pertain to any specific project such as the Fair Housing Amendments Act of 1988, Section 504 of the Rehabilitation Act of 1973, and Americans with Disabilities Act of 2010, as amended, also apply. In the absence of local codes, ADFA adopted the International Existing Building Code as published by the International Code Council (“ICC”) and the National Standards for Physical Inspection of Real Estate (“NSPIRE”) shall apply to all new construction and rehabilitation.

1.4. Universal Design

This manual has been created in part by following HUD’s Residential Remodeling and Universal Design (published 1996), which includes universal features that allow for use by all residents, regardless of age or the presence of a physical disability. Among other details found in this manual, ADFA requires the following universal features on new construction and rehabilitation projects per Section 1.3: Inspection Protocols and Codes.

1.4.1. Minimum Floor Plan Layouts

Ensuring adequate living space is a vital element of design for rental units. ADFA has established a minimum footprint for each bedroom size floor plan. It should be emphasized that these areas are minimums; larger footprints are encouraged to ensure adequate living space for families.

All properties must provide a minimum of one and a half baths in units having three bedrooms, and two full baths in four-bedroom units. In case of a townhouse/split-level type unit, at a minimum, a half bath shall be provided on the ground floor.

Studio units are prohibited for all new construction projects.

Studio units cannot exceed 10% of the total unit mix in rehabilitation projects (except for HOME-ARP non congregate shelter funding).

Floor Plan	Min. Net SF Area	Min. Bedroom SF
1 BR x 1 BA	600 SF	100 SF
2 BR x 1.5 BA	750 SF	100 SF
2 BR x 2 BA	1000 SF	100 SF
3 BR x 2 BA	1100 SF	100 SF
4 BR x 2 BA	1200 SF	100 SF

*Unit areas do not include outside storage, covered porches, patios, balconies, garages, etc.

Minimum Unit Net Area Requirements

(check which one applies)

Units meet the required minimum unit net area, minimum bedroom net area, and the number of required bathrooms stated above for the unit type.

This development contains existing rental units which do not meet the above requirements and, therefore, a waiver must be submitted.

1.4.2. Laundry

New construction must provide washer/dryer hookups and the washer/dryer in each unit. A back up washer and dryer unit is not required in a community building.

For multifamily rehabilitation properties that currently provide a community laundry facility, there is a minimum of one washer/dryer for every 10 units. If existing washer/dryer hookups are present in the units, they must be functional and available.

Single family homes are required to have washer/dryer hookups and a washer/dryer provided in all homes. **1.5. Elderly Designated Properties**

All new construction and rehabilitation multifamily projects for elderly residents, age 62 or older, shall have all units located at the grade level or on an elevator-accessible floor in compliance with ICC A117.1 Section 1005 Type C Visitable Units. See the current QAP for scoring.

1.6. Energy Efficiency

All new or rehabilitated projects shall meet Energy Star standards. This includes the building and appliances.

2. Structural

2.1. General Building Arrangement

A site is defined as a parcel of land on which the Low-Income Housing Tax Credit (“LIHTC”), HOME, and/or National Housing Trust Fund (“NHTF”) project will be developed, as described by a unique legal description that will be part of the Carryover Allocation and encumbered by the LURA and/or Declaration of Restrictive Covenants. ADFA will not allocate LIHTC, HOME, and NHTF based on costs associated with a site, or any portion thereof, which was included in a prior ADFA allocation.

No part of any project’s legal description which is subject to an active ADFA restriction shall be released.

Dwelling units shall be equipped with covered entryways that extend a minimum of three feet out from every exterior door not located in basement spaces or where the finished floor of the habitable area is entirely below grade.

All units with a common wall(s) must have adequate thermal insulation provided between adjacent/abutting units. Additionally, a 1-hour fire-rated requirement exists between the demising wall of separate apartment units.

Site plans shall not concentrate three- and four-bedroom units into one area. Concentrating units in such a manner has an adverse impact on parking and site maintenance. Designing for diverse family types by providing a mix of single and multi-bedroom units is encouraged.

In all buildings that are designed to include a multiple number of dwelling units, an enclosed access shall be provided to any of those units that are located above grade. This access may be individual stair enclosures or common stair enclosures; however, if the building is served by an elevator, the elevator must provide access to all units in the building.

2.1.1. Scattered Sites

A scattered site development is any housing development that is:

- Noncontiguous,
- Located within a single county, and
- Comprised solely of low-income units.

A scattered site development must meet the following requirements:

- All units must be rent restricted in accordance with Section 42 and other federal funding sources. •
- Each site within the proposed development must meet all applicable scoring and threshold criteria. •
- All buildings in the development must be under the ownership of one entity.

Single-family scattered site developments will require prior approval by ADFa. Applicants must submit a request for approval by the deadline date outlined in the active ADFa QAP. The request must include the following information:

- Ownership entity name
- Ownership entity contact information
- Proposed development name
- Development construction type (new construction, acq/rehab)
- Structure type (multifamily, single-family)
- Number of sites
- Number of Units/Buildings on each site (to be built/rehabilitated)
- Current use of each site

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- Address of each site
- City/County of each site
- Site location maps outlining the parcel
- Photos of each site
- Any other pertinent information that may be unique to the development.

2.1.2. Single Family Home Developments

Single family home developments must consist of units that are a minimum of three-bedroom and two bathroom with an attached two-car garage. Exceptions can be made to support a maximum of 50% of the units with a two-bedroom and two-bathroom floor plan if there is a proven market demand for 2 BR x 2 BA units. All single-family homes must provide washer/dryer hookups and the washer/dryer.

2.2. General Building Design

The following standards shall be applied in the evaluation of existing and new structures. Correction of all structural damage, deficiencies, and their cause shall be included in the project scope of work.

2.2.1. Foundations

Foundations shall be sound, plumb, and free from significant movement.

Foundation sill height elevations and location on site shall be confirmed as soon as possible after installation. Any discrepancy with the approved documents shall be reported to the Owner and ADFa

immediately.

All concrete slabs in habitable areas shall be 4 inches thick minimum with mid-slab reinforcement. All uninhabitable areas (i.e. crawl spaces) shall have a minimum 3-inch-thick concrete slab.

Wood structural members shall be free from significant deflection and/or cracking, deterioration, rot, or termite damage. Non-toxic treatment for termite control complying with AWPA Standard U1 is required.

Prior to final commitment, when possible, ADFA reserves the right to hire an independent structural engineer registered in the State of Arkansas to perform a structural survey to verify the adequacy of structural members for current loads, and this cost will be conveyed to the developer.

Exterior wall sheathing exposed to roof runoff and backsplash from impervious surfaces shall include a minimum 48-inch-high band of pressure treated plywood.

