



O R E G O N

Marion County Americans with Disabilities Act (ADA) Design Standards and Requirements

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March 2021



Marion County

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I. Introduction

The following design standards are based on requirements outlined in the Americans with Disability Act (ADA) and have been adopted into the Marion County Public Works Engineering Standards. These standards are now required for all ADA-related work within the public rights-of-way under County jurisdiction. The standards contained herein are based upon the proposed *Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way* (PROWAG, dated July 26, 2011) and the *ADA Accessibility Guidelines* (ADAAG), both published by the United States Access Board.

This document is organized into 12 sections with each dedicated to a specific ADA-related topic:

- Section I – Introduction
- Section II - Definitions
- Section III - When ADA Improvements are Required
- Section IV - Curb Ramp Design Standards
- Section V - Pedestrian Street Crossings
- Section VI - Pedestrian Activated Signal/Beacon Pushbuttons
- Section VII – ADA Design Plan Requirements
- Section VIII - ADA Design Exception Process
- Section IX - Crosswalk Closure Process
- Section X - Temporary Pedestrian Access Route (TPAR)
- Section XI - ADA Construction Inspection
- Section XII - Guidance and Resources

II. Definitions

Cross Slope: The grade of a surface perpendicular to the running slope or traversed surface in the direction of pedestrian travel.

Counter Slope: The grade of the street or gutter pan perpendicular to the curb or street edge.

Curb Running Slope: The grade of the curbed surface perpendicular to the gutter flow line, excluding any gutter pan adjacent to the street.

Flare: The part of a sidewalk adjacent to a curb ramp that provided a transition between the ramp run of the curb ramp and the sidewalk level.

Flare Slope: The grade of the flare which is immediately parallel to the adjacent curb line at a curb ramp.

Grade: The rate of ascent or decent of a surface with respect to a level plane.

Grade Break: The difference in percent between two surfaces with respect to a level plane.

Gutter Flow Slope: The grade immediately parallel to the curb or street edge where water is conveyed to a drainage system.

Running Slope: The grade of a surface parallel to the direction of pedestrian travel on a curb ramp or driveway.

Transition Panel: A concrete panel that warps from the cross slope of the new work to the cross slope of the existing sidewalk.

III. When ADA Improvements are Required

In Oregon, legal crosswalks are located at every roadway intersection (ORS 801.220), whether they are marked or unmarked, unless officially closed by the jurisdictional road authority.

In order to provide pedestrian accessibility, ADA-compliant curb ramps and sidewalks are required for all new construction in existing public rights-of-way or areas that will be dedicated or transferred for public right-of-way purposes. Examples include, but are not limited to:

- Single family subdivisions
- Street widening
- Half-street and street frontage improvements
- Sidewalk and driveway replacements in urbanized areas
- New traffic signals or signal upgrades
- Retrofit work anywhere within existing curb returns, from the point of curvature (PC) to the point of tangency (PT)
- Street paving within intersections, including resurfacing.

An ADA-compliant sidewalk area is not required for driveway replacements in rural areas (outside of any urban growth boundaries) where no pedestrian facilities exist.

IV. Curb Ramp Design Standards

There are generally three types of curb ramps:

1. Perpendicular – running slope in direction of street crossing
2. Parallel – running slope in direction of sidewalk travel
3. Combination – running slopes both parallel and perpendicular to the street crossing

See Attachment A for an illustration of curb ramp types and design slopes.

As per Subsection R207.1 of the PROWAG (36 CFR Part 1190), "*The curb ramp (excluding any flared sides) or blended transition shall be contained wholly within the width of the pedestrian street crossing served*". As such, individual curb ramps are to be constructed for each direction of pedestrian travel, which typically results in two *directional* curb ramps per corner.

Single *diagonal* curb ramps serving two directions of pedestrian travel are not allowed unless construction of two directional curb ramps is not technically feasible and a design exception request has been approved. Additionally, an approved design exception request is required for a curb ramp design where full compliance with ADA standards is not technically feasible. See Section VIII for a description of Marion County's ADA design exception process.

Design exception requests will only be considered for technical infeasibility. The cost of meeting ADA requirements is not a factor that will be considered when evaluating such requests.

In rare instances where retrofit work is being designed at the intersection of two functionally classified "Local" roads and the criterion of PROWAG Section R207 can be met with a single curb ramp, contact the Land Development Engineering & Permits Supervisor for further direction.

