



UNIVERSAL DESIGN

Universal Design Standards



Community Housing and Grants Management Division
2624 Vermont Ave. | PO Box 1535 | Bismarck, ND 58502-1535
800-292-8621 or 701-328-8080 | 800-435-8590 (Spanish) | 711 (TTY)
www.ndhousing.nd.gov | hfainfo@nd.gov



PROJECT STANDARDS

A. Exterior signage

1. Address and/or building unit/door numbers, etc. shall be no less than 4" in height, in high contrast, and easy to see, day or night, from a distance.

B. Interior common area signage

1. Rooms or spaces shall be accompanied by identifying signage:
 - a. Restrooms, commons area, laundry, and mechanical rooms, exits and emergency exits, including doors, stairs, routes, elevators and elevator car controls.
 - b. Directional or informational signage.
 - i. Any non-accessible exits, restrooms, and elevators shall have directional signage to the nearest accessible exit, restroom or elevator.
2. Braille characters shall be present below all interior common area signage.
 - a. Either Grade 1 or Grade 2 characters are acceptable, however, the choice of grade shall be maintained throughout the building.

C. Stairway

1. Shall have a tread width no less than 36"
2. Shall have a tread depth no less than 11"
3. Shall have a stair height no less than 5.5" and no more than 7"
4. Shall have enclosed risers
5. Tread surface
 - a. Material(s) should be selected with resistance to slipping for any type of footwear in mind.
 - b. Contrasting colors (light/dark) should be used to identify separation between steps. Contrasting the front 2" of a tread from the remaining rear tread greatly assists in the differentiation of steps for occupants descending stairs.
6. Handrails
 - a. Shall be installed contiguous on both sides of stairs within the stairwell.
 - b. Shall extend beyond the top and bottom steps by at least 12" and be contiguous throughout the entire stairwell.
7. Landings at the top and bottom of stairs, and any landing within a stairwell, shall have at least 48x48" unobstructed floor area.
8. Overhead lighting and stair lighting (low & close to step) shall be present, providing even lighting with minimal areas of shadow.
 - i. The intent of this lighting should be to maximize safety and minimize shadows. The placement of light sources is important for occupants to be able to maintain focus on where they are going while avoiding glare.

D. Systems

1. Smoke detectors and carbon monoxide detectors shall have audio and visual alerts.
2. Doorbells shall be capable of audio & visual alerts capable of being seen & heard throughout the unit/home.
3. Doors with peepholes shall have one installed between 56-64" from the floor and lower peephole installed at a height of 43" from the floor.
4. All alert systems shall primarily utilize a building's power system and be supplemented with battery backup.
5. Switches which control a space's lighting shall require 12" or less horizontal reach from any doorway into that space and should be vertically aligned throughout the building.
6. Power outlets and other ports (cable TV, wired networking, etc.) shall be installed between 16"-48" from the floor. These measurements are from the floor to the bottom edge of any cover plate and from the floor to the highest edge of any cover plate.
7. Power outlets shall not be installed less than 20" from any corner.
8. Task areas with dedicated lighting shall have a switch within reach of that area.
9. Switches in areas with counters shall be easy to reach while seated, typically between 36-42" above the floor and not against the rear wall.
10. Switches installed under a counter shall be placed no more than 12" from the front edge of the counter.
11. Temperature and/or climate controls shall be located 36-48" from the floor. These measurements are from the floor to the bottom edge of the control panel and from the floor to the highest edge of the control panel.
12. Temperature and/or climate controls shall be operable without the need to twist, pinch or grasp buttons or switches.
13. If occupants have access unit HVAC filters, access shall be no more than 48" from the floor including any latches to open a filter door.
14. Window controls and locks shall be between 36-48" from the floor.
15. If occupants have access to unit shut-off valves for water and gas, access shall be unobstructed and installed between 36-48" from the floor.

E. At least one accessible route for occupants to dispose of garbage in a manner consistent with accessibility design.

1. Accessible route should be the route with the shortest exterior distance and/or or most direct exterior route.
2. Examples include a trash chute system with receptacles which do not require heavy lifting and are no higher than 48" from the floor or a dumpster with a sliding door whose bottom ledge is no taller than 48" from the ground.