A moisture-resistant sheathing material is required at the exterior rim-joists/bottom sill plate. The exposed uncoated edge of sheathing shall be sealed.

The structural engineer or architect of record shall be responsible for inspecting the installation of engineered roof trusses including permanent bracing. ADFA shall be provided with the report.

2.2.2. Thermal and Moisture Protection

Installation methods for insulation and requirements for air sealing shall follow the most current Energy

www.energystar.gov /

Star Program Standards. (see www.energystar.gov/)

Exterior wall insulation must have a minimum of R-19 cavity insulation rating.

Roof and attic insulation must have a minimum of R-38 rating.

- Fascia on a building's envelopment can be comprised of metal, vinyl, and/or composite.
(check which one applies)

Metal: 0.019" minimum thickness aluminum, factory finish (coil stock).

Vinyl envelopment: 0.046' minimum thickness.

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Composite: Pre-finished cement fiber board or other durable material as approved by ADFA.

2.2.3. Building Shell

Vinyl siding shall have a minimum thickness of .046 inches.

Membrane roofing shall have a minimum 20-year warranty. All other roof coverings at a minimum should be three tabbed nailed, not stapled. Shingles shall have a minimum 30-year warranty and be anti-fungal. Roof underlayment shall be synthetic, felt, asphalt, or mineral-surface. Additionally, a water protection membrane shall be provided at all roof edges and overhangs.

Rafter or roof truss ventilation baffles shall measure a minimum of two vertical inches by the width of the bay.

Metal drip edge shall be provided at the entire roof perimeter with galvanized steel minimum thickness .026-inch and aluminum .032-inch thickness.

Exterior wall/roof intersections shall have kick-out flashing installed at the bottom of the roof to prevent water from running down the building.

All dwelling unit habitable spaces shall have operable windows with screens (kitchens and bathrooms are exempt except when required for light and/or ventilation by the International Building Code).

All windows in each living space of Accessible and Type A dwelling units shall be provided with accessible controls (i.e. locks, opening hardware). Required opening force for accessible windows shall not exceed 5 pounds.

All new windows with screens shall meet the latest requirements of Energy Star, which is .35 UA and solar not greater than 0.30. All windows must have a 20-year comprehensive warranty, including glass.

2.2.4. Exterior Concrete

Exterior concrete shall conform to the latest revised Standard Specification for Portland Cement, ASTM C595. All concrete shall have a minimum 28-day compressive strength of 3,000 psi and be entrained with 5 percent air with a minimum cement content of 520 lbs. per cubic yard (5.5 sacks). Expansion joint material shall be ½” thick asphalt-impregnated pre-molded fiber, ASTM D1752. It must also follow American Concrete Institute (ACI) 318 and have a minimum 4” thickness for driveways, parking areas, sidewalks, porches, and stoops. Driveways must have fiberglass mesh or 6x6 WWF or 6” thick concrete.

2.2.5. Concrete Finishes

Smooth formwork, no patterns, shall be used for all poured in place walls exceeding 3 feet or more exposure.

2.2.6. Brickwork

Any brick used for construction shall be ASTM C-216, Type FBS, Grade SW, or equivalent, modular size. Siding material of all newly constructed multifamily dwelling units consisting of 5 or more units shall consist of a minimum of forty percent (40%) brick, stone, or other ADFA-approved masonry-type materials. The area calculation of forty percent shall not include window and door areas, nor masonry below finished grade. For Single-Family Dwellings, siding materials shall consist of any product allowed by the current State-adopted International Residential Code with ADFA approval.

All new construction projects must have a masonry skirt that runs around the building. It will extend up no less than 2.5 feet above the ground floor level of the interior.

2.3. Concrete Masonry Units (CMU)

Stucco or split face shall be used for all CMU walls exceeding 3 feet or more exposure.

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2.4. Roofing

The essential requirement for roofing is that the materials used are professional in nature, installed properly, and are designed to resist the elements and withstand adverse weather conditions. The following standards shall be applied:

Shingles: Shingles at a minimum must be 215 lb., Seal 3-tab type over 30 lb. felt with metal drip edge, with a minimum of 30-years product warranty with nails - no staples allowed.

Felt Paper: Roofing must include 30 lbs. or greater felt paper.

Decking: Roof decking shall be a minimum of 7/16 inch OSB with fastening clips; reflective coating is required.

Anti-fungal roof treatment: Roofing shall have anti-fungal treatment applied to prevent fungal growth and the resulting damage.

Slope: The minimum roof slope on all new construction shall be 4 inches vertical to 12 inches horizontal.

Gutters and Downspouts: All structures shall have gutters and downspouts and be appropriately designed with a minimum 5” gutter and a 2”x 3” downspout.

Downspouts: Downspouts need to connect to central drainage or have concrete splash-blocks at the end

of the downspouts to direct rainwater away from the building's foundation.

Gable vents: Gable vents on roofing must be constructed of either vinyl or aluminum/metal. Attics: Attics must be properly vented, either with gable/ridge vents and/or motorized vents. **2.5. Steel Lintels**

Steel lintels, when specified for openings in masonry walls, shall be galvanized, primed, and painted.

3. Environmental

3.1. Lead Based Paint

When ADFA funds are utilized, all project sites shall be certified free of Lead Based Paint ("LBP") Hazards upon completion of the project. If the home was built prior to 1978, the home must be tested for LBP prior to the approval of the work. All LBP Hazards must be abated or corrected per 24 CFR Part 35, subparts A, B, J, K, and R; 24 CFR Part 92; 92.355; 24 CFR Part 93; and 93.351 and cleared prior to final approval.

3.2. Safe Drinking Water Act

The [Safe Drinking Water Act \(SDWA\)](#) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. New construction and rehabilitation projects will follow the EPA's rules and regulations to provide occupants with clean and safe drinking water.

(For NHTF rehabilitation only.) These Projects with potable water systems must use only lead-free pipes, solder, and flux. These projects will provide documentation to ADFA for proof of compliance. This may include architectural plans, building specifications, and certification by qualified professional.

3.3. Radon Reduction

Owner must provide radon testing of properties where buildings will be used for residential occupancy. In the case of multiple buildings within a development, it is preferred that all residential units with occupied

rooms at or below ground level shall be tested in each building. However, the minimum number of apartments to be tested should be at least twenty-five percent of randomly selected ground level units, but no fewer than one unit in each building.

Upper levels shall only be tested if there are frequently occupied rooms located above untested ground contact areas. The building being tested shall have all windows and doors shut twelve hours prior to and during the entire test period. Routine ingress and egress are allowed.

The most ideal time for testing is between the colder months of November through March. Testing shall not be conducted during abnormal weather conditions or during any structural changes to the building or HVAC system. Radon tests shall be placed where they are least likely to be disturbed and in accordance with the following: (1) minimum of 20 inches above floor, (2) three feet away from exterior walls, doors, or windows, (3) one foot away from interior walls, (4) four inches from other objects, (5) away from any vents, appliances, and potential drafts, and (6) away from any heat source including direct sunlight and areas of high humidity.