A. Dimensions

Curb ramp dimensions shall be as follows:

1. Ramp Width:
 - 5' nominal, 4' minimum
 - Minimum width is exclusive of flares
2. Turning Space at Top of the Ramp:
 - 5'x5' nominal, 4'x4' minimum
 - If constrained at back of walk, then the minimum turning space is 4'x5' with the 5' measurement in the direction of ramp run. Example constraints are curb, retaining wall, building walls, etc.
3. Clear Width:
 - Minimum clear width through the pedestrian access route (flares and curbs are excluded) shall be 5' nominal, 4' minimum
 - Minimum clear width through a cut-through refuge island shall be 5.5' nominal, 5' minimum
 - Curb ramps designed for shared-use paths shall have a minimum width equal to the approaching path width

B. Design Slopes

Curb ramp slopes shall be designed as follows:

1. Running Slope: 7.5% maximum
2. Cross Slopes: 1.5% maximum
3. Turning Space: 1.5% maximum in all directions
4. Counter Slope: 4.0% maximum, whether ascending or descending. The standard applies to gutters and road surfaces within 2' of a curb ramp as measured

perpendicular to the curb

5. Gutter Flow Slope: 1.5% maximum at the bottom of curb ramps where roadway is controlled by a stop or yield sign. At an intersection crossing where the roadway is not controlled by a stop or yield sign, the maximum gutter flow is the adjacent road profile grade, not to exceed 4.5%.
6. Ramp Flares: 10% maximum measured from the horizontal (zero), with a 1' minimum separation between flares
7. Transition Panels: The transition panel must be long enough so the rate of cross slope transition does not exceed 0.5% per lineal foot. Running slope of the panel should meet existing sidewalk grade.

Note: Design slopes are less than maximum allowable slopes to ensure the as-constructed condition does not exceed the maximums.

C. Truncated Dome Detectable Warning Surfaces

The detectable warning surfaces shall meet the following requirements:

1. Measured 2' minimum in size
2. Orient domes in direction of travel
3. Extended as follows.
 - a. For parallel ramps, extend across the full width of the turning space
 - b. For all other ramps, extend to the full width of the ramp
4. Placed as follows.
 - a. When the bottom grade break is 5' or less from back of curb, place detectable warning surface on ramp run just above bottom grade break. Where no curb is present, place the detectable warning surface at the edge of the roadway.
 - b. When the bottom grade break is more than 5' behind the curb, place detectable warning surface on the lower landing at the back of the curb.
 - c. At a freight rail crossing, the closest edge is placed 12'-8" from the center of the nearest rail.
5. Select from current ODOT Qualified Products List (QPL)
6. Be plastic in a safety yellow color.

D. Other Requirements

1. Grade breaks at the top and bottom of curb ramps runs shall be perpendicular to the direction of the ramp run.
2. Beyond the bottom grade break, there shall be 4'x4' minimum clear space wholly outside of the parallel vehicle lanes. The clear space shall meet the slope requirements for the street crossing, as applicable to the specific location of the clear space.
3. Curb exposure height shall be at least 3" between curb ramps.
4. Parallel curb ramps shall have a 5' minimum edge-to-edge separation from other parallel curb ramps.
5. Transitions at all grade breaks must be flush and free of abrupt level changes (no

lip or other vertical surface discontinuity).

6. There shall be no drainage grates within the pedestrian access route.

For additional guidance, refer to the Marion County Standard Details and Oregon Standard Drawings RD 710 and RD 754 through RD 759. A link to these drawings is provided in Section XII.

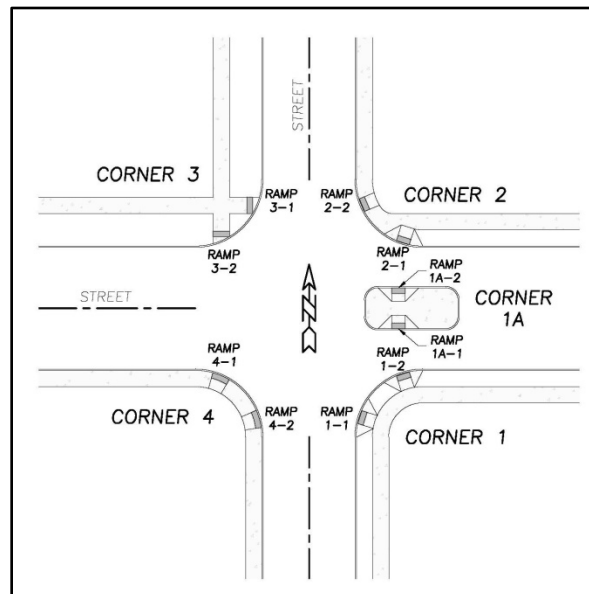
E. ADA Curb Ramp Design Checklist

A completed Marion County ADA Curb Ramp Design Checklist shall be submitted for all curb ramp designs. Eight curb ramps can be documented per form. A new checklist form shall be used for each intersection.

