Exhibit D
Arizona Department of Housing (ADOH) Year 2017
Mandatory Design Standards for Multifamily Rental Housing

The following Design Standards have been developed to assist architects and developers to understand the factors considered by the Arizona Department of Housing ("ADOH") in the evaluation of multifamily rental housing. ADOH generally yields to the local jurisdiction in all matters pertaining to development and construction standards. Therefore, in the event that Local Government building codes and standards are more restrictive than these Design Standards; the Local Government codes and standards shall apply. ADOH requires the finished product to substantially conform to what was represented in the Application. This representation pertains to buildings, building materials, amenities, equipment, etc. ADOH must approve any Material Change or it may result in a reduction or recapture of tax credits and/or, prevent the issuance of 8609's until the Material Change is approved. Material Changes are described in Section 4.5 of the Qualified Allocation Plan ("QAP").

ADOH values excellence in design because well-designed housing meets the needs of tenants, attracts market renters and promotes community acceptance of housing financed by ADOH. All Projects must meet or exceed each of these standards, as well as the minimum requirements of all applicable building codes and regulations. In addition, Projects must meet all applicable state and federal laws including without limitation the Americans with Disabilities Act ("ADA"), Architectural Barriers Act of 1968, the State and Federal Fair Housing Acts of 1990, and Section 504 of the Rehabilitation Act of 1973 (collectively "Applicable State and Federal Law").

Where ADOH's minimum standards are in conflict with HUD or State Housing Fund requirements for the design and construction of manufactured housing, the HUD or State Housing Fund requirements shall apply. For items not covered by the HUD or State Housing Fund requirements, e.g., site drainage and site lighting, ADOH's minimum standards shall apply.

I. GENERAL DESIGN

A. The building design should be appropriate and integrated into the topography and neighborhood.

B. Project amenities should reflect the desires of the target market. Amenities should be shown clearly on the plans and should be fully described within the narrative portion of the application package.

C. Project design should reflect the outcomes of neighborhood involvement.

II. BUILDING CODE STANDARDS

All Projects financed and built under the program are to meet or exceed the most recent local building codes and the following development standards:

A. Federal Fair Housing Act (42 U.S.C. § 3601 *et seq.), Arizona Fair Housing Act* (A.R.S. § 41-1491 to 41-1491.37), and the HUD Fair Housing Regulations (24 C.F.R. Part 100, Subpart D) and the Fair Housing Act Design Manual revised April 1998.

B. Uniform Federal Accessibility Standards (Section 504 of the 1973 Rehabilitation Act) and the Americans with Disabilities Act, including the 2010 ADA Standards for Accessible Design, as applicable.

III. SITE, LOCATION AND NEIGHBORHOOD

A. **Smart Site Location – Protecting Environmental Resources**.
New construction shall not be located within 100 feet of wetlands, critical slope areas, land identified as habitat for threatened or endangered species, land previously used as public park land, land identified as prime farmland, or land with an elevation at or below a designated 100-year floodplain.

B. **Walkable Neighborhoods – Sidewalks and Pathways**.
Site plans shall demonstrate that the Project is connected to the pedestrian grid. Site plans shall describe sidewalks or other all-weather pathways within a multifamily property linking residential development to public spaces, open spaces and adjacent development. Sidewalks shall meet local, State and Federal accessibility guidelines.

C. **Environmental Remediation**.
Project sponsors shall conduct a Phase I Environmental Site Assessment and provide a plan for abatement if necessary.

D. **Erosion and Sedimentation Control**.
Project plans and specifications shall implement EPA's Best Management Practices for erosion and sedimentation control during construction and refer to EPA documents for Storm Water Management for Construction Activities.

E. **Landscaping**.
Landscape design shall be low water use. It shall provide for human enjoyment and comfort, including shading in the summer and allow for appropriate heat gain in the winter.

IV. INTERIOR DESIGN

All residential dwelling units must meet minimum size requirements. The net square footage measurements below will be for conditioned square footage only. The measurements are taken from finished interior wall to finished interior wall. Unconditioned areas such as patios, decks, porches, stoops, or storage rooms shall not be included.

