

## Wheelchair Ramp - Residential Guidelines

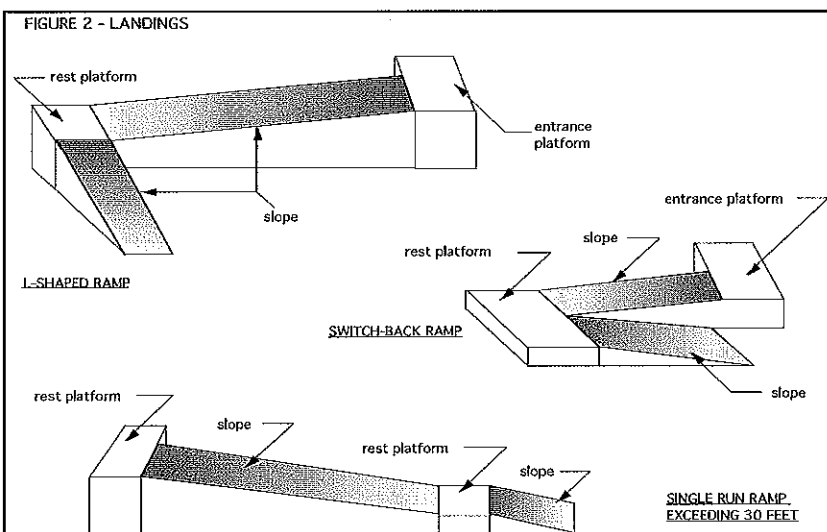
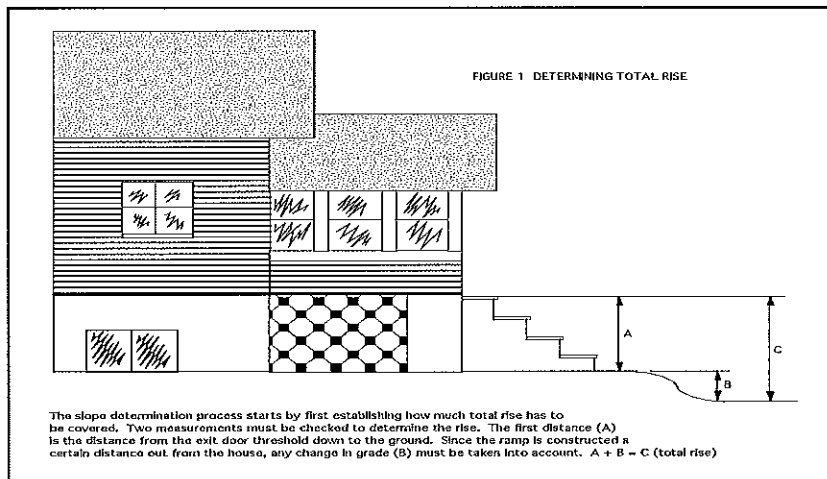
Area:	Dimension:	Description:
Location	To be determined	Evaluate and consider each entrance to the building before making a final decision on the ramp placement. The most obvious ramp location may not necessarily be the most practical. Factors such as interior room location, door placement, gas/electric utility locations, geographic location and proximity to the driveway are important considerations. In some instances, the installation of a new entrance is necessary.
Rise	To be determined	The rise is the distance from the ground (at the anticipated end of the ramp) up to the door threshold. The rise will dictate the length of ramp needed. Grade variations must be considered and calculated. Figure 1 shows how to determine the total rise.
Slope	1:12	The slope is a term to describe how steep a ramp is. In most cases, a one-in-twelve inch slope is recommended. This means that there is one foot of ramp for every one inch of rise. Example: If there is 14 inches of rise from the ground up to the level you are ramping, the ramp should extend 14 feet. Ramps should not have a slope or gradient greater than 1 in 8 or one foot of rise in 8' of run. A 1 in 8 or a 1 in 10 slope should be utilized as a last resort and only if it is not possible to install a 1:12 slope.

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Area:	Dimension:	Description:
Ramp Width	36" - 48"	The minimum ramp width allowed by code is 36" (between handrails). An overall width of 48" is most common.
Landings	To be determined	Provide a level landing at the top, bottom, and at any change in direction of the ramp (Fig.2). A 5' x 5' (minimum) landing is recommended at the top of the ramp. A common mistake is to start the ramp immediately from the door threshold. Some municipalities require that the top landing is frost protected. Intermediate landings or rest platforms should be as wide as the ramp and measure 4' to 8' in the direction of travel. Maintain 5' level area between the end of the ramp and any other structure or obstacle.
Handrail Height	30" - 38"	Ramps that are between 8" and 24" above the ground require handrails on at least one side of the ramp. Ramps over 24" above ground require handrails on both sides of the ramp. The handrail should have a minimum height of 30", and a maximum height of 39" above the ramp surface. The area below the handrails should be protected by intermediate rails or an ornamental pattern to prevent the passage of a sphere with a diameter of 6" or larger. Maintain at least 1-1/2" of clear space between the handrail and any adjoining wall. The handrail grasp should measure 1-1/2" thick.

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Area:	Dimension:	Description:
Door Approach	18" on pull side of door	Maintain a minimum of 18" of clear space outside of the door swing on the pull side of the door. This will ensure that the wheelchair can clear the door swing. The 18" rule may not apply to automatic doors.
Door Hardware	Usable for individual	Install door closers on the top of door. Lever style door handles are preferable versus round handles. Doors with a threshold over 1/2" high should be modified or replaced with a low profile threshold.



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### **MATERIALS:**

Draw an overhead view of the ramp. The drawing will assist the carpenter or building material supplier to compile a materials list. Green treated lumber is most commonly utilized in ramp construction. See your local building supply for information on other types of construction materials.

#### **Posts**

4" x 4"

Install deck posts at the entry door 42" - 48" into ground for frost protection. Also install the two posts at the end of the ramp to secure the handrails. Do not exceed an 8' span between posts. Spans over 8' are prone to excessive warpage and can affect the strength of the handrails.

#### **Stringers & Joists**

2" x 8"

Install stringers 16" on center. Recess the stringers into the ground at the end of the ramp to eliminate any rise. If the end of the ramp lands on top of a solid surface, bevel the stringers accordingly or install a two foot section of 3/4" plywood at the end of the ramp. Bevel the plywood to reduce the 1/2" rise.

#### **Decking**

5/4" x 6", or

3/4" plywood Use 5/4" x 6" decking for exterior ramps. Use 3/4" plywood for interior ramp only. The finished deck surface should be flush with the door threshold or a maximum 1/2" rise.

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### Handrails

2" x 6" top rail

2" x 4" lower rail

2" x 2" spindle

Fasten a 2" x 6" (horizontally and on edge) on the post for the top rail.

Fasten a 2" x 4" (horizontally and on edge) on the post for the lower rail.

Install both rails on the inside of the post. Install 2" x 2" vertical spindles every 6" on center on the outside of the top and lower rails. Allow a 5-3/4" space under the lower horizontal railing for snow removal.

### Handrail Alternatives

3 - 2" x 6"

1-1/2" banister

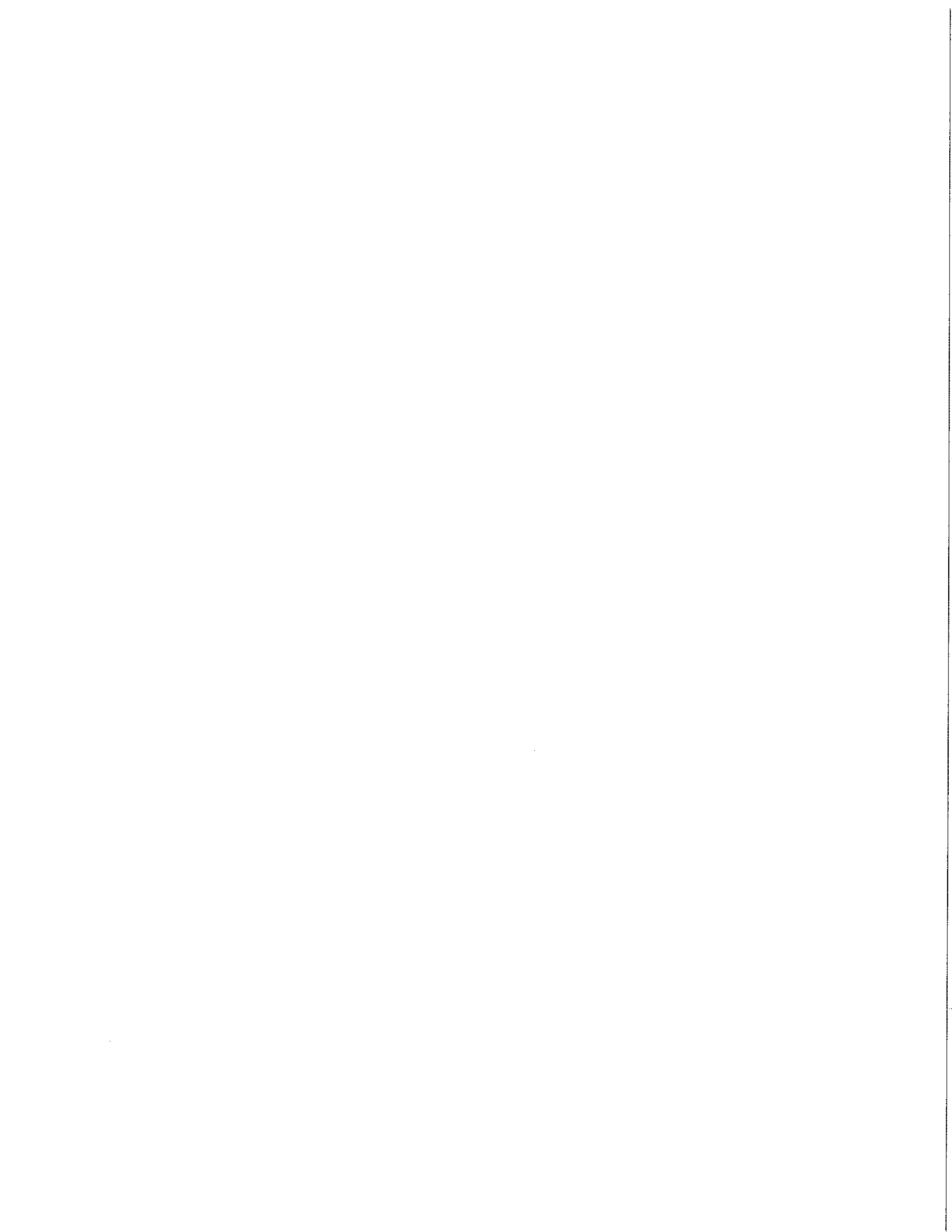
Install three 2" x 6" horizontal handrails (on edge) spaced evenly to prevent the passage of a sphere with a diameter of 6" or larger. Allow a 5-3/4" space under the lower horizontal railing for snow removal. Install a 1/2" round banister handrail fastened to the top rail. A banister handrail can be utilized by someone to pull themselves up the ramp or for an ambulatory individual who needs the rail for stability.

### Non-skid Surface

Paint and silica sand

Sprinkle silica sand on wet paint for a textured surface. Apply a second coat of paint to adhere silica sand to ramp surface. Contact a paint professional for information on ready-made textured paint. This process may need repeating once a year or every other year depending on ramp usage. Most wooden ramps with a 1:12 slope (or less) are considered non-skid.

The installer should know and follow all local building requirements and obtain the necessary permits. For further information contact your local building inspector or your Independent Living Center.



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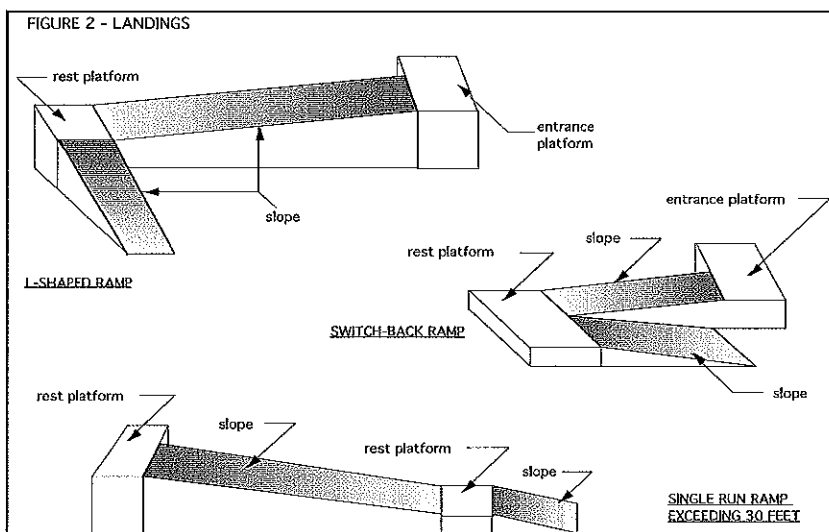
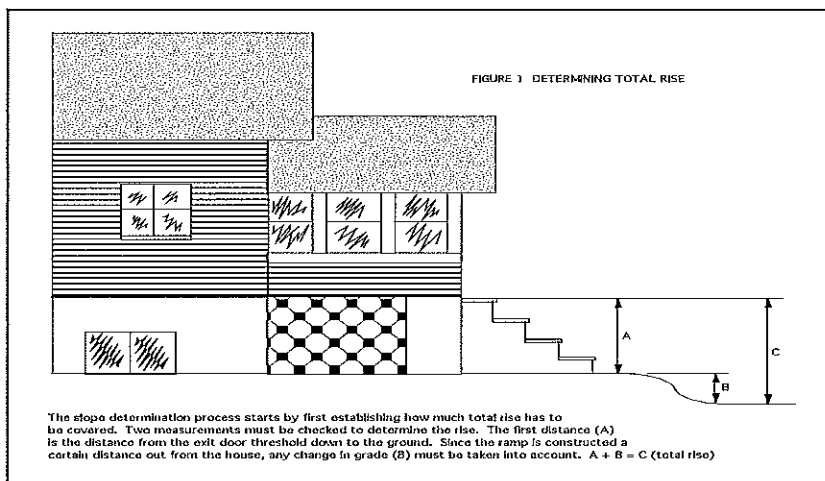
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