Check each box when the standard is met. Any unchecked box responses require re-design or approval of a written design exception request in order to proceed.

With a north orientation, curb ramp corner positions shall be numbered 1 to 4 in a counterclockwise direction starting at the southeast corner. For example, ramp 1-1 is the east-west ramp and ramp 1-2 is the north-south ramp at the southeast corner of the intersection. An "A" is added for refuge islands (e.g. 1, 1A, 2, 2A...).

Curb Ramp Location and Numbering



Refer to Section XII for additional curb ramp design guidance and forms.

V. Pedestrian Street Crossings

A. Slopes - For New Construction or Full Reconstruction

Slopes in pedestrian access routes within the street crossings shall meet the following

requirements:

1. 5% maximum grade (running slope)
2. Cross slopes:
 - a. 2% maximum, except for street crossings without stop or yield control
 - b. 5% maximum at street crossings without yield or stop control
 - c. May equal street grade at midblock street crossings

B. Counter Slope

Counter slope is based on the maximum allowable grade difference between the ramp slope and the street cross slope. The counter slope is measured in the direction of pedestrian travel to cross the street and is the slope of the area below the truncated domes, gutter or street at the foot of the curb ramp runs, blended transition and turning spaces. The as-constructed slope shall be a maximum of 5%.

Refer to Section XII for additional street crossing guidance.

VI. Pedestrian-Activated Signal/Beacon Pushbuttons

A. Pushbutton Locations

Pedestrian pushbutton locations shall be designed to the following standards:

1. With clear space to access the pushbutton:
 - a. 30" x 48" for a parallel approach
 - b. 36" x 48" for a head-in/back-in maneuver, with a maximum cross slope of 1.5%
 - c. Connected to the crosswalk served by the pushbutton
 - d. Allowed to overlap other ramp elements such as the turning space and sidewalk
2. Horizontal reach to the pushbutton: 10" maximum
3. Vertical reach to the center of pushbutton: 36" to 48" (42" nominal) from the adjacent finish grade
4. Distance from edge of curb (measured in the direction of travel):
 - a. 1.5' to 10' desired
 - b. 15' maximum, where there are constraints that make it impractical to place within desired distance
5. Distance from edge of ramp/crosswalk line: 5' maximum
6. Pushbutton face orientation: parallel to crosswalk to be used
7. Distance from other pushbuttons: 10' minimum

Refer to Section XII for additional signal/beacon pushbutton guidance.