Unit Size	Minimum Square Footage
Efficiency	380 net square feet
1 bedroom	575 net square feet
2 bedrooms	800 net square feet
3 bedrooms	1,050 net square feet
4 bedrooms	1,200 net square feet
5 bedrooms	1,350 net square feet

A. The minimum bedroom size is 100 net square feet.
B. Kitchens must be equipped with pantries.

C. Other features which must be provided include:
   1. Linen closets or cabinet.
   2. General storage for items such as, suitcases and sport equipment. (This may be an interior guest closet or located outside each unit, and shall not be shared with a gas water heater.)

V. EXTERIOR DESIGN

A. Building design shall incorporate durable low maintenance exteriors that are appropriate to the climate and surrounding areas.

B. Plans shall include a complete landscape plan, designed by a licensed landscape architect which maximizes existing natural features or otherwise enhances open space. Wherever possible native plants should be used. Landscape plans shall also detail a complete automated irrigation system and scheduling as necessary to maintain the landscaping.

C. Since the State of Arizona is susceptible to drought, , Xeriscaping must be used. Internally located lawn areas of minimal size are permitted for specific uses, such play areas. Firewise® design principles are recommended in areas susceptible to wildfires.

D. Trash/Recycle removal areas must be screened.

E. Buildings and dwelling units must be individually marked with visible, contrasting, identifying devices as required by local police, fire and other emergency services to minimize their response time. The building identifying devices must be appropriately lit from dusk till dawn, while observing dark sky lighting strategies.

F. Single cylinder deadbolts and eye viewers are required on all entry doors to residential units.

VI. LARGE UNIT DESIGN (applicable to units which have three or more bedrooms)

A. The areas of common spaces of units, living area, kitchen, dining, etc., shall increase in proportion to the number of bedrooms.

B. Three-bedroom units must have at least 1.75 baths. Four and five-bedroom units must have 2 full baths.

VII. ON-SITE PLAYGROUND AREAS

A. Recreational facilities must be provided for different age groups. For example, sandboxes within sight of units for children under 5, “tot lots” for ages 5 to 12, and a sport court, pool, or area in the clubhouse for ages 12 and older.

B. Play areas and playgrounds for children should be located away from areas with high volume automobile traffic, and situated so that the play area is visible from the maximum number of dwelling units possible for safety.

C. Designated play areas and playgrounds are considered “common areas”, and must be on an accessible route in accordance with applicable accessibility codes.

D. A bench must be provided at playgrounds to allow a child's supervisor to sit and rest comfortably. All benches must be anchored permanently, must be on an accessible route, must be weather resistant, and must have a back.

E. A "warning" sign must be posted to advise residents and guests that using the playground is at their own risk. The sign must be posted at a visible location, and use contrasting colors for better visibility.

VIII. COMMON AREA FACILITIES

A. **On-Site Laundry Facilities.**
There must be a minimum of one washer and one dryer per twelve dwelling units if washer/dryer hookups are not available in each dwelling unit. If hookups are available in each dwelling unit, there must be a minimum of one washer and one dryer per twenty dwelling units. If in addition to washer/dryer hookups, Applicant provides washers and dryers in each unit, a common washer and dryer facility is not required.

1. A "folding" table or countertop must be installed in common laundry facilities.

2. The laundry room must have an interior or exterior window and adequate entrance lighting, which must be on from dusk to dawn to assist in greater security during evening hours.

B. **Community/Office Space.**
All special needs and elderly developments must have a community room on site or immediate access to such space on an adjacent property.

All developments consisting of twenty (20) residential dwelling units or more must have a site office of at least 200 square feet (inclusive of accessible toilet facility) and a maintenance room of at least 100 square feet.

C. **Community Service Facility.**
A Community Service Facility must be designed to serve primarily individuals whose income is 60 percent or less of AMGI, under Section 42(d)(4)(c)(iii). This requirement will be satisfied if the following conditions are met:

1. Facility must be used to provide services that will improve the quality of life for community residents.
2. Applicant must demonstrate that the services provided at the facility will be appropriate and helpful to individuals in the area of the Project whose income is 60 percent or less of AMGI. This may, for example, be demonstrated in the market study required to be conducted under section 42(m)(1)(A)(iii), or another similar study.
3. Facility must be located on the same tract of land as one of the buildings that comprise the qualified low-income housing project, and can be incorporated into the common building space, or be a separate standalone building.
4. If fees are charged for services provided, they must be affordable to individuals whose income is 60 percent or less of area median income.