In cases of substantial rehabilitations and new construction projects, an active radon mitigation system shall be incorporated into the design specifications. For non-substantial rehabilitations, Owner may avoid having to install mitigation systems if ADFA is provided with an official test showing a radon measurement below 4.0 pCi/L.

The radon mitigation system includes the following features:

- A gas permeable layer, such as 4-inch gravel, placed beneath the slab to allow soil gases to move freely underneath the building.
- Plastic sheeting over the gas permeable layer and under the slab to help prevent soil gases from entering the home.
- Sealing and caulking all openings in the foundation floor to reduce soil gas entry.
- A vent pipe, such as 6-inch PVC pipe, to run from the gas permeable layer through the building to the roof to safely vent soil gases above the building.
- Electrical roughing to junction box(es) in the attic as required to allow installation of in-line mechanical ventilation fan(s).

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- The new building should be tested for radon after construction is completed and is ready for occupancy.

If radon results are at or above 4.0 pCi/L, the existing system should be activated by installing an in-line fan.

Post-construction radon re-testing and reporting shall be provided for all rehabilitation projects that include exterior envelope improvements. For minor projects where exterior envelope improvements are minimal to none, post-construction radon re-testing and reporting shall be provided at ADFA's discretion.

3.4. Polychlorinated Biphenyls (PCBs) in Building Materials

Polychlorinated biphenyls ("PCBs") are materials that were commonly found in some building materials in the following areas until 1979:

- Door and window caulk, grout, expansion joints, and other joint materials.
- Paints, sealants, coatings, varnishes, and lacquers.
- PCB and asbestos-coated metal sheets, asphaltic roofing, and tar paper materials.
- Fluorescent light ballasts.

ADFA follows the EPA's recommendations with regard to testing and remediation and abatement of

PCBs in building materials.

For buildings constructed and/or renovated between 1950 and 1979, ADFA recommends an applicant follow a presumptive approach to PCB remediation/abatement planning. This will include the identification of all suspect materials and the preparation of a cost estimate based on the proposed project scope. Cost estimates and all reports are to be provided to ADFA with the project application.

Encapsulation may be useful for the reduction of air emissions from secondary sources, such as contaminated building materials under and around PCB-containing caulk or paint that has been removed. Because each site will present unique circumstances, ADFA requires the applicant to consult with their EPA Regional PCB Coordinator. For applications including the complete demolition of a building, ADFA recommends the applicant follow a similar procedure. However, upon an awarding of funding, ADFA would require testing of all suspect materials within the property to provide the most accurate cost estimate.

3.5. Mold and Moisture

Damp indoor environments have been shown to negatively impact health. Inspections shall be conducted for visual evidence of dampness, moisture incursion, moisture damage, and mold. Moisture meters may be used as an inspection aid as long as the meter to be used is designed to measure moisture content on the substrate of interest. Water sources resulting in indoor dampness must be located and remediated.

Moldy building materials and/or porous personal belongings and furnishings must be discarded. Indoor relative humidity should be maintained below 60% at all times to minimize indoor mold growth.

3.6. Flood Plain and Wetlands

Flood maps designate zones where flooding is likely to occur. All areas undergoing development must be at least one foot above the flood plain.

No construction/rehabilitation project will be funded if any part of the project's parcel(s) is located in a flood zone. These flood zones include but are not limited to areas noted as "Special Flood Hazard Areas" and "Other Areas of Flood Hazard" on FEMA flood maps including 100-year floodplains, 500-year floodplains, and regulatory floodways; furthermore, no projects which require the completion of HUD's 8-step decision making process will be funded.

No construction/rehabilitation project will be funded if any part of the project's parcel(s) contains a wetland.

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The U.S. Fish & Wildlife Service's Wetland Mapper shows the location of wetlands. If you feel that the Wetlands mapper shows a wetland in error then, on the parcel(s) in question, a professional wetland delineation—which shows that the parcel(s) does not contain a wetland—must be completed prior to submission of a funding application.

4. Opening and Fenestrations

4.1. Exterior Doors

Exterior Door shall be 1 ¾" thick 6 panel, steel, fiberglass material, or with limited panes of glass, insulated and be appropriately finished as recommended by the manufacturer. All exterior doors shall have a U-factor equal to or less than the requirements of the current ICC Energy Conservation Code.

- Doors must be metal-clad wood design or hollow-metal panel design.
- Doors must have a minimum 34” clear opening.
- Sliding glass doors are not permitted for all project types.
- Doors with windows will be allowed for patio areas.

If an exterior door is located in a rated firewall, the door, hinge, and hardware must be rated to the equivalent hourly fire rating.

4.1.1. Exterior Hardware

All exterior doors shall have a lever key-lock latch and security accessories (eyelet peep hole and deadbolt). • Deadbolts must have a thumb latch design.

- Deadbolts cannot use a “dual-key” design.

4.1.2. Exterior Storm Doors

All exterior storm doors, if installed, shall be provided with a manufacturer's designation specifying the type of tempered glass and the safety glazing standard with which it complies, which is visible at the final installation.

4.2. Windows

All window frames must be solid vinyl. Double hung or Single hung type must have at a minimum the lower sash able to slide with a removable bug screen.

All glazing shall be double-paned with low E with Argon.

The vapor seal on the glazing must have a minimum ten-year warranty.

All windows shall have a minimum one-year warranty on the operation of the window.

All windows shall have a National Fenestration Rating, SHGC Rating and U-Factor meeting minimum energy code requirements as required by the International Energy Conservation Code as currently adopted by the State of Arkansas.

All windows should be made to open, except for kitchen and bathrooms if powered exhaust ventilation is provided. Additionally, windows installed only for design/decoration or illumination do not need to open. This includes small accent windows, door lites, and other windows included for the purpose of design and accent only.

No unrated windows shall be placed in a rated firewall. A rated wall must have a rated window.

In all construction, bedrooms shall be provided with screened, operable egress windows to the exterior of the building.

4.3. Entry Areas/Patios

Entries to dwelling units with entry pads must have an area of 5’x 5’ or more and have a minimum of a 1/4” per foot slope.

5. Site and Flatwork

Buildings shall be planned and located so that the spaces between them become positive elements in the site plan, and not just leftover portions of the site which happen not to be occupied by buildings. Buildings, roads, parking areas, recreational facilities, paths and landscaping of plants and site furnishings shall be related properly to each other, to the sun, to natural features, to topography, and to views on and off the site, in a well-designed assembly.