VII. ADA Design Plan Requirements

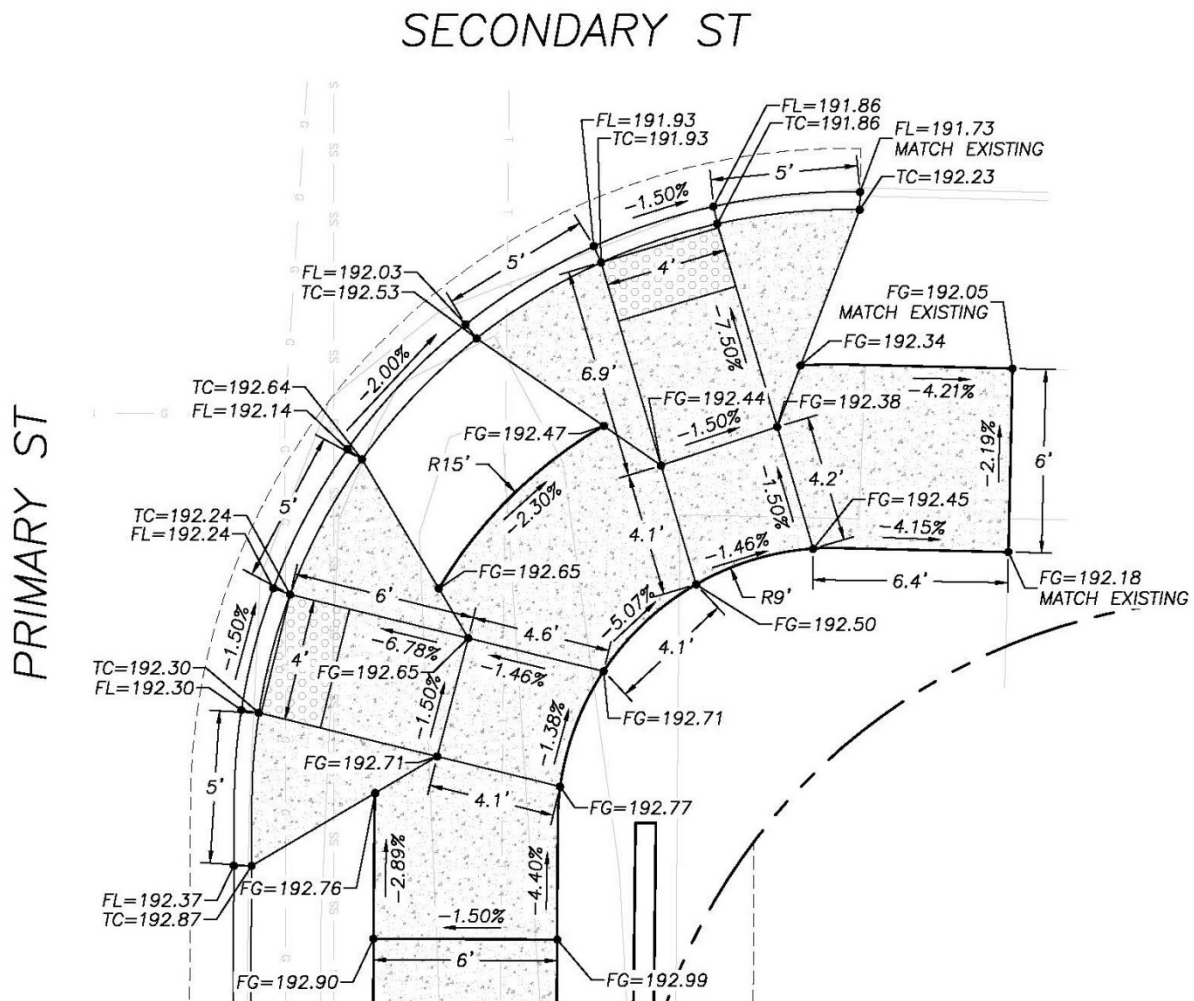
A detailed design of each curb ramp shall be included in the construction plan set to display conformance with the Marion County Curb Ramp Design Checklist and shall

include the following components.

- All required dimensions (scalable)
- All design slopes
- Elevations at each grade break

Referencing standard drawings for curb ramps in plans in lieu of curb ramp design detail sheets is no longer acceptable.

Example Curb Ramp Detail



In addition to the design plans, plan submittals shall include the following items:

- Completed Marion County ADA Curb Ramp Design Checklist(s)
- Approved ADA Curb Ramp Design Exception Request(s), if required
- Approved Crosswalk Closure Request, if applicable
- A comprehensive, final Temporary Pedestrian Access Route (TPAR) plan included in the traffic control plans (see Section X for TPAR information)

VIII. ADA Design Exception Process

If it is determined that any features of a particular curb ramp design cannot meet ADA standards, alternative curb ramp designs will be explored to ensure the greatest compliance possible. A design exception can only be requested if there are no fully compliant curb ramp options that are technically feasible. A link to the ADA Curb Ramp Design Exception Request form is included in Section XII.

Example exceptions to the design standards may include: underground structures, historic preservation, topography or underlying terrain, utilities, and right of way restrictions such as a building with a zero lot-line setback.

The following process applies to work in all public rights-of-way under Marion County jurisdiction.