IX. NEW CONSTRUCTION

Specific Construction Features

The following represent ***minimum*** design standards to be met by each tax credit project. These minimum requirements (or alternatives of equal or greater quality and durability) will be imposed on every Applicant, regardless of Project size, amenities, or geographic location, unless the standards required by a local jurisdiction exceed those established by ADOH. For Rehabilitation Projects, the minimum design standards listed in this section shall apply to any part of the building that is modified or replaced where the design standard specifications can be met.

The Applicant will be required to certify in the Applicant Affidavit, Release and Oath (see Form 3, "Low-Income Housing Tax Credit Application") that the Applicant will comply with these minimum design features in the construction of the Project and that, if they are not, credits will be surrendered to ADOH. ADOH will not release 8609's until the Project sponsor demonstrates and certifies full compliance with these Design Requirements.

A specific goal of the program is to minimize monthly tenant Operating Costs. All construction features in the LIHTC Project should conform to goals of attractiveness, utility, efficiency, and long-term durability. All features should be designed for long-term extended use. Adequate replacement and maintenance reserves should be available to replace and maintain building envelope and equipment at appropriate intervals.

Building design should minimize visual impacts and apparent height through varied building heights and rooflines and distinctive window and entry door detail. The architect should vary building orientations along the street as well as building masses, clusters, finishes and colors.

A. **Site Work**.
   1. Storm Water Pollution Prevention Plans where required.
   2. Applicant must adhere to County Pollution Control Standards.
   3. A geotechnical investigation report by an Arizona Registered Engineer is required.
   4. Site drainage must conform to the recommendations of the geotechnical investigation report or the following minimum slopes whichever is more restrictive:
   5. Minimum slopes required for proper drainage are:
      a. Slopes away from foundations: 5% first 10 feet (6 inches in first 10 feet).
      b. Slopes on paved areas: can be a minimum of 0.7% for asphalt, 0.5% if a concrete valley gutter is installed; 1% = 1/8 inch per foot.
      c. Exterior grade adjacent to buildings should be shown a minimum of 6-8 inches below the top of slabs on grade.

B. **Foundation and Slabs**.
   1. Cast-in-place concrete foundations shall be suited to specific locations, be designed for local frost depth, and be designed by a registered professional engineer.
   2. If a slab on grade is implemented the concrete slab shall be a minimum of four inches thick and shall be supported by at least four inches of ABC aggregate, or as designed by an Arizona Registered Structural Engineer. All concrete slabs, including carports and driveways, should

be reinforced as directed by the structural and/or civil engineer using the following methods at a minimum:

a. 6x6 10/10 WWF wire mesh, centered in the slab vertically, or
b. Polypropylene fibers in the concrete mix for slabs (Fibermesh is a typical manufacturer). Application of the product should be in the proportions and according to the recommendations of the manufacturer, or
c. Post-tensioned tendons as designed by an Arizona Registered Structural Engineer in accordance with the latest specifications of the Post-Tensioning Institute and the recommendations for soil preparation and soil parameters of an Arizona Registered Geotechnical Engineer's Investigation.
d. Provide foundation drainage or below slab vapor barrier as required by the geotechnical report in IECC Climate Zones 4 and higher.

Note: All slabs and foundations must be designed by an Arizona Registered Structural Engineer.

C. **Frame Construction**.

1. Frame: a minimum of 2x4 wood or metal studs in exterior and party walls, 2x4 in other walls; the framing system will be dictated by the methods selected to meet the International Energy Conservation Code requirements, sound barrier requirements, and engineer's specifications. Exterior walls should be designed to achieve a thermal resistant value per local code or better.
2. Walls, partitions and floor-ceiling assemblies between dwelling units, corridors, adjacent public spaces, stairs and service areas must provide a minimum fire rated separation of one hour and minimum STC of 50 and a minimum IIC of 50.
3. Floor-ceiling truss assemblies must be fabricated in the State of Arizona.

D. **Roof**.

1. An Arizona Registered Structural Engineer must design roof trusses.
2. Roof Trusses must be fabricated in the State of Arizona.
3. Roof Sheathing should be called out on the Roof Framing Plan. Required: minimum ½-inch exterior grade plywood or ½-inch exterior grade OSB (oriented strand board). All sheathing must be gapped 1/8-inch on the edges and ends.

    a. Pitched Roof
    Roofing systems must have a minimum life of 30 years, a 10-year material and labor warranty, and be installed per manufacturer's specifications with wood truss framing, and a minimum slope of 3:12.
    b. Low-Sloped Roof
    Low-Sloped roofs must have a minimum 3/8″/1′ slope and have a minimum rated life of 20 years and a 10-year material and labor warranty.

