GENERAL SIDEWALK REQUIREMENTS

Corrective Work: Do not exceed ADA minimum or maximum requirements (unless specified in the contract for a given site infeasibility condition). If exceeded, provide corrective work as approved by the Engineer to bring the work into compliance with ADA Standards.


Provide sidewalk passing zones every 200 ft. [61m] (ADA maximum) where the clear width of the sidewalk is less than 5 ft. [1525]. Passing zones are minimum of 5 ft. [1525] x 5 ft. [1525] (ADA minimum).

Cross-Slope (perpendicular to the travel direction): Slope sidewalks at 1.5% towards street unless otherwise shown. ADA maximum cross-slope = 2.0%.

Sidewalk Grade: If the sidewalk is contained within the roadway/highway right of way, do not exceed the maximum grade for the adjacent roadway. For other areas, do not exceed 4.5% ADA maximum = 5.0%. Exception: curb ramp grades have their own requirements.

Curb Ramps: Provide curb ramps and landings at all pedestrian street crossings and for each direction of travel. Provide perpendicular ramps or combination ramps where available right-of-way exists.

Detectable Warnings: Provide color contrast detectable warnings in accordance with the contract for all ramps for the entire ramp width for perpendicular ramps and the entire street grade landing for parallel ramps. The rust-like patina on cast iron detectable warnings is considered to meet color contrast requirements.

Pedestrian Signal Actuators: Provide in accordance with MUTCD.

Sidewalk Closures (for construction): Provide sidewalk closures in conformance with ADA and MUTCD requirements.

Expansion Joints: Provide expansion joints (shown below) as required in the contract.

CONCRETE SIDEWALK AND ADA ACCESSIBILITY

MINIMUM PEDESTRIAN ACCESS ROUTE WIDTH, HEIGHT, AND PROTRUDING OBJECTS

Do not permit objects (street furniture, signs, trees, branches, etc.) along side or overhanging any portion of a pedestrian circulation path which reduces the clear width of the pedestrian access route below 4 ft. [1220] (5 ft. [1525] or greater preferred) or the clear height below 6'-8" [2030] (8 ft. [2440] preferred). An object above the cane detection line is not permitted to protrude horizontally more than 4 in. [100] from the vertical projection of an object located within the cane detection range.

The requirements above for clear height and protruding objects apply to the entire circulation path for which a pedestrian can walk.
**Detectable Warnings**

**Back of Curbs**
- 2'-0' [610] max. from B.O.C. (Back of Curbs)
- Detectable Warning

**Concrete Sidewalk and ADA Accessibility**

**Detectable Warning**
- 2'' [50] max. from B.O.C. (Back of Curbs)

**Concrete Sidewalk and ADA Accessibility**

**NOTE:**
- The counter slope at the end of a curb ramp or landing/turning space shall not exceed 5%. Where the algebraic sum of the ramp slope and the counter slope exceed 11%, it is feasible to reduce the counter slope to 2% or flat for a minimum of 2 ft. [610] (typically the gutter pan).

**Detectable Warning (and bicycle barriers)**
- Openings will not allow a 6'' [150] sphere to pass in this section
- Openings will not allow a 8'' [200] sphere to pass in the section

**Pedestrian Barrier**
- 3'' [90] min.

**Maximum Counter Slope**
- Recommended treatment when the sum of the ramp slope and the counter slope exceeds 11%.

**Calculating Ramp Length When Chasing Adjacent Sidewalk Cross-Slope**

**Example:**
- \( L = Hc/(R_s-C_s) \)
- \( L = 0.5 \text{ ft.}(0.075-0.015)=8.3 \text{ ft.} [2540] \)

**Note:**
- If the sidewalk is detached so that the area adjacent to the ramp is a planting (presumably with no cross-slope), the ramp length would be 6'-8'' [2030].