ADA Design Exception Process for Work on County Roadways	
1	If any curb ramp cannot be designed to fully comply with ADA requirements, the Engineer-of-Record (EOR) shall complete a draft ADA Curb Ramp Design Exception Request form to justify the request and to document the design as complying to the maximum extent feasible.
2	The EOR shall submit the draft request form to the Marion County Land Development Engineering & Permits (LDEP) Supervisor or Capital Projects Manager (as applicable) to review and comment.
3	Marion County staff will review and return comments regarding the design exception request.
4	The EOR shall resolve all comments, sign and seal a final ADA Curb Ramp Design Exception Request form, and submit the form to the Marion County LDEP Supervisor or Capital Projects Manager (as applicable).
5	The Marion County LDEP Supervisor or Capital Projects Manager (as applicable) will review for concurrence, sign, and submit the final ADA Curb Ramp Design Exception Request form and supporting documentation to the Marion County Engineer for approval.
6	The Marion County Engineer will review and issue final approval by signing and sealing the final ADA Curb Ramp Design Exception Request form and routing it back to the EOR to file in the project records.
7	If the Marion County Engineer does not approve a particular design exception proposal, the ramp shall be redesigned, so that a design exception can be approved or the crossing must be evaluated for closure with a determination being made in accordance with Section IX.

Design exception request approval is not guaranteed.

Refer to Section XII for ADA design exception guidance and forms.

IX. Crosswalk Closure Process

The decision to close a crosswalk must consider the safety and convenience of pedestrians. Forcing pedestrians to take a less direct route could expose them to more traffic conflicts.

Crosswalk closures are only considered for hazard mitigation (safety) and must be approved through an official crosswalk closure request. Example safety issues may include inadequate sight distance, conflicting driveway approaches, some separated roadway situations or crosswalks that currently function as closed.

The cost of meeting ADA requirements is not a factor to be considered in whether a crosswalk is to be closed or removed. All crosswalk closure requests shall document an alternate ADA accessible path between the two points of the crossing that are being closed demonstrating that the closure will not adversely impact accessibility.

At crosswalks officially approved for closure by the County, crosswalk closure signs shall be installed according to ODOT's Oregon Standard Drawing TM240 (Crosswalk Closure Detail). In addition to the signage, detectable features such as grass strips, landscaping, planters, chains, fencing, railing, or other barriers are recommended to enhance pedestrian safety.

The following process is required to officially close crosswalks under Marion County jurisdiction.

Crosswalk Closure Process for Work on County Roadways	
1	For any crosswalks that are recommended for closure due to safety or other hazard mitigation reasons, the Engineer-of-Record (EOR) shall complete a draft Crosswalk Closure Request form to justify the request.
2	The EOR shall submit the draft request form to the Marion County Land Development Engineering & Permits (LDEP) Supervisor or Capital Projects Manager (as applicable) to review and comment.
3	Marion County staff will review and return comments regarding the crosswalk closure request.
4	The EOR shall resolve all comments, sign and seal the final Crosswalk Closure Request form, and submit it to the LDEP Supervisor or Capital Projects Manager (as applicable).
5	The Marion County LDEP Supervisor or Capital Projects Manager (as applicable) will review for concurrence, sign, and submit the final Crosswalk Closure Request form and supporting documentation to the County Engineer for their approval recommendation.
6	The County Engineer will review and sign the final Crosswalk Closure Request form recommending approval before submitting to the Marion County Public Works Director for final approval.
7	The Public Works Director will review and issue final approval by signing the final Crosswalk Closure Request form and routing it back to the originator for filing in the project records and upload to the County's curb ramp inventory GIS database.

Refer to Section XII for crosswalk closure guidance and forms.

X. Temporary Pedestrian Accessible Route (TPAR) Plan

Providing safe, efficient and accessible pedestrian facilities through and around work zones is a required component of every project impacting the public rights-of-way under Marion County jurisdiction.

If pedestrians could travel through the area before the work zone is put in place, all pedestrians (including people with mobility disabilities) must be able to travel through or around the area once the work zone is in place.

As such, a Temporary Pedestrian Accessible Route (TPAR) plan that matches or exceeds the existing level of accessibility shall be provided as part of the temporary traffic control plan when existing pedestrian facilities are impacted by construction, construction staging, or maintenance activities.

The design and implementation must conform to Chapter 6D of the Manual on Uniform Traffic Control Devices (MUTCD), applicable ODOT design standards and the guidance contained in ODOT's TPAR Overview brochure.

A TPAR plan is required to be included in all design plans where construction will impact existing pedestrian access routes.

Refer to Section XII for TPAR guidance.

XI. ADA Construction Inspection

All ADA-related construction must be inspected and accepted by Marion County. Any work performed on the project without inspection is considered unauthorized and may be subject to removal and/or replacement at the Owner/Developer or Contractor's expense. The Public Works Inspector is the County's representative on the project during construction of ADA facilities within the public rights-of-way.