E. **Electrical**.

1. All standard basic service and lighting must conform to the current edition of the National Electric Code and/or other local codes. Smoke detectors must be hard-wired.
2. Install Energy Star qualified light fixtures or LED light fixtures in all interior units and use Energy Star or LED light fixtures in all common areas and outdoors.

F. **Plumbing**.

1. Piping: Provide copper, CPVC or PEX for domestic water; PVC outside (polybutylene piping is prohibited); and PVC, ABS or cast iron for sanitary sewer drain-waste-vent.

2. Durable fixtures: Materials must be as follows:

Fixture	**Material**
Bathroom sinks	Porcelain, stainless steel, Corian® or equivalent
Toilets	vitreous china
Tubs/Shower	porcelain on steel, one piece epoxy resin with surround (fiberglass) four piece acrylic tub surround
Surrounds	ceramic tile, cultured marble, pre-finished wall panels

Mandatory water conservation devices shall include the following maximum flow rates:

Fixture	**Maximum Flow Rate**
Toilets	1.28 GPF
Showerheads	1.75 GPM
Kitchen faucets	2.0 GPM
Bathroom faucets	.5 GPM

3. All accessible clothes washers must be front loading or horizontal axis. All other washers shall be rated Tier 2 or greater by the Consortium for Energy Efficiency ("CEE").
4. No plumbing shall be permitted directly in exterior framed walls in cold climates where the exterior temperature goes below 32° F. Projects located in warmer climates where the temperature occasionally could reach 32° F should ensure that there is adequate insulation to prevent pipes from freezing, or run plumbing through interior walls only.
5. Hot water heaters must be installed with floor drains or catch pans with drains piped to the exterior of the dwelling.

G. **Energy Conservation**.

The Project must comply with the latest local energy code. Compliance with this code shall be determined in accordance with applicable Sections of the local code.

1. **Insulation**:

   Insulation must be installed so that there are no gaps, voids, air intrusion or compression of the insulation. The insulation and a rigid air barrier (e.g. gypsum board) must be continuously in contact and aligned in all cases. Slab edge insulation shall be installed in accordance with the IECC 2012 or later requirements

2. **Minimum HVAC efficiencies by Energy Code**:
   a. AC: 14 SEER
   b. Heat Pump: 14 SEER and 8 HSPF
   c. Combustion furnace: 80% AFUE in IECC Climate Zones 1 and 2; 90% AFUE in IECC Climate Zones 3 and higher.
   d. Size heating and cooling equipment in accordance with the Air Conditioning Contractors of America Manual, Parts J and S, ASHRAE handbooks, or equivalent software.

Note: Electric resistance heating can be used only if the Owner documents, in accordance with IECC Section R405 Simulated Performance Alternative approach, that the utility costs for the structure are equal to or less than the IECC standards design of like architectural characteristics. The analysis will be completed utilizing a combustion furnace for the standard design with an efficiency value of 80% AFUE.

3. **Air Distribution Systems**:
   a. All joints in the air distribution system shall be sealed with duct mastic or approved equivalent to comply with IBC, IRC or IMC.
   b. For duct systems located outside the conditioned envelope, leakage to outdoors shall be less than or equal to 2 CFM per 100 ft2 of conditioned floor area (CFA) or a total leakage less than or equal to 4 CFM per 100 ft2 of CFA when tested at a pressure differential of 25 Pa across the entire system, including the manufacturer's air handler enclosure. If the air handler is not installed, leakage to outdoors shall be less than or equal to 1 CFM per 100 ft2 of CFA or a total leakage less than or equal to 3 CFM per 100 ft2 of CFA.
   c. If the entire system, including the manufacturer's air handler enclosure, is located entirely within the building thermal envelope, duct leakage testing is not required.
   d. Airflow to each room will match design airflow calculations to within +/- 10%.

4. **Room Pressure**:
   Under normal operating conditions, an air handler cannot create a differential pressure greater than +/- 3.0 Pascals between room and any area outside the room, anywhere in the Unit.