**Handrail Requirements**

**Free Standing Handrail**
- Note: Where handrails are required by ADA or provided even if not required, they shall meet these requirements.
- Handrails may be free-standing or attached to a wall or other barrier. Handrails shall be continuous for the distance provided and shall extend 1 ft. [305] beyond the end of a ramp or stairs. See the ADA standards for other requirements for handrails.

**Handrail Attached to Wall or Barrier**
- Lower bar may be deleted if the walking surface extends at least 1'-0'' [305] behind railing.

**Handrail Requirements**

**Note:** Units shown in brackets [ ] are metric and are in millimeters (mm) unless other units are shown.
**PERPENDICULAR RAMP NOTES**

1. **Ramp Width**: Provide 5 ft. [1525 mm] or greater width where possible. If site conditions do not permit, provide a 4 ft. [1220 mm] minimum ramp width. Ensure the ramp is fully contained within the pedestrian crossing.

2. **Ramp Slope**: 7.5% or flatter, ADA maximum = 8.3%.

3. **Ramp Cross-Slope**: 1.5%, ADA maximum = 2.0%.

4. **Landing/ Turning Area**: Provide a landing/turning area at the top of perpendicular ramps with a width equal to the ramp width. Provide a landing length (in the direction of the ramp run) of 5 ft. [1525 mm]. This length can be reduced to 4 ft. [1220 mm] if no vertical obstructions such as buildings, walls, curbs, etc. are directly behind the landing. Do not exceed a slope of 1.5% for the landing in either primary direction (parallel or perpendicular to the ramp run). ADA maximum cross-slope = 2.0%.

5. **Flared Ramp Returns**: Provide flared returns with a relative slope of 10% measured along the curb line. If the flare between ramps is located in a non-pedestrian area (for example, a signal pole blocks passage), the flares may be steeper. Place ramps with flared returns perpendicular to the curb line.

6. **Vertical Ramp Returns**: Vertical returns may be used only if the sidewalk is detached from the curb or obstructions are adjacent to the ramp so pedestrians don't have to step over vertical flares which could become a tripping hazard. When using vertical returns, ensure the ramps align with the intended direction of travel across the street. Ensure slope breaks such as the flow line are constructed perpendicular to the ramps.

7. **Ramp Alignment**: Provide ramps aligned to be fully contained in the intended crosswalk. Provide one ramp for each direction of travel, unless site infeasibility conditions exist or a skewed intersection is present where one ramp better serves both directions of travel. If a diagonal ramp is used, ensure that an imaginary 4 ft. [1220 mm] by 4 ft. [1220 mm] box at the bottom of the ramp can be provided which doesn't extend beyond either face of curb line.

8. **Ramp Length**: Perpendicular curb ramp length is dependent on the ramp slope, height of the curb and any other slopes such as adjacent sidewalk cross-slope that must also be intercepted. See SHEET 2 for calculating ramp length when chasing an adjacent sidewalk cross-slope.

9. **Ramp Construction**: Transition ramp thickness from sidewalk thickness to gutter thickness in the last 18 in. [460 mm] of the ramp.

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**Typical Curb Ramp Type I Treatments**

- **Expansion Joints**: 
  - Expansion joints are provided at the top and bottom of the ramp.

- **Grass, Planting or Other Non-Pedestrian Area**: 
  - Grass, planting, or other non-pedestrian areas are located adjacent to the ramp.

- **Colored Detectable Warning Devices Type**
  - Color-coded detectable warning devices are provided at the top and bottom of the ramp.

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**Diagonal Ramp**

- **Restricted Use Only**: See Note 7

**Narrow Sidewalk Bypass**

- **(Where R/W Permits This Type of Treatment)**

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**Typical Curb Ramp Type I Treatments**

- **Expansion Joints**: 
  - Expansion joints are provided at the top and bottom of the ramp.

- **Grass, Planting or Other Non-Pedestrian Area**: 
  - Grass, planting, or other non-pedestrian areas are located adjacent to the ramp.

- **Colored Detectable Warning Devices Type**
  - Color-coded detectable warning devices are provided at the top and bottom of the ramp.