F. Pathways

1. Exterior pathway width greater than or equal to 48 inches.
2. Exterior pathway running slope no more than 1:20 (5%) and cross slope no more than 1:50 (2%)
3. Interior hallways and pathways shall be no less than 42" wide at the narrow-most points.
 - i. When considering furniture placement, no less than 32" of width between all points of travel.

4. Pathway along entrance routes to be evenly lit with minimal areas of shadow. This will most likely require multiple light fixtures.
5. Lights shall be automatically activatable by the level of daylight and/or motion.

G. Entrances

1. No steps required for access to any entrances.
2. Size of the landing area outside each exterior door shall be no less than 60x60".
3. Landing area slope shall be no more than 1:50 (2%) in any direction.
4. Landing area outside each exterior door shall be covered from the weather.
5. An electric door opener shall be installed on at least one entrance door to each building. Ideally, the most commonly accessed by the primary entrance route from the parking area.
6. Lighting shall be automatically activatable and strategically placed to illuminate the doorway, landing area, and any door hardware that is manipulated for opening or closing the door. Lighting should minimize shadows and be glare-free. The use of indirect ambient lighting and low lighting that illuminates the landing areas and doorway without visible bare bulbs, from a standing or sitting position, or translucent covers is ideal.

H. Doors

1. Exterior and Interior doors shall have a clear door width no less than 32" (typically referred to as a 36" door).
2. Force to Open
 - a. Exterior doors shall require no more than 8.5 lbs.
 - b. Interior doors shall require no more than 5 lbs.
3. Height of each door threshold shall be no more than ½" beveled, or ¼" square edged.
4. Hardware shall be 34-48" from the floor.
5. Hardware shall be operable with one hand while not requiring any pinching or grasping.
6. Kick plate installed on the bottom 10" of each interior common area door's push side for the width of the door.
 - a. Not applicable to doors without a push side, such as sliding doors.
7. Open doors should not obstruct paths of travel.

I. Laundry Areas

1. Laundry machines provided for an occupant's use shall be front loading style and installed on a pedestal, raised platform or cabinetry at least 8" in height from the floor.
2. At least 48" of unobstructed floor space in front of a laundry machine.
3. Lighting shall be placed to evenly illuminate all laundry machine(s) and all work areas while minimizing shadows and glare.
4. At least 50% of storage and other places where items are stored or organized shall be located between 18-48" from the floor.
5. Exception: If pull-down shelving is used for all storage over 60" the 50% requirement shall be reduced to 25%.

J. Toilet Areas

1. Walls shall be reinforced (blocking) for the placement and/or future installation of grab bars.
2. Placement locations and lengths for blocking shall be, at a minimum, those indicated as “preferred” within the Fair Housing Act Design Manual, (www.huduser.gov/portal/publications/PDF/FAIRHOUSING/fairfull.pdf).

K. Bathing Areas

1. Walls shall be reinforced (blocking) for the future installation of grab bars and/or a seat.
2. Placement and lengths for blocking shall be, at a minimum, those indicated as “preferred” within the Fair Housing Act Design Manual, (www.huduser.gov/portal/publications/PDF/FAIRHOUSING/fairfull.pdf).

UNIT STANDARDS

A. Kitchens

While being a single area, kitchens contain distinct “workspaces”. The term workspace primarily refers to sinks and cooktops but may include other spaces designed for tasks such as food preparation or other typical kitchen tasks.

1. Shall be adjacent to the primary eating area.
2. Floor space in front of any appliance or counter greater than or equal to 48”.
3. Turning radius greater than or equal to 60” in each workspace.
4. Each workspace shall have an adjacent prep area with at least 29” of vertical under-counter clearance.
 - a. Primarily includes sink & cooktop but may include other workspaces depending on configuration.

5. Sink

- a. Shall be between 34-36” from the floor. Measurement is from the floor to either the top of the counter or sink, whichever is highest.
- b. Adjustable-height counters with a minimum range of 30-42” may be used in lieu of a fixed counter/sink height.
- c. Shall have at least 29” of unobstructed vertical clearance underneath.
- d. Shall have at least 32” of unobstructed horizontal clearance underneath.
 - i. If dual sinks are used, one deeper sink that extends into the under-sink vertical clearance may be used, but the side-to-side and depth clearances under the shallow side must exist.
- e. Shall have at least 18” of unobstructed depth clearance underneath.
- f. Exposed plumbing shall be insulated and padded.