5. **Indoor Air Quality**:
   a. Exhaust hoods above ranges must be vented to the outside. Install power vented fans or range hoods that exhaust to exterior.
   b. Install Energy Star – labeled bathroom fans that exhaust to the outdoors and are connected to a switch or timer.
   c. Clothes dryers must exhaust directly to the outdoors.
   d. Unvented combustion appliances (fireplaces, heaters or gas logs) are not allowed.
   e. A carbon monoxide detector, hardwired, shall be installed in all Units with an attached garage or with any combustion appliance located in the conditioned space.
   f. Applicant must install a ventilation system for the dwelling unit, providing adequate fresh air per ASHRAE 62.1-2007 for buildings over three stories, or ASHRAE 62.2 for single family and low rise multi-family.
   g. All particleboard and MDF must be certified compliant with ANSI A208.1-2009 Particleboard and ANSI A208.2 -2009 NDF for Interior Applications. All adhesives shall comply with Rule 1168 of the South Coast Air Quality Management District. Caulks and sealants must comply with Regulation 8, Rule 51 of the Bay Area Air Quality Management District.
   h. All interior paints and primers must comply with current Green Seal standards for low VOC limits.
   i. Seal all registers and any open duct work during construction and perform an extended occupancy flush (run all ventilation fans with the windows open) for 48 hours prior to occupancy. The 48 hours do not need to be contiguous.

6. **Inspections of Energy Conservation Features - Contact FSL Home Energy Solutions ("FSLHES") at FSLHES@fsl.org**.

The Developer is required to provide FSL Home Energy Solutions a PDF of the mechanical plans for the Project and to notify FSLHES of the construction schedule to facilitate inspections that need to be completed at various phases of construction.

The following inspections and testing must be completed. The Developer may use a Certified Residential Energy Services Network (RESNET) Home Energy Rater to perform inspections and testing in lieu of requesting them from FSLHES. The Certified RESNET Home Energy Rater must submit evidence documenting that the Project passed the inspections to FSLHES. FSLHES or Certified RESNET Home Energy Rater will inspect the Project for adherence to the ADOH Energy Standards listed below.

PLEASE NOTE: If requesting inspections from FSLHES, they will require 10-days' notice prior to scheduling inspections and confirmation that the construction superintendent is available to accompany the FSLHES representative throughout the entire inspection.

A minimum of ten percent (10%) of units shall be randomly selected for testing and inspections. HERS Raters shall follow Chapter 6 of the RESNET National Home Energy Rating Standards.

a. Pre-Insulation/Drywall Phase.

i. The building's air/pressure barrier shall be continuous and unbroken at all walls separating conditioned from unconditioned space;

ii. All insulation shall be in full contact with the air/pressure barrier, minimizing gaps, voids, compression, misalignment, and wind intrusion;

iii. If duct leakage is measured pre-drywall, leakage shall be measured in accordance with Section 2.9(N)(2)(b)(ii) below;

iv. Verify windows have a low-e coating.

b. Final Inspection.

i. Measured envelope leakage shall be less than or equal to one (1) CFM50 per ft2 of CFA;

ii. Duct leakage:

1) If duct leakage is measured at final inspection, leakage to outdoors shall be less than or equal to two (2) CFM per 100 ft2 of conditioned floor area (CFA) or a total leakage less than or equal to four (4) CFM per 100 ft2 of CFA when tested at a pressure differential of twenty-five (25) Pa across the entire system, including manufacturer's air handler enclosure. If the air handler is not installed, leakage to outdoors shall be less than or equal to

one (1) CFM per 100 ft2 of CFA or a total leakage less than or equal to three (3) CFM per 100 ft2 of CFA;

2) Alternatively, the FSLHES may test for duct leakage using the pressure pan testing method, with each supply/return testing at or below 1.0 pascal;

3) Unless the entire new air distribution system, including the manufacturer's air handler enclosure, is located entirely within the building thermal envelope, duct leakage testing is required;

iii. Each bedroom shall be tested to confirm that room pressures, with respect to the main body of the unit, is at or below three point zero (3.0) pascals;

iv. Verify CO detector is installed (if applicable);

v. Verify that HVAC equipment meets ADOH standards: minimum fourteen (14) SEER for air conditioners; minimum fourteen (14) SEER and eight (8) HSPF for heat pump; and minimum eighty (80) AFUE for gas furnaces.

When all tests and inspections have passed, an inspection report will be sent to ADOH indicating that all criteria for the ADOH energy standards have been met.

