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RAMPS

1016.2.1 – RAMP WIDTH

The minimum width of a means of egress ramp shall not be less than that required for corridors by Section 1011.3 of the code. A ramp that is provided as required by Section 1101.1 of the code, but not as an egress ramp, shall be not less than 60 inches wide for exterior access.

A ramp required for accessible interior paths of travel would have a minimum width of 36" for spaces with 50 or less occupants, and a minimum 44" for spaces with more than 50 occupants. The minimum width of 60" for exterior ramps permits sufficient space for two-way travel.

1016.2.2 – RAMP HEADROOM

Refer to BOCA National Building Code/1996 for specific code text.

A minimum headroom height of 80" is required at all ramps, whether for means of egress or accessibility purposes.

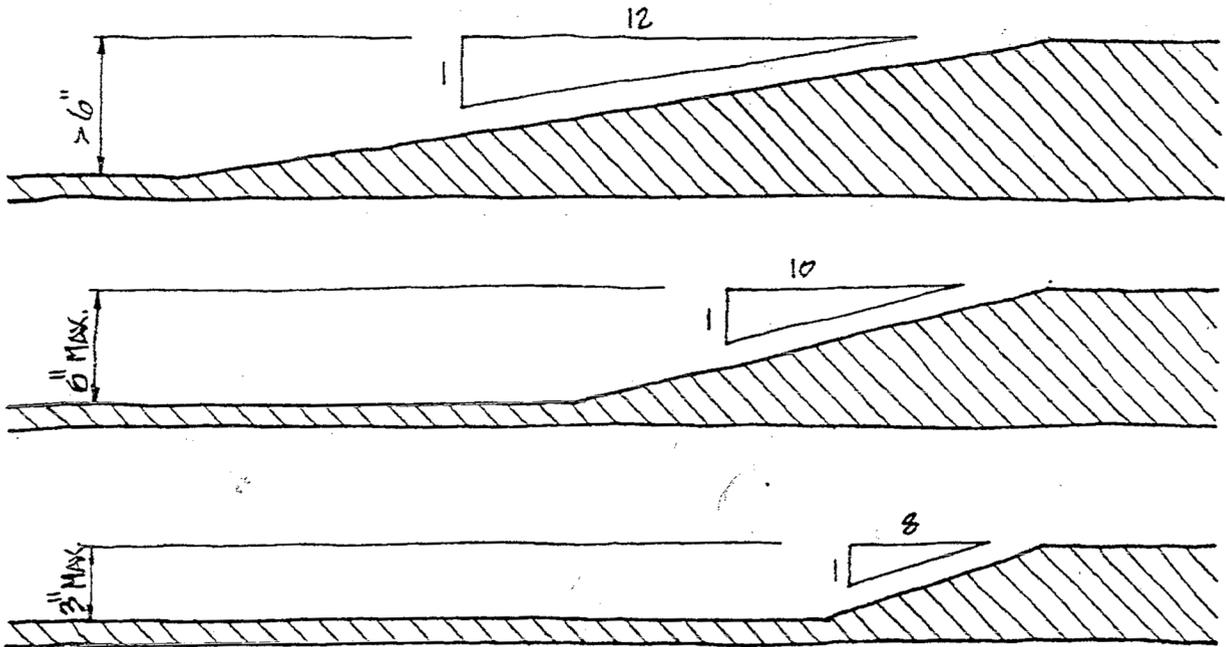## 1016.2.3 – RAMP RESTRICTIONS

Refer to BOCA National Building Code/1996 for specific code text.

A means of egress ramp cannot reduce in width in the direction of egress travel. Projections into the required ramp and landing width are prohibited, except at the handrail, which may have a maximum 3½" projection. A door opening onto a ramp landing cannot reduce the landing width clear of the door swing to less than 42".