County Inspectors can be available from 8:00 a.m. until 3:30 p.m. on regular business days (excluding state holidays). The Owner/Developer or Contractor shall notify the County Inspector a minimum of 24-hours before the services of the Inspector will be required on the job. Marion County will work to meet Contractor's schedules, but if advance notice is insufficient, inspection services may not be available and the Contractor or Owner/Developer may be required to delay work until an Inspector is available.

If the Contractor elects to work extended hours, weekends, or holidays, the Contractor must receive prior approval from the County Inspector. Inspection services may be available at other times, but are not guaranteed outside of normal weekday work hours.

All costs associated with ADA inspections are included in the permit fee.

Marion County utilizes the inspection processes as described in ODOT guidance entitled *Inspecting Curb Ramps and Pedestrian Signals* and uses the ODOT Curb Ramp Inspection forms to document ADA compliance.

ADA curb ramps must pass all elements indicated on the ODOT ADA Curb Ramp Inspection forms to be accepted by Marion County. Any repairs required to bring the curb ramp into conformance are the responsibility of the Owner/Developer or Contractor.

Consequences for failing to repair non-compliant curb ramps may include (depending on the nature of the project) withholding final subdivision or partition plats, withholding certificates of occupancy or attaching the bond of the Owner/Developer or Contractor.

Refer to Section XII for curb ramp inspection guidance and forms.

XII. Guidance and Resources

Governance

[Americans with Disabilities Act \(ADA\)](#) – Information and Technical Assistance, United States Department of Justice, Civil Rights Division

[2011 NPRM Advisory to R206](#) – Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG), United States Access Board, July 26, 2011

[ADA Accessibility Guidelines \(ADAAG\)](#) - United States Access Board, September 2002.

Curb Ramp Design

[Oregon Standard Drawings, Roadway 700 Series](#)

[Oregon Bicycle and Pedestrian Design Guide](#), – Chapter 5

[Marion County Access, Sidewalk and Curb Ramp Details](#)

[Marion County ADA Curb Ramp Design Checklist](#)

Signal Pushbuttons

[Manual on Uniform Traffic Control Devices \(MUTCD\)](#) – Chapters 4E and 4F

[ODOT Traffic Signal Policy and Guidelines](#) – Section 5

[ODOT Signal Design Manual](#) – ADA pushbutton guidance is in Chapter 5, Section 5.4

[MG144-03](#), ODOT Operational Notice - Traffic Signal Work and Americans with Disabilities Act (ADA), December 1, 2017

ADA Design Exceptions

[Marion County ADA Curb Ramp Design Exception Request form](#)

[RD16-01\(B\)](#), – ODOT Technical Services Bulletin, ADA Curb Ramp Design Exception Request Form and ADA Curb Ramp Guidance, December 22, 2016

Crosswalk Closures

[ORS 801.220](#) – Crosswalk

[2017 ORS 810.080](#) – Pedestrian Traffic

[Marion County Crosswalk Closure Request Form](#)

[ODOT Traffic Manual](#)

[Oregon Standard Drawing TM240](#) – ODOT Crosswalk Closure Detail

Temporary Pedestrian Accessible Route (TPAR) Plans

[Manual on Uniform Traffic Control Devices \(MUTCD\)](#) – Chapter 6

[ODOT Traffic Control Plans Design Manual](#) – Chapter 3

[ODOT TPAR Overview Brochure](#)

Curb Ramp Inspection

[Inspecting Curb Ramps and Pedestrian Signals](#) – ODOT Guidance

[RD 19-02\(B\)](#) – ODOT Technical Services Bulletin regarding measurement and acceptance of curb ramps, sidewalks and driveways with design exceptions

Inspection Forms for Each Type of Curb Ramp:

[Blended Transition Curb Ramps](#)

[Parallel Curb Ramps](#)

[Combination Curb Ramps](#)

[Perpendicular Curb Ramps](#)