5.1. Roadways, Driveways, and Parking Lots

Roads, driveways, and parking lots shall be continuously paved asphalt or concrete. Project must provide vehicular routes for inhabitants, visitors, and service needs, and on-site parking for each dwelling. Parking areas shall be located and sized appropriately and shielded by topography or evergreen plantings.

The following specifications must be adhered to:

- 1-inch wearing course pavement.
- 2-inch base course pavement.
- 6-inch crushed gravel.
- 12-inch bank run gravel.
- Asphalt paved areas must be finished with concrete curbing.
- Sidewalk access must be provided to all parking spaces.

Property Parking Minimums:

All projects must have six parking spaces for every four units, inclusive of handicapped units. 5.1.1. Accessible Parking Spaces

All multifamily properties must meet or exceed expectations for accessible parking for persons with disabilities. Parking must adhere to ADA accessibility guidelines ([Section 208.2](#)).

Accessible parking spaces are required for each parking facility on a site, such as lots and garages. Requirements apply equally to public and employee or restricted parking. On sites with multiple parking facilities, the minimum number of accessible spaces must be calculated separately for each parking facility instead of on the combined total of parking spaces provided on the site. At least one of every six accessible spaces, or fraction of six, in each parking facility must be sized to accommodate vans.

Where at least one parking space is provided for each dwelling unit, at least one accessible space is required for each mobility accessible unit. Spaces must be located on the shortest accessible route to the dwelling unit entrance they serve (§208.3.2). Those assigned to specific units are not required to be identified by signs (§216.5, Ex. 2). If the total number of resident spaces is less than the total number of units, accessible parking is based on the scoping table in §208.2 (but providing one accessible space for each mobility accessible unit is advisable).

Vehicle spaces must be a minimum of 96" wide.

Van-accessible spaces must be a minimum of 96" wide with a 60" access aisle. Two spaces can share one access aisle.

5.1.2. Single Family Home Driveways

Single family homes with a single driveway and duplexes with two separate driveways must have driveways that are constructed of concrete. Asphalt surfaces are not acceptable.

The concrete shall conform to the latest revised Standard Specification for Portland Cement, ASTM C595.

All concrete shall have a minimum 28-day compressive strength of 3000 psi and be entrained with 5 percent air with a minimum cement content of 520 lbs. per cubic yard (5.5 sacks).

Expansion joint material shall be ½" thick asphalt-impregnated pre-molded fiber, ASTM D1752.

The concrete for driveways, parking areas, sidewalks, porches and stoops must follow American Concrete Institute (ACI) 318 and have a minimum thickness of 4".

5.2. Pedestrian Routes and Recreation Areas

Pedestrian routes and recreation areas shall be separated from vehicular ways to the fullest extent possible so as to provide safety to the inhabitants. Family housing developments shall be designed to provide routes which cross as few vehicular ways as possible and which are appropriate for children leading from dwellings to recreation areas, school bus stops, and municipal streets. Sidewalks and pedestrian crossing(s) shall be made accessible to the handicapped and shall be located so as to enhance neighborhood walk ability.

Sidewalks shall be paved using the following criteria:

- 2-inch wearing course pavement
- 6-inch crushed gravel
- 60”+ wide concrete surfaces

5.3. Garbage and Trash

Dumpsters and large bins shall be used for family housing if regular municipal collection service is not available. Dumpsters and bins shall be placed on concrete pads. Enclosures shall be provided for all collection areas to maintain orderly collection, neat appearance, and sanitary conditions; to deter access by animals; and to minimize hazards to playing children. Locations and numbers shall be convenient to the inhabitants served, and accessible to the collecting vehicle, but shall be placed, screened, or related to other facilities so as to be unobtrusive. Trash areas must be covered, or dumpsters must have lids, to provide protection from rain, wind, and snow.

In all types of multifamily projects, it is recommended the site will provide at minimum 8 cubic yards of dumpster space per 20 units on site. Dumpsters should be emptied at a minimum once per week. Alternative pick up schedules and dumpster size will be considered.

5.4. Mailboxes

Mailboxes, if provided in centralized, outdoor locations, shall be protected from weather (along with the tenant), accessible to the mail carrier, convenient to the inhabitants, handicapped accessible, and located, screened, or related to other facilities so as not to be obtrusive.

5.5. Exterior Lighting

Exterior lighting shall be provided for walkways and parking areas, independent of dwelling unit lighting, and shall be integrated with features of the site to provide a coordinated, harmonious, and uncluttered streetscape.

5.6. Utilities

Utilities shall be centralized wherever practicable to realize economies of efficiency in operation or maintenance.

Electrical entrances shall be underground leading from a point where overhead service does not intrude upon the residential scale. This does not apply to rehabilitation projects.

Water service to be replaced or constructed to units shall be installed with methods and materials as approved by the IRC and the International Plumbing Code.

Sanitary Sewer/Private Septic service to be replaced or constructed to units shall be installed with methods and materials as approved by the IRC, the International Plumbing Code, or the Private Sewer Disposal Codes.

5.7. Outdoor Seating Areas

Handicapped accessible outdoor seating areas shall be provided in locations and numbers appropriate for

the size of the development which they will serve. Exterior seating and common area seating shall have back and arm rests, unless they are not designed to have them (e.g. picnic table). Seating shall be planned in family housing developments to relate to children's play areas for use of attending adults, and in elderly housing developments to observe centers of activity on and off the site.

5.8. Outdoor Recreation Facilities

Outdoor recreation facilities shall be an elective design element that is not required by ADFA. However, if installed, all equipment must be properly maintained to reduce risk of hazards and other threats to health and safety.

5.9. Landscaping

Tree species shall be selected for form, size, and rate of growth to provide wind barriers, shading during the summer, and sunshine in the winter. Non-invasive, native, drought-resistant plants shall be selected according to conditions of exposure and according to color, texture, and other features that will enhance the aesthetics of the site. Root structures shall be considered for their required space, effects on nearby pavements, and possible interference with subsurface utilities.

Additionally, irrigation/sprinkler systems are required to be included in new construction and substantial rehabilitation. Irrigation, when properly installed, encourages plant and lawn growth that is sustainable and encourages proper drainage during weather events (snow, rain, flooding). Generally, proper irrigation increases the aesthetic appearance of properties, which ensures assimilation of affordable housing properties.

5.10. Community Facility

If a community facility is planned, you must designate what will be a part of the community facility before approval i.e. office, laundry facility, fitness center. For HOME/NHTF, the community facility must be attached to the residential units, in order to utilize the funding sources for construction or rehabilitation of the community facility.

5.11. Ramps

All newly constructed accessible ramps shall meet the requirements of the adopted International Residential Code.

(check which one applies)

- Composite: Wood/Fiberglass with non-skid surface.
- Concrete: Concrete ramps with non-skid surface.
- Metal: Galvanized steel or aluminum with non-skid surface.