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**Wide Sidewalk**

- **Expansion Joints**: 
  - Expansion joints are provided at the top and bottom of the ramp.

- **Grass, Planting or Other Non-Pedestrian Area**: 
  - Grass, planting, or other non-pedestrian areas are located adjacent to the ramp.

- **Colored Detectable Warning Devices Type**
  - Color-coded detectable warning devices are provided at the top and bottom of the ramp.
**TYPICAL TYPE I (PERPENDICULAR) CORNER RAMPS WITH FLARED RETURNS**

**NOTES:**
- See notes below.

**Notes:**
- Shaded areas are intended to highlight ramps and flares in the drawings. Color contrast from the sidewalk is only required for detectable warnings.
- Notes 1 through 9 - See SHEET 3
- Expansion Joint - See SHEET 1
- Not a grade break line.
- Make grade breaks (such as the gutter flow line) perpendicular to the ramps.
- Gutter counter slopes should be 2% maximum where possible at curb ramp locations.
- Typically ramp run should extend to flow line. However, when specified, ramp may stop at curb line. In those cases, beginning at the end of the ramp, slope downward at 2% to flow line.

**TYPICAL TYPE I (PERPENDICULAR) CORNER RAMPS WITH VERTICAL RETURNS**

**NOTES:**
- See notes below.

**Notes:**
- Expansion Joint - See SHEET 1
NOTES:
See notes below.

MODIFIED TYPE II (COMBINED) CORNER RAMPS WITH FLARED RETURNS

- Shaded areas are intended to highlight ramps and flares in the drawings. Color contrast from the sidewalk is only required for detectable warnings.

Notes 1 through 9 - See SHEET 3

- Expansion Joint - See SHEET 1
- Not a grade break line.
- Make grade breaks (such as the gutter flow line) perpendicular to the ramps.
- Gutter counter slopes should be 2% maximum where possible at curb ramp locations.
- Typically ramp run should extend to flow line. However, when specified, ramp may stop at curb line. In those cases, beginning at the end of the ramp, slope downward at 2% to flow line.
**TYPE III (PARALLEL) CURB RAMP REQUIREMENTS**

Use type III parallel ramps when it is not feasible to construct type I perpendicular, or type II combined ramps.

1. **Ramp Width**: Provide a ramp width equal to or greater than the adjacent sidewalk run.

2. **Ramp Slope**: 7.5% or flatter, ADA maximum = 8.3%.

3. **Ramp Cross-Slope**: 1.5%, ADA maximum = 2.0%.

4. **"L" Landing/Turning Area**: Provide a landing/turning area at the bottom of parallel ramps with a width equal to the ramp width. Provide a landing length (in the direction of the ramp run) of 5 ft. [1525 mm] minimum. Do not exceed a slope of 1.5% for the landing in either primary direction (parallel or perpendicular to the ramp run). Ensure the landing is fully contained within the pedestrian crossing. ADA maximum cross-slope = 2.0%.

5. **Ramp Length**: Ramp length is normally determined by the ramp slope and the elevation change from the sidewalk to the landing. For flat terrain and a 6 in. [150] curb height the ramp length equals 6'-8" [2030]. Where the terrain is sloping, ramp lengths can get significantly longer. However, ADA does not require the ramp length to exceed 15 ft. [4.6 m].

6. **Single or Dual Pair Ramps**: Provide dual pair ramps when they adequately fit site conditions and align with ramps on the other side of the street. Dual ramps are not practical due to existing site conditions, provide single pair ramps. Ensure the ramp landings are fully contained within the pedestrian crossing.

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**Note**: Units shown in brackets [ ] are metric and are in millimeters (mm) unless other units are shown.
ENGINEERING SERVICES

WBW

ADA ACCESSIBILITY

CONCRETE SIDEWALK AND
DRIVEWAYS & APPROACHES

TYPICAL SIDEWALK AND/OR DOUBLE GUTTER TREATMENT AT APPROACHES

TYPE A - PEDESTRIAN SIDEWALK WITH EXTERNAL BYPASS

[USE FOR SIDEWALK ADJACENT TO CURB WHERE RIGHT-OF-WAY PERMITS CONSTRUCTION]

NOTE:
Elevate depressed sidewalk 1" to 1 1/2" [25 to 38] above flow line of gutter unless this driveway doubles as a curb ramp.