H. **Doors**.
1. Exterior: Solid wood, fiberglass or insulated metal outside doors with wood or metal frame.
2. Interior: Paint grade pre-hung hollow-core interior doors with residential grade finish hardware or better with lever handles throughout.

I. **Floors**.
1. Surface must be carpet, LVT, VCT, sheet vinyl, sealed or stained concrete, or better.
2. Floor base must be provided and must be painted or pre-finished; and made of wood, vinyl, rubber or MDF compressed wood.
3. In wet areas, use materials that have smooth, durable, cleanable surfaces. Do not use mold-propagating materials such as vinyl, wallpaper, or unsealed grout.
4. All carpets must be Green Label Plus ("Green Label Plus") certified by the Carpet and Rug Institute.
5. Water resistant floor coverings must be installed under hot water heaters.

J. **Walls & Ceilings**.
1. Painted with low-VOC paint coatings as defined by Green Seal or similar; use 5/8" gypsum board throughout; moisture resistant at substrate for tiled areas at water closet; glass mat water-resistant gyp board or cementitious backer unit for wall tile at tubs and showers; type 'X' or "C" at areas required by prevailing building code.

K. **Appliances**.
1. Refrigerator, disposal, dishwasher, range/oven, exhaust hood above range, microwave. For rehabilitation Projects only, if microwave is also the range hood AND recirculates the air, it

must include a carbon filter. All new construction Projects are required to have the exhaust hood above the range vented to the outside (See X.5(a) above).

2. All Appliances where Energy Star rating is available shall be Energy Star (e.g. clothes washers, dishwashers and refrigerators).

L. **Cabinets**.

1. Solid wood or particleboard with durable laminate; durable laminate counter tops at a minimum.

M. **Exterior Stairs, Entrance Landings, and Balconies**.

1. Minimum precast concrete or cast in place treads on painted steel framing with painted steel guardrails and handrails or a system of equivalent or greater durability and quality.

N. **Landscape/Irrigation**.

1. If irrigation is necessary, use recycled gray water, roof water, collected site run-off, water from a municipal recycled water system, or a highly efficient irrigation system including all of the following: system designed by licensed landscape or irrigation professional; plant beds with a drip irrigation system; separately zoned turf and bedding types; a watering zone timer/controller; and rain sensor.

O. **Exterior Fencing**.

1. Fence the property (masonry preferred) to limit access of non-residents, as appropriate and required by the Local Government. Gates are not required unless specified by the Local Government or needed to provide access from one property to the other for services, etc. Installed fencing and gates shall be designed for permanent use. Construction chain link fencing and padlocks shall be removed upon certificate of occupancy.

P. **Exterior Finish**.

1. Select a finish material that will withstand extended weathering in the Project location.
    a. Desert and mountain localities: at a minimum three-coat cement stucco with metal expansion joints, or 3/8 inch, fiber-reinforced stucco on wire lath, on 1-inch foam insulation.
    b. Mountain localities at higher elevations; various siding products (cementitious board or vinyl) may be substituted for stucco if warranted by the manufacturer for a minimum of 30 years.

Q. **Site Lights**.

1. For security purposes, provide adequate site lighting, especially at the rear of the buildings and for walkways, parking, corridors and stairways. Adhere to dark sky design strategies and minimize light trespass to adjacent properties (0.5 fc at property line) confirmed by a photometric study. Provide a photometric study if required by the authority having jurisdiction.
2. Install daylight sensors or timers on all outdoor lighting.

R. **Bathrooms.**

1. Tiled tub and shower wall areas require a cementitious wall board.
2. Durable toilet accessories must include a medicine cabinet with a mirror and towel bar.

X. SENSORY IMPAIRED UNITS.

In the event that federal funds are provided to a Project by ADOH, the following standards apply with respect to section 504 of the Rehabilitation Act of 1974 for the two percent of units that must be equipped for the sensory impaired. These standards exceed the Uniform Accessibility Standards cited in Section 504.