Ramps have a maximum ramp slope of 1:12 (twelve inches of ramp for every inch of rise). Where possible, a slope of 1:16 - 1:20 slope is recommended, as the 8.33% grade can be strenuous for persons with disabilities. Additionally, designs should limit continuous runs of ramp to avoid long and tiring climbs. Periodic level areas between slopes will allow for resting and maneuvering. This can be accomplished with switchbacks or landings.

5.12. Exterior Stairs/Steps

Stairs and steps on the site must adhere to [UFAS 4.9.2](#). On any given flight of stairs, all steps shall have uniform riser heights and uniform tread widths. Stair treads shall be no less than 11 in (280 mm) wide, measured from riser to riser.

- The undersides of nosings shall not be abrupt.

- The radius of curvature at the leading edge of the tread shall be no greater than 1/2 in (13 mm).
- Risers shall be sloped, or the underside of the nosing shall have an angle not less than 60 degrees from the horizontal.
- Nosings shall project no more than 1-1/2 in (38 mm).
- Risers shall not be open in any areas.

5.13. Exterior Railings

Handrails and guardrails are required on ledges, ramps, and staircases throughout the property. Both shall be installed in accordance with UFAS 4.9.4 and following the requirements of NSPIRE inspection standards.

- Stairways shall have handrails at both sides of all stairs.
- Handrails shall be continuous along both sides of stairs. The inside handrail on switchback or dogleg stairs shall always be continuous.
- Handrails shall have a 12” extension at the top and bottom of ramps and stairs on the site and grounds.
- Stairs/Steps are required to have railings if there are four or more consecutive risers. •

The clear space between handrails and wall shall be 1-1/2 in.

- Handrails shall be rounded and smooth and not rotate in their fittings.

5.14. Site Signage

Projects should include clear, visible, and legible site signage that includes the following:

- The project name.
- The street address.
- A Fair Housing and Equal Opportunity logo.

ADFA may waive the site signage requirement for additional phases, added at a later date, if the same entrance is used. However, the original sign must be updated to include all phases.

6. Accessibility

The participating jurisdiction's standards must require the housing to meet the accessibility requirements in 24 CFR part 8, which implements Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794), and Titles II and III of the Americans with Disabilities Act (42 U.S.C. 12131–12189) implemented at 28 CFR parts 35 and 36, as applicable. Covered multifamily dwellings, as defined at 24 CFR 100.201, must also meet the design and construction requirements at 24 CFR 100.205, which implements the Fair Housing

Act (42 U.S.C. 3601–3619). Rehabilitation may include improvements that are not required by regulation or statute that permit use by a person with disabilities.

The requirements of Section 504 of the Rehabilitation Act of 1973 must be met using the Uniform Federal Accessibility Standards (UFAS) or the 2010 ADA Standards for Accessible Design. There are certain circumstances where the 2010 ADA cannot be used. They are identified in the appendix to 24 CFR Part 8, Docket Number FR-5787-N-01 (see www.hud.gov/sites/documents/5784_N_01_NOTICE_5_15_14.pdf).

All buildings designed and constructed for first occupancy after March 13, 1991, with four or more units must meet the requirements of the Fair Housing Act (March 13, 1991). All projects must design and construct 5% of the dwelling units, or at least one unit, to be fully accessible for persons with mobility disabilities. Additionally, 2%, or at least one unit, must be accessible for hearing and visual disabilities.

7. Crime Prevention Through Environmental Design (CPTED)

ADFA encourages property developers to include concepts of crime prevention through design, but it is not required. The concept of crime prevention through environmental design has been adopted through the United States and other countries since 1971. All the items below are encouraged but not required and the QAP does not include any additional scoring for complying with CPTED. CPTED requires an analysis of factors influencing crime and undesirable behavior at a given site. These factors will

necessarily vary by site and the applications of CPTED principles should be scaled accordingly. Agencies including law enforcement and local institutions are capable of providing information and guidance regarding a location that can assist the design team in constructing a built environment that influences desirable use, complicates or impedes undesirable use, and decreases opportunities for crime. Thoughtful consideration of available information and resources can result in a design that enhances the residential experience and mitigates the need for subsequent remedial measures.

7.1. CPTED Components

At its core, CPTED has four key components:

- Natural surveillance
- Territoriality
- Access control, and
- Maintenance

CPTED seeks a built environment that supports, sustains, and encourages desirable activity, discourages criminal and undesirable activity, increases perceptions of safety, and facilitates a sense of ownership and responsibility among residents and legitimate users of the property.

7.2. Natural Surveillance & Territoriality

The project's design should include creates features of natural surveillance. This involves the placement of physical features and a built environment that maximizes visibility – the ability to see and be seen. Building orientation, window placement, entry and exit locations, lighting, parking areas, outdoor recreation areas, common use areas such as laundry, community rooms, and trash receptacles should afford maximum visual opportunities. The use of plantings or placement or orientation of objects that impede visibility or provide concealment, particularly along walkways or near entrances, exits, trash receptacles and elevators, are to be avoided.

Lighting, not inconsistent with applicable standards, should be of appropriate color and temperature so as to provide an even measure of lighting—minimizing glare and shadows and not impeded by obstructions, including plantings.

Territoriality refers to a design that clearly defines the boundaries of the property and clearly shows what is part of the property and what isn't. A property design should include indicators that show where public property begins and private property ends, as a means of deterring criminals from accessing the area.

7.3. Access Control

The project should include an effective use of fences, signage, gates, bollards, planters, and topography to assist and guide users in navigating about the property in a prescribed manner while simultaneously impeding or discouraging undesirable movement within the property and making such movement easily recognizable.

7.4. Maintenance

The physical condition and image of the built environment and its effect on crime and the fear of crime has long been acknowledged. Promoting a positive image through proper management and maintenance of the built environment ensures that the physical environment continues to function effectively and transmits positive signals to all users. The CPTED principle of “Maintenance and Management” refers to one's sense of pride of place, e.g., the more dilapidated a place is, the more likely it is to attract unwanted

activities.

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8. Fire and Life Safety

8.1. Smoke Detectors and Alarms

Smoke alarms are required in all dwelling units. All smoke alarms must be hardwired and interconnected or be heat sensor alarms connected to a central monitored fire panel. Smoke alarms/detectors must be installed in dwelling units at the following locations:

- Inside all sleeping rooms.

- Outside all sleeping rooms - within 21 feet of any sleeping room door (multiple sleeping rooms can be served by a single alarm/detector so long as the detector is within 21 feet of both doors).
- At least one alarm/detector must be present on all livable floors of a dwelling unit. •

Smoke alarms must be installed in the following manner:

- If installed on a wall, the alarm must be at least 4” from the ceiling but not more than 12” from the ceiling.
- If installed on a ceiling, the alarm must be at least 4” from the wall.
- All smoke alarms must be at least 10 feet away from any cooking appliance (measurement to be taken in a clear path, not through a wall or other barrier).