TYPE B - PEDESTRIAN SIDEWALK WITH INTERNAL BYPASS

[USE WITH SIDEWALK WIDTHS 7' [2135] AND WIDER]

TYPE C - DEPRESSED PEDESTRIAN SIDEWALK

[USE WITH SIDEWALK WIDTHS 5' [1525] OR.GREATER]

TYPE D - DETACHED PEDESTRIAN SIDEWALK

(MOST DESIRABLE TREATMENT)

NOTES:

1. DRIVeways AND APPROACHES: Driveways and approaches are paid as for sidewalk behind the back of curb line (including retention curbs) and curb & gutter in front of the back of curb line unless double gutter is specified at a given location. The shaded area represents the pay limit if double gutter is specified and the entire shaded area will be constructed to the depth specified for double gutter.

2. CROSS SLOPE: Slope sidewalks at 1.5% towards street unless otherwise shown. AOA does not permit the cross-slope to exceed 2.0%.

3. RAMP SLOPE: 7.5% or flatter, AOA maximum = 8.3%.

4. DRIVEWAY SLOPE: Driveway slopes typically exceed ADA cross-slope requirements, therefore the pedestrian access route through a driveway must be made to not exceed 2% (AOA). If a driveway serves a dual purpose as an ADA curb ramp and a driveway, the driveway must conform to perpendicular curb ramp requirements. For Single use driveways (such as residential), where the driveway is relatively flat after the initial rise to curb height (typically 6 inches [150] high) the driveway slope can be achieved in a length of 4 feet [1220] perpendicular to the street. For curb approaches, flatter driveways should be considered to reduce the effect of slowing traffic on the street.

5. ADA maximum = 8.3%.

DRIVEWAYS & APPROACHES

Note: Units shown in brackets [ ] are metric and are in millimeters (mm) unless other units are shown.
**NOTES:**

**ACCESSIBLE PARALLEL PARKING SPACES** should consist of the standard parking stall (8 ft [2440] min. width) plus 5 ft [1525] to accommodate van wheelchair lifts and access from either side of a vehicle.

**Bus Pullouts:**
- \( L_u \) = Length of bus - 10 ft [3.0 m]
- \( L_m \) = Length required for bus to maneuver into pullout
- \( L_o \) = Length required for bus to maneuver out of pullout

See plans for locations and actual dimensions of accessible parking stalls and/or bus pullouts.

**MEDIAN OR ISLAND CUT**

**MEDIAN WIDTHS**

- **6' [1830]** and wider - provide detectable warnings. Provide 2 ft [610] clear between detectable warnings. These are considered pedestrian refuge islands.
- Less than 6 ft [1830] - don't provide detectable warnings. Only provide cut-through. These medians are not considered pedestrian refuge islands.

**DETECTABLE WARNING DEVICES**

- Provide level landings 4 ft [1220] minimum long by 5 ft [1525] minimum wide in the center of the island. Provide ramps (slope 7.5%) on each side with detectable warning devices.

**LESS THAN 9' [2745] MEDIAN WIDTHS**

Provide a longitudinal slope for the pedestrian path through the island not to exceed 2% (1.5% preferred) and crowned at the center of the island. Do not provide a cross-slope for the pedestrian path through the island.

For Islands:
- 6 ft [1830] and wider - provide detectable warnings. Provide 2 ft [610] clear between detectable warnings. These are considered pedestrian refuge islands.
- Less than 6 ft [1830] - don't provide detectable warnings. Only provide cut-through. These medians are not considered pedestrian refuge islands.

**CONCRETE SIDEWALK AND ADA ACCESSIBILITY**

**ENGINEERING SERVICES**