A. Lighted switches for garbage disposal, range fan, and bathroom fan. Both visual and audible notification for doorbell and fire alarm.
B. Construction materials and techniques that minimize vibration and improve sound control.
C. Open sightlines in community rooms, meeting areas, landings, stairwells, and other building areas to remove visual communication barriers.
D. Specialized lighting design and window placement that minimizes glare in order to facilitate communication in American Sign Language. Light fixtures are selected for their glare reducing design and located differently to minimize glare that can interfere with seeing hand motions or reading lips. Windows on the west and south facing walls that receive the most direct sunlight are sized and spaced differently. Exterior awnings help prevent glare and background colors are chosen to provide contrast to aid communication in sign language.
E. Loop amplification system in the community room and the management office designed for tenants with hearing aids. Loop systems that work together with hearing aids to help hard of hearing people hear better, especially in group settings. For example, a loop system could help a hard of hearing individual clearly hear a speaker giving a presentation to a large group. Installation of a loop system involves additional wiring inside building walls. Visual emergency indicators in elevator. Emergency situations are made more stressful by a lack of information and the absence of any indication that help is on the way. The elevators modified to provide information to deaf individuals trapped in a malfunctioning elevator. Lighted buttons can be pressed from outside the elevator to signal to those inside that assistance is on the way. The interior emergency button triggers a visible response to indicate that a request for assistance has been received.
F. Wider hallways and larger community rooms and elevator lobbies. Spacing requirements between individuals are greater when communicating in American Sign Language as compared with speaking.
G. Community Room furnishings which are designed and functional for deaf persons. Tables, for example, are rounded rather than rectangular to allow all persons seated at the table to see each other more easily during conversations. Accessibility features for residents with mobility impairments and physical disabilities are located throughout the building. Handrails are located on both sides of common hallways, automatic door openers have been installed at main entrances to the building, and washers and dryers are front loading.

XI. REHABILITATION PROJECTS

Applications must propose a scope of work appropriate to the building(s), as reflected in the Capital Needs Assessment. Proposals must address the following elements:

All Additions, Alterations or Renovations shall comply with latest local building and energy code as well as meeting the standards in 24 CFR 5.703 and 24 CFR 5.705 (Uniform Physical Conditions Standards or "UPCS").

Applicant shall provide a 10% unit sampling by either an independent Building Performance Institute certified professional or certified Residential Energy Services Network ("RESNET") Rater in good

standing with their respective certifying agency to determine the scope of work for energy improvements.

New materials/equipment shall comply with Section IX – Construction.

A. HVAC replacements and new installations shall include:
   1. Sealing of all accessible duct connections including the drywall to boot connections with duct mastic or approved equivalent.
   2. Installation of new duct systems that comply with the new construction Energy Conservation Air Distribution Systems standard.
   3. Room Pressures shall comply with the new construction Energy Conservations standard.

B. Insulation:
   1. Insulation must be installed such that there are no gaps, voids, compression or wind intrusion of the insulation. The insulation and air barrier (e.g. gypsum board) must be continuous and aligned in all cases.

C. Common areas must be handicap accessible.

D. Upgrade site and exterior dwelling lighting, landscaping/fencing and installed finish material must withstand extended weathering (minimum 10 year performance) in the Project's location.

E. Porches or other aesthetic features must be used to enhance the exterior quality and interest of the Project.

F. Perform an energy analysis of existing building condition, estimate costs of improvements, and implement measures that will improve building energy performance by a minimum of 15 percent from pre-renovation figures. The analysis must be performed on a minimum 10% unit sampling. The sampling must include all unit sizes. A RESNET certified Home Energy Rater must perform the analysis. All work must be completed to the Department of Energy Standard Work Specifications, which may be downloaded from the following website: The Arizona Weatherization Program Field Guide provides the critical details for this standard.

G. Where applicable, use energy-efficient related products to replace inferior ones, including insulated windows and doors, and adding additional insulation.

H. Improve heating and cooling units, plumbing fixtures, water heaters, toilets, sinks, faucets and tub/shower units, especially with use of water conserving equipment and systems.

I. Improve quality of interior conditions and fixtures, including carpet, vinyl, interior doors, painting, drywall repairs, cabinets, appliances, light fixtures and mini-blinds.

J. Upgrade bathrooms and kitchens. Refer to Section IX – New Construction – for all categories that apply.

K. For properties built before 1978, use lead-safe work practices during renovation, remodeling, painting and demolition.

L. Complete a Phase I Environmental Assessment for all projects and a Hazardous Materials Study (asbestos and lead paint) for projects built before 1980.

The minimum square footages in Section IV Interior Design are only applicable to rehabilitation where the Applicant is changing the structure of the unit to change the number of bedrooms in the unit or otherwise change the exterior footprint of the unit.

M. Capital Needs Assessment Requirements

a. The CNA report must be prepared by a qualified professional (architect or engineer) who has no financial interest in the Project and no identity of interest with the Developer. A "qualified professional" is a licensed professional architect or engineer, who can substantiate a minimum of five (5) years' experience providing CNA reports in accordance with ADOH standards, and who performs the assessment and supplies ADOH with their professional opinion of the property's current overall physical condition. The preparer must insert Form 21 from the Low Income Housing Tax Credit Application in the front of the CNA certifying that it meets these requirements. CNAs must conform to each of the requirements in this Section XI(M). The CNA must include the identification of significant deferred maintenance, existing deficiencies, and material building code violations that affect the property's use and its structural or mechanical integrity. Furthermore, the CNA must examine and analyze the following building components:

i. Site, including topography, drainage, pavement, curbing, sidewalks, parking, landscaping, amenities, water, storm drainage, gas and electric utilities and lines.

ii. Structural systems, both substructure and superstructure, including exterior walls and balconies, exterior doors and windows, roofing system and drainage.

iii. Interiors, including Unit and common area finishes (carpeting, vinyl tile, interior walls, paint condition, etc.), Unit kitchen finishes and appliances, Unit bathroom finishes and fixtures and common area lobbies and corridors.

iv. Mechanical systems, including plumbing and domestic hot water, HVAC, electrical and fire protection.

v. Elevators (if applicable).

vi. Provide building life cycle study that lists each building component, the base cost and opinions of probable cost immediately (critical repair item), within two (2) years, and within ten (10) years along with an analysis of the reserves for replacement needed to fund long-term physical needs of the Project, accounting for inflation, the existing reserves for replacement balance and the expected useful life of major building systems.

b. The CNA must also include the following major parts:

i. All health and safety deficiencies or violations of Uniform Physical Conditions Standards ("UPCS") under 24 CFR 5.705, requiring immediate remediation. If the Project has tenants, these repairs are to be made a first priority.

ii. Repairs, replacements, and significant deferred and other maintenance items that need to be addressed within twenty-four (24) months of the date of the CNA. Include any necessary redesign of the Project and market amenities needed to restore the property to the standard outlined in the Qualified Allocation Plan and this Exhibit D.

iii. Repairs and replacements beyond the first two (2) years that are required to maintain the Project's physical integrity over the next twenty years, such as major structural systems.

c. The professional preparing the CNA report must:

i. Conduct site inspections of a minimum of thirty-five percent (35%) of all Units. Units must be randomly sampled but must also include a pro-rata portion of each type of Unit while taking into consideration the Unit size mix, e.g., one-bedroom, two (2) bedroom, etc. All vacant Units must be inspected.

ii. Identify any physical deficiencies as a result of 1) visual survey; 2) review of pertinent documentation; and 3) interviews with the property owner as of the date of the CNA, management staff, tenants, community groups, and government officials.

iii. Identify physical deficiencies, including critical repair items, two (2) year physical needs, and long-term physical needs. These must include repair items that represent an immediate threat to health and safety and all other significant defects, deficiencies, items of deferred maintenance, and material building code violations that would limit the expected useful life of major components or systems.

iv. Explain how the Project will meet the requirements for accessibility to persons with disabilities. Identify the physical obstacles and describe methods to make the Project more accessible, and list needed repair items in the rehabilitation plan.

v. Prepare a rehabilitation plan, addressing separately all two (2) year and long-term physical needs.

vi. Conduct a cost/benefit analysis of each significant work item in the rehabilitation plan (items greater than $5,000) that represents an improvement or upgrade that will result in reduced operating expenses (e.g., individual utility metering, extra insulation, thermo-pane windows, setback thermostats). Compare the cost of the item with the long-term impact on rent and expenses, taking into account the remaining useful life of building systems.

vii. The assessment must include a site visit and physical inspection of the interior and exterior of the units and structures, as well as an interview with available on-site property management and maintenance personnel to inquire about past repairs/improvements and an examination of invoices, contracts or work orders relating to the repairs/improvements over the last twenty-four (24) months, pending repairs, and existing or chronic physical deficiencies. Any information from the interview must be included in the CNA. The assessment must also consider the presence of hazardous materials on the site.

XII. HOUSING FOR SENIORS

Projects that are intended to serve 80% or more senior individuals (persons that are 55 years of age or older) must consist of single story buildings or multi-level buildings with elevators serving all levels of the building.