The most current Arkansas Fire Prevention Code Vol I & II must be followed.

8.2. Carbon Monoxide Detection

Properties must have UL-listed hard-wired carbon monoxide detectors/alarms installed in all structures where any of the following conditions are found to exist:

- Fuel fired heating equipment is present in the dwelling unit.
- Fuel fired domestic hot water equipment is present in the unit.
- Fuel fired cooking appliance(s) are present in the unit.
- The unit has a private attached garage.
- The unit is on the same level or one level above or below an unventilated garage. •

The unit is connected via ductwork to a room where fuel-fired equipment is located.

When one or more of these scenarios exist for a dwelling unit, carbon monoxide detectors/alarms shall be installed in the unit within 10 feet of any bedroom and within 6 feet of any door leading to a private garage.

Carbon monoxide alarms must be hardwired, e.g., connected to a building’s power system. Carbon monoxide alarms may be a dual-use design, including both smoke detection and carbon monoxide detection.

8.3. Communications

The property must include a data port centrally located to be able to provide Wi-Fi throughout the unit.

Broadband infrastructure. For new commitments made after January 19, 2017 for a new construction housing project of a building with more than 4 rental units, the construction must include installation of broadband infrastructure, as this term is defined in [24 CFR 5.100](#), except where the participating jurisdiction determines and, in accordance with [§ 92.508\(a\)\(3\)\(iv\)](#) and [§ 93.407\(a\)\(2\)\(iv\)](#) documents, the determination that:

(A) The location of the new construction makes installation of broadband infrastructure infeasible; or

(B) The cost of installing the infrastructure would result in a fundamental alteration in the nature of its program or activity or in an undue financial burden.

9. Unit Equipment, Furnishings, and Finishes

9.1. Appliances

Dwelling units must include areas for food preparation, bathrooms, living and dining areas, and sleeping rooms. The following are the requirements for essential equipment, finishes, and furnishings in any dwelling unit:

Refrigerator: A refrigerator shall be minimum 18 cubic foot frost-free provided in all dwelling units to match color with the dishwasher and range. All refrigerators must be Energy Star qualified. The Energy Star mark must be clearly marked on the front/top of the product, clearly displayed in product literature, and listed on the manufacturer's website.

Range: An electric or gas range shall be minimum 30" 4 burners with self-cleaning oven provided in all dwelling units to match color with the refrigerator and dishwasher.

Range Hoods: All units shall be equipped with a minimum 200 CFM range hood. Recirculation hoods shall be equipped with an activated charcoal filter. Gas appliances must be ducted to the exterior. Hood shall have a light.

Dishwasher: A dishwasher shall be provided in all newly constructed units and those resulting from adaptive reuse. Dishwashers shall also be provided in units resulting from rehabilitation activities where they had either previously existed or dwelling units were newly created due to structural change. Standard dishwashers shall use less than 4.25 gallons per cycle and 295 kWh per year.

Microwave: A built-in microwave should be provided in all units.

Clothes Dryer: All Clothes Dryers must be at a minimum 7-cu ft. vented dryers and meet Energy Star requirements.

Clothes Washers: All clothes washers provided in individual dwelling units shall have a Modified Energy Factor ("MEF") equal to or greater than 2.0 and a Water Factor WF equal to or less than 6.0. All clothes washers provided in common laundries shall have a MEF equal to or greater than 2.2 and a WF equal to or less than 4.5. All laundry facilities located above any habitable space shall be equipped with a properly installed washer overflow pan piped to carry the overflow into the DWV, positive outside drain, or an approved floor drain.

9.2. Finished Floor Treatments

Select type(s) of flooring being included in the design:

Vinyl Composition Tile (VCT): Shall be Armstrong or equal, suggested minimum of 1/8" x 12" x 12". Provide product adhesive and/or underlayment as recommended by the manufacturer. All surfaces shall be clean, dry, and appropriate temperature during installation. Follow manufacturer's recommendation for pattern layout.

Laminate Wood Flooring: Must include attached high density polyethylene underlayment or proper moisture barrier. The floor shall be resistant to stains and reagents.

Tile Flooring: A Glazed Ceramic Floor tile can be used in wet areas with an appropriate moisture barrier underlayment. The floor shall be resistant to stains and reagents. Low water absorption tile shall be used in wet areas. Light Traffic level, with a high dynamic coefficient of friction value of 0.4, is considered slip safe for most applications.

9.3. Interior Doors

(Check which one applies)

Paint: Primed once, with two-coat semi-gloss finish on all sides and faces. No Volatile Organic Compounds ("VOCs").

Factory Finished: Factory finished doors are acceptable with factory warranty.

Width: Interior doors must have a minimum clear opening of 34". Passage doors such as a coat closet can have a lower minimum.

9.4. Drywall and Finishes

9.4.1. Water-Resistant Drywall

Water-resistant gypsum board (commonly called "green board") or equivalent must be used on all walls in the bathroom and within six feet of wall surfaces where the drywall can be splashed such as kitchen sink, next to water heater and/or washer. Water-resistant/mold-resistant gypsum board or equivalent shall be provided behind any tub/shower unit located on an exterior wall. Water-resistant gypsum, when used on ceilings, must be rated for the span. A product that meets ASTM D3273 for mold resistance above and immediately around tubs/showers must be installed.

Interior Wall Finishes: Primed once and two finish coats of flat, eggshell, semi-gloss, or satin. Use semi gloss, or satin finish for bathrooms, laundry, and kitchens. No VOCs.

9.5. Furnishings

9.5.1. Cabinets

All cabinet materials shall be made of solid wood, plywood, or MDF (not particleboard). Doors, drawers, and fronts shall be factory finished. Cabinet ends shall be finished with appropriate veneer. All cabinets shall be Kitchen Cabinet Manufacturers Association (KCMA) approved. The following specifications are required for all new construction and rehabilitations:

- Cabinets shall have dual sidetrack drawers.
- Pantries or pantry closets shall be 1'6" x 1'6" deep (min) with at least five shelves. It should be made of solid wood, plywood, or MDF (not particle board).
- All cabinet doors need to have hardware that does not require pinching or grasping. Cabinets with knob pulls should have the pulls located near the bottom of the door for wall cabinets and near the top for base cabinets.

9.5.2. Countertops

Countertops at a minimum shall be post-form plastic laminate, bullnose front edge, rolled backsplash, finished exposed ends, and sealed at the cut out for sink, and the backsplash at the wall. Other appropriate materials may be used that have a solid surface, if approved by ADFA.