Exception: Underneath clearances can be achieved with closed cabinetry that has flipper doors which fully recess. The width between open doors must still be greater than or equal to 32” and the flooring should extend to the wall underneath.

- g. Faucet hardware shall be operable with one hand while not requiring any pinching or grasping.
- h. Faucet hardware shall be a pull-out spray or include a side spray.

- i. If a garbage disposal is present, its switch shall be no more than 12" from the front edge of the counter.

6. Cooktops & Ovens

- a. Shall have front or side-mount controls which do not require a grip to operate and can be locked.
- b. Shall have at least 29" of unobstructed vertical clearance underneath.
- c. Shall have at least 32" of unobstructed horizontal clearance underneath.
- d. Shall have at least 18" of unobstructed depth clearance underneath.

Exception: Underneath clearances can be achieved with closed cabinetry that has flipper doors which fully recess. The width between open doors must still be greater than or equal to 32" and the flooring should extend to the wall underneath.

- e. Vent/Hood switch shall be no more than 12" from the front edge of the counter.
- f. Oven shall be a wall oven with a side-swing door(s) with the lowest inside surface between 34-42" from the floor.
- g. A microwave oven shall have a permanent location on the counter or in a wall or cabinet. Its inside surface shall be between 34-42" from the floor.
- h. A pull-out shelf shall be installed under each oven with at least 29" of unobstructed vertical clearance underneath when extended.

7. Counters

Counter workspaces should be usable at various heights. Consider all workspace locations, then plan appropriately for the use of different counter heights for each. Adjustable-height counters with a minimum range of 30-42" may be used in lieu of multiple counter heights. The order of priority for multiple counter heights should be:

- a. Standard height (34-36")
- b. Table height (30-32")
- c. Bar height (40-42")
 - i. Counter surface(s) shall be heat-resistant, stain-resistant, and chip-resistant.
 - a. It is not expected for a countertop to be engineered to never encounter damage from heat, stains, or chipping, but materials should be selected with at least a modicum of resistance to damage in mind.
 - ii. Counter corners and edges shall be rounded.
 - iii. Countertops shall be solid colors with no patterns or very low contrast patterns and be minimally reflective.

8. Cabinets and Storage

- a. At least 50% of all storage should be located between 18-48" from the floor. This measurement is from the floor to the top of the shelves or drawers. If pull-down shelving or pull-down hanging storage is used for any storage over 60" from the floor, the 50% requirement is reduced to 25%.

Exception: If pull-down shelving is used for all cabinet storage over 60" or a walk-in pantry exists, the requirement shall be reduced to 50%.

- b. Pull-out shelving or drawers shall be used in storage areas deeper than 18”.
- c. Cabinet hardware shall be usable one-handed and without the need for grip strength.

9. Dishwasher

- a. Shall be either of standard height installed in cabinetry at least 6” off the floor, an ADA-compliant height installed in cabinetry at least 4” off the floor, and/or a drawer dishwasher installed just below the top of the counter.
- b. Shall be able to be easily opened one-handed with minimum grip strength or be a panel-ready model which is able to accommodate a variety of cabinet pulls.
- c. Lighting
 - i. Task lighting shall exist over each workspace. This includes places for tasks such as meal prep, cooking, cleanup, eating and others.
 - ii. Ambient lighting shall illuminate all paths of travel and any areas designed for eating. This should be complementary to task lighting.

B. Bathrooms

1. At least one full bathroom shall be available on each unit’s main floor.
2. Shall have unobstructed floor space of at least 60x60”.
3. Countertops shall be solid colors with no patterns or very low contrast patterns and be minimally reflective.
4. Storage
 - a. At least 50% of storage shall be located between 18-48” from the floor. This measurement is from the floor to the top of the shelves or drawers.
Exception: If pull-down shelving is used for all storage over 60”, the 50% requirement shall be reduced to 25%.
 - b. Towel racks and/or hooks shall be installed no higher than 48” from the floor.
5. Lighting
 - a. Shall exist over the toilet area, at the sink(s), and over the shower and/or tub.
6. Toilet Area
 - a. Toilet seat shall be between 15-19”, measured from the floor to the top of the seat.
 - b. Shall have at least 32” of unobstructed floor space in front of the toilet bowl.
 - c. Shall have at least 16” from one side wall to the midline of the toilet bowl.
 - d. Shall have at least 32” of unobstructed floor space on the opposite side of the toilet which is closest to a wall.
 - e. Toilet paper hardware shall be installed 24” from the floor and 7” from the front of the toilet bowl and not require any fine dexterity skills (pinching or grasping) to change the toilet paper roll.
 - f. Toilet hardware shall have a lever flushing mechanism located on the front of the tank.
 - g. An electrical outlet shall exist near or behind the toilet for ease of future installation of a bidet.
7. Sinks
 - a. Shall be between 34-36” from the floor. This measurement is from the floor to the top of the counter or sink, whichever is highest.

- b. Adjustable-height counters with a minimum range of 30-42" may be used in lieu of a fixed counter/sink height.
- c. Shall have at least 29" of unobstructed vertical clearance underneath.
- d. Shall have at least 32" of unobstructed horizontal clearance underneath.
Exception: Underneath clearances can be achieved with closed cabinetry that has flipper doors which fully recess. The width between open doors must still be greater than or equal to 32" and the flooring should extend to the wall underneath.
- e. If dual sinks are used, one deeper sink that extends into the under-sink vertical clearance may be used, but the side-to-side and depth clearances under the shallow side must exist.
- f. Shall have at least 18" of unobstructed depth clearance underneath.
- g. Exposed plumbing shall be insulated and padded.
- h. Faucet hardware shall be operable with one hand while not requiring any pinching or grasping.
- i. Mirror bottom edge shall be installed no higher than 1" higher than the top of the countertop or backsplash, whichever is higher.
 - i. Backsplash shall not be taller than 4".
- j. Mirror top edge shall be installed no less than 78" from the floor.

8. Bathing Areas

- a. Shall either have no step or a low curb, no more than ½" beveled, or ¼" square edged.
Exception: Bathtubs should only be used in a full bathroom if that same bathroom already has a no step or low curb shower or if there are multiple full bathrooms shared between bedrooms in which at least one of the shared bathrooms has a no step or low curb shower.
 - i. Preferred to have a floor that primarily slopes in no more than two directions. Center drains often result in each side of the floor sloping toward the middle causing any assistance device to wobble. Possible solutions include a trench drain or a standard drain under the side with the shower head.
 - ii. Water management and drainage are of tremendous importance for the safety of the occupant(s) and longevity of the building. The installation of a trench drain to help manage water outside the bathing area is highly recommended.
- b. Shall be constructed/installed without built-in seats.
- c. Shall have a floor that primarily slopes in one direction (center drain).
- d. Shall have a floor of a different material, style, or color than the floor outside the bathing area.
- e. Shall have an open floor space of no less than 36x60" or 48x48".
- f. Shall have at least 36x36" of unobstructed floor space in front of the entrance.
- g. Bathing hardware shall include a handheld shower head, with a hose is at least 48" in length, a height-adjustable wall mount with a lower height no greater than 36" and shall not require pinching, twisting, or grabbing for use.
- h. Shall provide at least one shelf storage space between 18-48" from the floor. This measurement is from the floor to the top of the shelf.

C. Bedrooms

If beds are not furnished for a tenant, a reasonable assumption of a bed size needs to be made for the following requirements. Several factors should be considered when making this assumption.

1. Shall plan for a minimum of 42" of floor space next to at least one side of a bed.
2. Shall plan for a minimum of 32" of floor space at the foot of a bed.
3. Shall plan for a 60" turning radius adjacent to the bed when furniture is present.
4. Shall plan for a 60" turning radius at the entrance to any closet.
5. Entrances to all closets shall be no less than 32" wide.
6. Closets shall have interior lighting.
7. An adjustable height closet shelving and/or clothes rod system shall be used so at least 75% of the closet's storage is able to be located between 18-48" from the floor. This measurement is from the floor to the top of the shelves. If pull-down shelving or pull-down hanging storage is used for any storage over 60" from the floor, the 75% requirement is reduced to 50%.