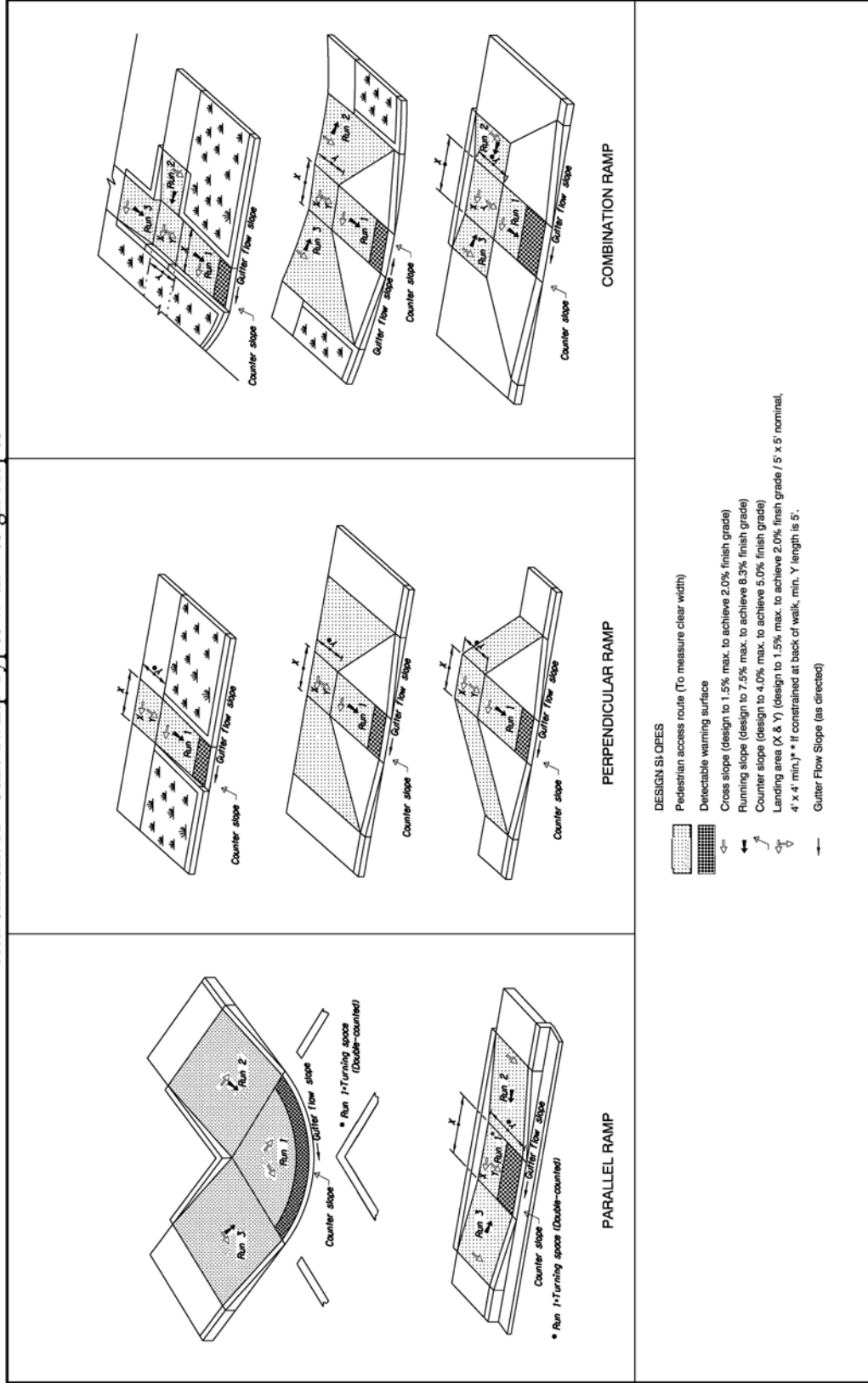
[Cut-Through Island Ramps](#)

[Unique Curb Ramps](#)

[End-of-Walk Curb Ramps](#)

[Universal Curb Ramp Form](#)

Attachment A - Curb Ramp Types with Design Slopes



COMBINATION RAMP

PERPENDICULAR RAMP

PARALLEL RAMP

- DESIGN SLOPES**
- Pedestrian access route (To measure clear width)
 - Detectable warning surface
 - Cross slope (design to 1.5% max. to achieve 2.0% finish grade)
 - Running slope (design to 7.5% max. to achieve 6.3% finish grade)
 - Counter slope (design to 4.0% max. to achieve 5.0% finish grade)
 - Landing area (X & Y) (design to 1.5% max. to achieve 2.0% finish grade / 5' x 5' nominal, 4' x 4' min.)* * If constrained at back of walk, min. Y length is 5'.
 - Gutter Flow Slope (as directed)