9.6. Unit Specifics

9.6.1. Closet Storage/Accessories

All shelving must be wood construction and have support/brackets installed every 36". MDF is allowable. 9.6.2. Interior Stairs/Steps

Stairs and steps in units must adhere to [UFAS 4.9.2](#). [UFAS 4.9.2](#). On any given flight of stairs, all steps shall have _____ uniform riser heights and uniform tread widths. Stair treads shall be no less than 11 in (280 mm) wide, measured from riser to riser. Open risers are not permitted.

The undersides of nosings shall not be abrupt. The radius of curvature at the leading edge of the tread shall be no greater than 1/2 in (13 mm). Risers shall be sloped, or the underside of the nosing shall have an angle not less than 60 degrees from the horizontal. Nosings shall project no more than 1-1/2 in (38 mm).

9.6.3. Interior Railings

Handrails are required on ramps and staircases throughout the property. Handrails shall be installed in accordance with UFAS 4.9.4.

Enclosed stairways shall have handrails on at least one side of the stairs.

Handrails shall be continuous along both sides of open stairs. The inside handrail on switchback or dogleg stairs shall always be continuous.

In barrier-free accessible units, handrails shall have a 12" extension at the top and bottom of ramps and stairs.

Railings are required if there are four or more consecutive risers.

The clear space between handrails and wall shall be 1-1/2 in.

Handrails shall be rounded and smooth and not rotate in their fittings.

10. Plumbing

Plumbing and other mechanical equipment should be properly installed and secure:

- Domestic hot water equipment should be installed in designated mechanical closets with insulated walls or in a garage.

- Domestic hot water equipment should be installed in drain pans with a drain that is plumbed to the outside.

10.1. Bathtubs and Shower Stalls

Standalone bathtubs shall be 30” deep and 60” long white porcelain or finished steel. Bathtubs must have a switched stopper.

Bathtub controls shall be installed not more than 12” from the entry or centered on the rear wall of the bathtub. Controls should not require pinching, tight grasping, and should allow for one-hand control, per UFAS 4.20.5.

For bathrooms with walk-in showers, the shower must be a single-unit, fiberglass (or more luxury materials may be used at the owner/developers’ choice) with a built-in rod or sliding doors, and be installed in rooms that have reinforced walls, per ADA standards.

Bathrooms with Tub/Shower combinations must be a single-unit, fiberglass (or more luxury materials may be used at the owner/developers’ choice) with a built-in rod or sliding doors and be installed in rooms that have reinforced walls.

Shower stalls and bathtubs must include grab bars. ADFA requires full adaptive design at new construction to reduce liability exposure to property owners and developers.

For rehabilitation projects, cracked/damaged bathtubs/showers must be replaced and not resurfaced.

10.2. Lavatories

Sinks shall be 15” minimum diameter; made of white porcelain finish steel or cultured marble.

10.3. Faucets

Polished chrome or stainless-steel finish two handle with pop-up stopper. Lever or push handle type shall be used for all faucets. Faucets may not have a water flow that exceeds 1.5 gpm.

10.4. Toilets

Toilets shall be white porcelain elongated bowls with acrylic seat maximum 1.6 GPF. Toilets shall be installed so the center line of the toilet is 18” or more from the wall, and the toilet seat shall be 17-19” from the floor.

10.5. Kitchen Sink

Sinks shall be a minimum eight inches (8”) deep, 33” x 20” stainless steel double bowl. Where ADA compliance is applicable, roll under sink depth shall be shallower as required in mobility impaired dwelling units.

10.6. Plumbing Accessories

Water heaters located in any interior space shall have a metal 2” deep overflow pan with discharge pipe indirectly plumbed into DWV receptor, floor drain or to the exterior.

10.7. Piping

Potable water lines shall be copper or PEX material. Installation in exterior walls must be centered in the insulation. Hose bibs must be of the freeze proof kind. All piping located in attic or crawl space shall be insulated. All hot water lines shall be insulated equal to or greater than R-4 pipe wrap. All lines within the crawl space or attic must be insulated.

10.8. Water Heater

Water Heater shall be a minimum 40-gallon capacity for 1- and 2-bedroom units and 50-gallon for 3+ bedroom units. Electric heaters will have a minimum Energy Factor (EF) equal to or greater than .92. Gas fired water heaters shall have an EF rating equal to or greater than .59. Instantaneous gas water heaters shall have an EF equal to or greater than .94 (96% AFUE). Direct vent on gas water heaters or sealed combustion is required.

10.9. Bathroom Accessories

Bathrooms must be finished with accessories and amenities that allow for proper use of bathroom fixtures. The following guidelines are the minimum standards:

Medicine cabinet: The medicine cabinet with a mirror must be 16”x 20” (min) and allow for storage. If the cabinet has an outlet inside, it must have GFCI protection. Medicine cabinets are optional.

Toilet paper dispenser: The toilet paper dispenser should be wall mounted and be properly situated near the toilet.

Towel bar: There must be at least one 24” towel bar in all bathrooms (including 1/2 baths).

Vanities: A storage vanity shall be installed in all units, except where wall mounted is required to meet barrier-free designs. If the bathroom uses a cabinet with vanity top design, the vanity cabinet must be a minimum of 30” in width.

ADA units must include open shelving for storage.

11. Electrical

11.1. Interior Lighting

Each room, hall, stairway, and walk-in closet shall have a minimum of one switched overhead light (color to match door hardware) with energy efficient LED lamp and globe (ceiling fan light kit is acceptable in bedrooms and living room), excluding can lights. No exposed bulbs are permitted. All light bulbs must be protected or enclosed by a covering or light fixture (to prevent the risk of electrocution). Kitchens shall

include adequate lighting over the countertop, appliances, and sink. Bathrooms shall be equipped with adequate lighting over the vanity sink with LED lamps and a combination exhaust fan light in the ceiling near the water closet/tub.

11.2. Exterior Lighting

Luminaries shall be located at all entrances (common entrances and exterior unit entries) and common areas. All on-site parking areas shall be lighted. The electrical supply for all-common areas, stairways, walkways, and parking areas shall not originate from an individual unit. Each fixture should have dusk/dawn and motion sensor capabilities with LED lamp.

11.3. Electrical Service

Individual living units with two or more bedrooms are to have a minimum 100 AMP service disconnect. Service entrance wiring and feeders rated at 100 amps or more may be copper or aluminum. All branch circuit wiring shall be copper.

Electric power shall be provided in the attic area to serve exhaust fans for the radon mitigation system. Units shall be metered individually when electricity is not included in a tenant's rent. 11.4.

Accessible/Adaptable Use Electrical Service

Wall switches shall be provided for the fan and light on all kitchen range hoods in all accessible units.

All dwelling units shall be wired for, and include, at least one combination audible/visible fire alarm device wired to the common alarm.