1016.3 – MAXIMUM RAMP SLOPE

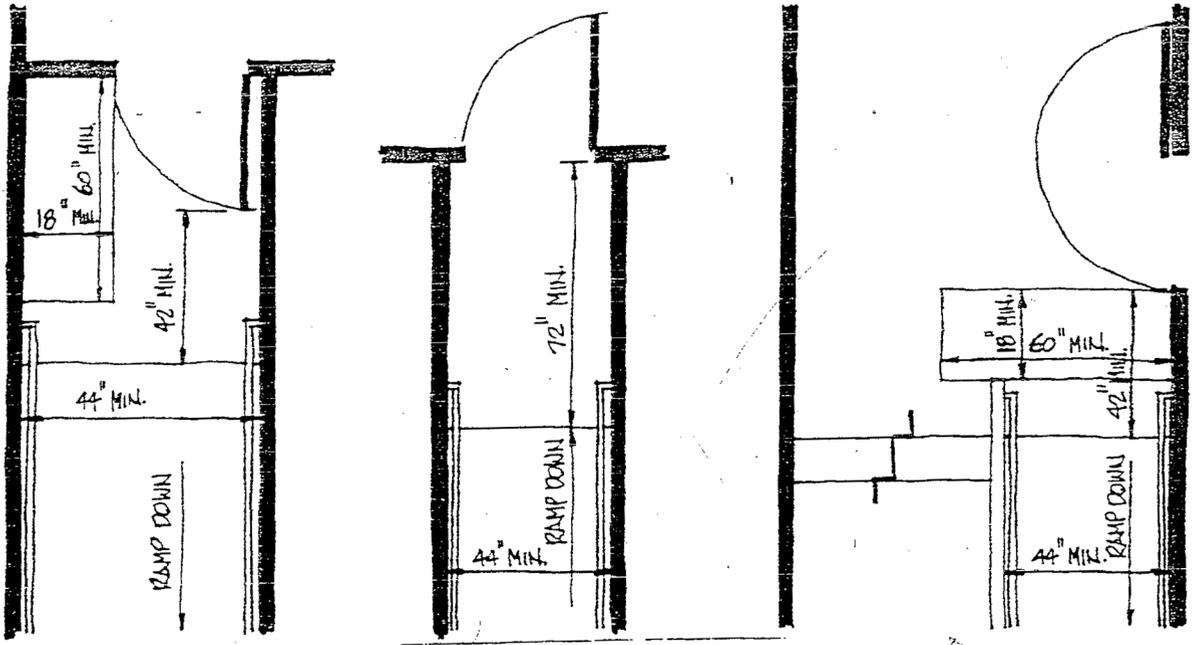Refer to BOCA National Building Code/1996 for specific code text.

The slope of a means of egress ramp cannot exceed 1:12, with the following exceptions: A maximum 1:8 slope is permitted if the vertical rise does not exceed 3", and a maximum 1:10 slope is permitted if the vertical rise does not exceed 6". The maximum permitted slope across the direction of ramp travel is 1:48. Ramped aisles in Use Group A (assembly) occupancies are required to comply with BOCA Section 1012.0. Any ramp provided, whether for accessibility or not, must comply with these requirements. By definition, a means of egress includes a continuous path of travel from any point within a building to a public way. All ramps serve as an element of a means of egress.
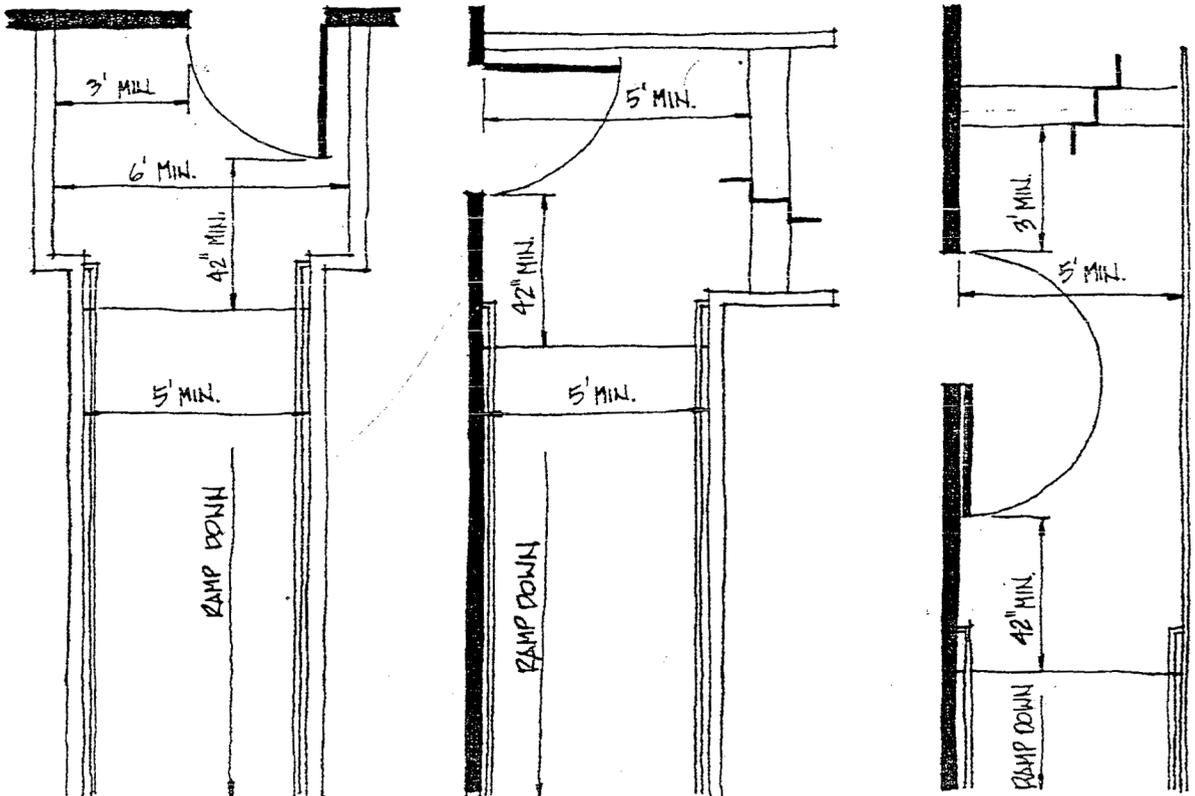
RAMP SLOPE - 1016.3

1016.4 – LANDINGS

Refer to BOCA National Building Code/1996 for specific code text.

Ramps with slopes of 1:12 and steeper must have landings at the top, bottom, all points of turning, entrance, exit, and at doors. A ramp is limited to a maximum 30" between landings. A landing may slope for drainage, but is limited to a maximum slope of 1:48. A landing dimension in any direction shall not be less than the required width of the ramp which it serves, except that the dimension of a landing in the direction of ramp travel may be not less than 48" when the ramp travel from one ramp to another is a straight run. An exception the these requirements are aisles in areas of Use Group A, which must comply with BOCA Section 1012.0.

INTERIOR RAMP LANDINGS - 1016.4.

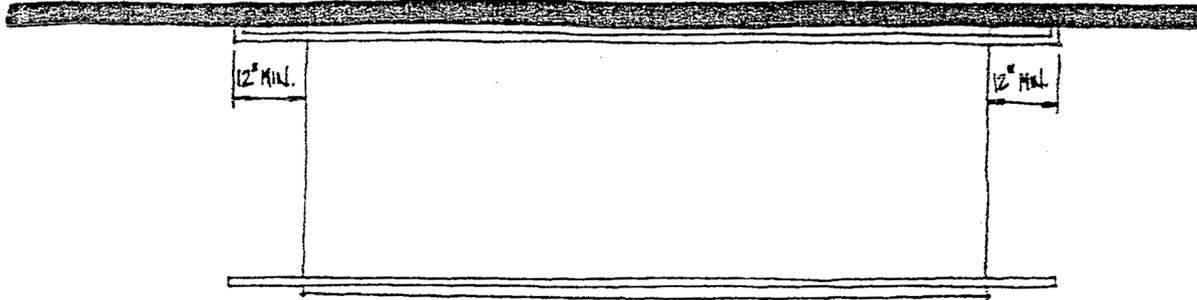

EXTERIOR RAMP LANDINGS - 1016.4.
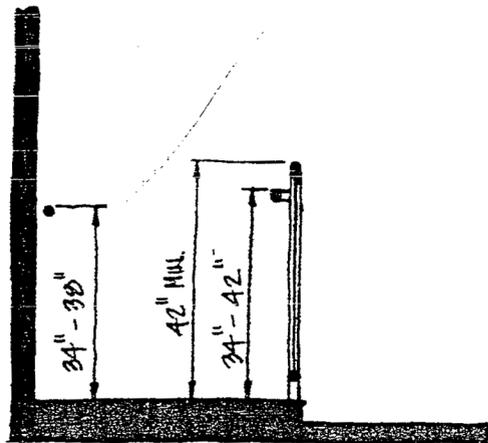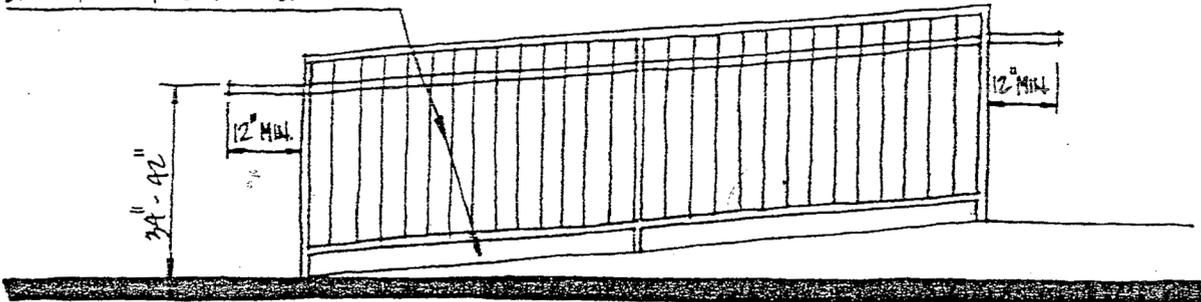
1016.5 – RAMP GUARDS AND HANDRAILS

Refer to BOCA National Building Code/1996 for specific code text.

> Guards must be provided where required by BOCA Section 1005.5 (pg 51) and be constructed in compliance with BOCA Section 1021.0. Handrails complying with BOCA Section 1022.0 must be provided on both sides of every ramp. Handrails are not required on a curb ramp or on a ramp where the vertical rise between landings is 6" or less and the run of the ramp is 72" or less. An exception to these requirements are handrails in aisles of occupancies of Use Group A, which must comply with BOCA Section 1012.0.

RAMP GUARDS AND HANDRAILS - 1016.5, 1022.2.2, 1022.2.3, 1022.2.4

MAXIMUM GUARD OPENING TO
LIMIT PASSAGE OF A 4" SPHERE

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1016.5.1 – RAMP AND LANDING DROP-OFFS
Refer to BOCA National Building Code/1996 for specific code text.

A ramp or landing with a drop-off must have a curb with a minimum 4" height above the walking surface or must be provided with ramp edge protection (guards) in accordance with CABO/ANSI A117.1.

1016.6 – RAMP MATERIALS AND CONSTRUCTION
Refer to BOCA National Building Code/1996 for specific code text.

Ramps must comply with the applicable requirements of BOCA Section 1014.9 for materials of construction and enclosure, of which requires that ramp materials be consistent with that of the construction type of the building. Wood handrails are permitted in all construction types. All finish floor surfaces must be of slip-resistant materials. The minimum required uniform loading is 100 psf, and a concentrated load of 300 pounds.

1016.6.1 – RAMP SURFACE
Refer to BOCA National Building Code/1996 for specific code text.

Ramps must be surfaced with approved slip-resistant materials when there exists a danger of slipping. While a definition is lacking in what conditions involve a danger of slipping on a ramp, a safe assumption can be made that any sloped surface involves a danger, and slip-resistant surfaces are necessary.

1016.6.2 – EXTERIOR RAMP SURFACES
Refer to BOCA National Building Code/1996 for specific code text.

Any exterior ramp or landing must be designed and constructed so that water will not accumulate on the surface. Water on a ramp or landing would present a slipping hazard in freezing weather conditions.

4.8 – RAMPS AND LANDINGS

4.8.1 – GENERAL REQUIREMENTS
Refer to CABO/ANSI A117.1-1992 for specific code text.

A sloped surface which is steeper than 1:20 would be considered a ramp, of which must comply with all applicable ramp requirements.

4.8.2 – MAXIMUM SLOPE AND RISE
Refer to CABO/ANSI A117.1-1992 for specific code text.

This section requires that ramps in new construction have a slope not to exceed 1:12. Since BOCA Section 1016.3 (pg 37) conflicts with CABO Section 4.8.2 in permitting steeper slopes for small vertical rises in new construction, the BOCA provision would prevail by BOCA Section 102.4, and permit steeper slopes on any ramp with vertical rises up to 6". The maximum vertical rise for any ramp run is 30".

4.8.3 – RAMP WIDTH
Refer to CABO/ANSI A117.1-1992 for specific code text.

CABO requires a minimum clear width of 36" at a ramp. This conflicts with MI Section 1016.2.1 (pg 37), and therefore, by BOCA Section 102.4, the minimum widths for ramps would follow MI Section 1016.2.1, that being 44" for interior ramps and 60" for exterior ramps.

4.8.4 – RAMP LANDINGS
Refer to CABO/ANSI A117.1-1992 for specific code text.

Ramps require level landings at the top and bottom of each run. A ramp landing must have a width at least that of the minimum width of any ramp leading to it. The minimum landing lengths would be 60", except the bottom would be 72" minimum, by MI Section 1016.4 (pg 38). The minimum landing size at ramps that change direction would be sized in accordance with MI Section 1016.4, since this section conflicts with CABO. A doorway at a ramp landing is required a clear area in front of the door per CABO Section 4.13.6 (pg 69).

4.8.5 – RAMP HANDRAILS
Refer to CABO/ANSI A117.1-1992 for specific code text.

Any ramp with a vertical rise of more than 6" or a run of 72" or more is required handrails which comply with CABO Sections 4.3.10 (pg 47) and 4.3.11 (pg 48).

4.8.6 – RAMP CROSS SLOPE AND SURFACE
Refer to CABO/ANSI A117.1-1992 for specific code text.

The maximum cross slope of a ramp is 1:48. The ramp surface must comply with the requirements of CABO Section 4.5 (pg 33).

4.8.7 – RAMP EDGE PROTECTION
Refer to CABO/ANSI A117.1-1992 for specific code text.

CABO requires that ramps and ramp landings have a minimum 4" curb, walls, or guardrails that prevent people from falling off the ramp or landing, or must protrude a minimum of 12" beyond the inside face of the handrail. BOCA Sections 1016.5 (pg 40) and 1016.5.1 (pg 41) contains the specifics on ramp guards and would be applicable by BOCA Section 102.4. BOCA does not contain the option for a minimum surface extension of 12" beyond the handrails, therefore this CABO provision would not apply, per BOCA Section 102.4.

4.8.8 – EXTERIOR RAMPS
Refer to CABO/ANSI A117.1-1992 for specific code text.

Exterior ramps must be designed and constructed so that water will not accumulate on the walking surface, so as to not create a hazard in freezing weather conditions.