Accessible and Type A dwelling units shall have visible devices in each living space, bedroom, bathroom, and hallway wired to the common alarm and to the dwelling unit smoke/heat detector.

All electrical receptacles located in wet areas (kitchens, baths) must be GFCI receptacles and wired on a dedicated Arc Fault electrical circuit. To prevent the risk of electrocution, both AFCIs AND GFCIs must be used.

12. Heating, Ventilating, and Air Conditioning

All mechanical systems shall be regulated, including the design, installation, maintenance, and alteration of mechanical systems that are permanently installed and used to control environmental conditions within buildings to meet or exceed the standards of the International Residential or Mechanical Code.

12.1. HVAC Equipment

All units shall have one of the following systems:

- Standard air conditioner system and furnace.
- Heat pump with furnace.
- Heat pump with emergency heat strips.
- Package unit with emergency heat strips.

All systems must have a Seasonal Energy Efficiency Rating (SEER) of 14.5 or better. Heat pumps must possess a Heating Seasonal Performance Factor (HSPF) of 8.2 or greater rating. All furnaces must have an Annual Fuel Utilization Efficiency (AFUE) equal to or greater than 92%. Electric Resistance only heat systems are prohibited.

On a furnace, a direct vent or sealed combustion is required.

All HVAC systems shall be sized using the Air Conditioning Contractors of America (ACCA) manual J, S and D as required by the Arkansas-adopted International Residential Code.

These requirements are set forth as a living requirement and shall follow any of the updates along with the rating's changes made in accordance with Energy Star ratings.

12.2. Ductwork

All ducts must be insulated with a minimum requirement of the current ICC Energy Codes and installed per Sheet Metal and Air Conditioning Contractors' National Association ("SMACNA") standards.

All joints and connections shall be sealed tight compliant with UL 181 and pass pressure testing. Exhaust vent piping shall be insulated. All ducts shall be installed per manufactures requirements and free of restrictions. Vent louvers shall be white adjustable type. Dryer vent shall be through wall weather type with damper.

All supply ducts shall have individual dampers enabling supply air adjustments at each register grill and repositioning damper. Twenty percent of replaced HVAC systems and ducts shall be Tested and Balanced within 20% of the ACCA Manual J, S, and D calculations, and pass a "Duct Blaster" test for duct tightness, and these reports are to be maintained and provided to ADFA at project completion.

Any ductwork that penetrates a 1-HR rated ceiling must be a rated ceiling radiation damper at all supply register locations. This includes the interior air-handler supply/return ductwork, at each supply register vent location, within any rated horizontal construction assembly.

12.3. Thermostats

All individual HVAC systems shall be controlled by a digital programmable thermostat.

12.4. Ventilation

Exhaust air from bathrooms and toilet rooms shall not be recirculated within a residence or to another dwelling unit and shall be exhausted directly to the outdoors. Exhaust air from bathrooms and toilet rooms shall not discharge into an attic, crawl space, soffit vents or other areas inside the building.
Ventilation

systems shall be designed to have the capacity to exhaust the minimum air flow rate and mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous, and may be of the exhaust, heat, or light types, or combo units.

12.5. Ceiling Fans

Ceiling fans shall be minimum 42" 4 paddle with light kit located in all bedrooms and a 52" 5 paddle with light kit in the living room. Fans shall be Energy Star qualified. Minimum 120 cfm watt at medium

speed setting. Fans shall have the ability to accept a CFL or LED bulb.

13. Build America, Buy America Act (“BABA”)

The Build America, Buy America Act (“BABA”) requires any infrastructure project funded by any Federal Financial Assistance (“FFA”) to apply a domestic content procurement preference—called the “Buy America Preference” (“BAP”). This means that all iron, steel, manufactured products, and construction materials used in the infrastructure project are to have been produced in the United States, unless the awarding agency has issued a waiver of this requirement.

The purpose of BABA is to bolster America’s industrial base, protect national security, and support high paying jobs.

For additional information, please see [Title IX of the Infrastructure Investment and Jobs Act \(BABA\)](#).

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14. Public Comment

ADFA sent out a draft of the Design Standards Manual on July 24, 2024, to all stakeholders and posted the Design Standards on the ADFA website. The public was invited to provide comment on the proposed changes to the Design Standards on August 1, 2024, and ADFA accepted comments until August 8, 2024.

The Design Standards were approved at the August 15, 2024, ADFA Board meeting.

Applicant's Certification

I, _____, in my capacity as Applicant for the proposed development known as _____ state that I have reviewed the above Design Standards Manual for New Construction and Rehabilitation and certify as to the accuracy of its contents, and further certify that the cost estimates provided in the application encompass the representations made herein and that the development will be constructed or rehabilitated in accordance with ADFA's Design Standards Manual

for New Construction and Rehabilitation and the representations herein.

Name: _____

Title: _____

STATE OF _____)

COUNTY OF _____)

Before me, _____, a Notary Public of the state and county stated above, personally appeared _____, with whom I have personal knowledge, and who, upon oath, acknowledged that _____ executed the forgoing instrument for the uses, consideration and purposes stated therein.

Witness my hand and seal this _____ day of _____, 20__.

Notary Public

My commission expires:

Architect's Certification

I, _____, in my capacity as Architect for the proposed development known as _____ state that I have reviewed the above Design Standards Manual for New Construction and Rehabilitation and certify as to the accuracy of its contents, and further certify that the cost estimates provided in the application encompass the representations made herein and that the development will be constructed or rehabilitated in accordance with ADFA's Design Standards Manual

for New Construction and Rehabilitation and the representations herein.

Name: _____

Title: _____

STATE OF _____)

COUNTY OF _____)

Before me, _____, a Notary Public of the state and county stated above, personally appeared _____, with whom I have personal knowledge, and who, upon oath, acknowledged that _____ executed the forgoing instrument for the uses, consideration and purposes stated therein.

Witness my hand and seal this _____ day of _____, 20__.

Notary Public

My commission expires:

General Contractor's Certification

I, _____, in my capacity as General Contractor for the proposed development known as _____ state that I have reviewed the above Design Standards Manual for New Construction and Rehabilitation and certify as to the accuracy of its contents, and further certify that the cost estimates provided in the application encompass the representations made herein and that the development will be constructed or rehabilitated in accordance with ADFA's Design Standards Manual for New Construction and Rehabilitation and the representations herein.

Name: _____

Title: _____

STATE OF _____)

COUNTY OF _____)

Before me, _____, a Notary Public of the state and county stated above, personally appeared _____, with whom I have personal knowledge, and who, upon oath, acknowledged that _____ executed the forgoing instrument for the uses, consideration and purposes stated therein.

Witness my hand and seal this _____ day of _____, 20__.

Notary Public

My commission expires:
