APWA OHIO CHAPTER - TRAFFIC ENGINEERING WORKSHOP, JUNE 7, 2023





Ohio Department of **Transportation**

AN OVERVIEW OF ODOT CURB RAMP DESIGN STANDARDS

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ADA CURB RAMP OVERVIEW

- The Americans with Disabilities Act (ADA) was signed into law on July 26, 1990. The ADA is one of America's most comprehensive pieces of civil rights legislation that prohibits discrimination and guarantees that people with disabilities have the same opportunities as everyone else to participate in the mainstream of American life -- to enjoy employment opportunities, to purchase goods and services, and to participate in State and local government programs and services.
- Ohio Revised Code 729.12 requires all new or reconstructed curb shall have curb ramps at each pedestrian crossing so the street and sidewalk blend to a common level.
- ODOT has identified the 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in Public Rights-of-Way (PROWAG) as the current governing design document for accessible features on transportation projects. With this identification, the requirements found within the 2011 PROWAG, except for R306.3.2 Pedestrian Activated Signals, are mandatory and must be complied with on ODOT-Let and Local-Let projects.



ODOT ADA WEBSITE

https://www.transportation.ohio.gov/wps/portal/gov/odot/working/engineering/roadway/ada

ODOT / Working / Engineering / Roadway Engineering / Americans with Disabilities Act (ADA) Design / ADA Design Resources



DESIGN

ADA Design Resources

February 04, 2020 | ODOT





CURB RAMP DEFINITION

 Per ODOT's recently published Multimodal Design Guide, Section 4.5.9 Curb Ramps and Detectable Warning Surfaces:

Curb ramps are an essential element for pedestrian accessibility that also serve to assist any person using a wheeled device (bicycle, stroller, dolly, etc.) to transition between the sidewalk and roadway. Where provided, all newly constructed or modified curb ramps must be ADA compliant to the <u>extent practicable</u> and should be designed to the least slope practical considering the curb height, available corner area, and underlying topography. ODOT's standards related to ADA dimensional criteria are based on PROWAG.





CURB RAMP MEASURING GUIDELINES





CURB RAMP EVALUATION AND MEASUREMENT FORM

ODOT Cu	rb Ramp Evaluati	ion and M	easuremen	t Form						1		c		**		
	Background	d Information								卒		-	U V	T		UU
C-R-S:	PID:									1			E			
Municipality:	Numbe	r of Approaches	:								4	^		-		V 10920
District:	Numbe	r of Curb Ramps									I	D	(0		V V Level n
County:	Traffic	Control Type:											-	_		1.56% max. ¬V
Major Road:	Date In	spected:										LK	P.H	G		
Minor Road:	Review	er Name:											4			Sidewalk V
Notes: 1. Take measurements for each	Curb Ramp Type (A through	n E) and measur	ements for (F) Co	mmon Curb	Ramp Elemer	nts.						1				View (102) Tour
2. All values should be collected	d and input out to two decim	al places ex. 8.2	5% or 4.00 ft.						SKETCH			CURS RAMP PO	OSITION ID DIAGRAM			olo Sidewalk
																- · · · · · · · · · · · · · · · · · · ·
				(A) Perpend	licular Ramps											(A3) 10.0%
Curb Ramp Position ID:																Street 10.0%
ADA Collector App ID:																4'-0" min
Waiver Required? (Y/N)																
(A1) Ramp	Values 0	Values	Values	opliant	Values	pliant)	Values	pliant)	Values	pliant)	Values	pliant)	Values	pliant)	ting eria	Height
	Com (Y/N		Com (Y/N	Com (Y/N		Com (Y/N		Com (Y/N		Com (Y/N		Com (Y/N		Com (Y/N	Tes	Type A1 (Perpendicular with flared eidec)
(A1.1) Running Slope (%)															8.33 Max.	Type AT (respendicular with hared sides)
(A1.2) Cross Slope (%)															2.00 Max.	
(A1.3) Width (ft.)															4.00 Min.	
(A2) Landing Area / Turning Space																
(A2.1) Running Slope (%)															2.00 Max.	
(A2.2) Cross Slope (%)															2.00 Max	



CURB RAMP MEASURING GUIDELINES





CURB RAMP COMPONENTS

Pictorial Illustrations of Curb Ramp Elements





CURB RAMP COMPONENTS - GENERAL DESIGN CRITERIA

- Landing; minimum 4' x 4' with maximum cross slope (both directions) of 1.56% (64:1)
- Ramp; minimum 4' wide with a maximum running slope of 7.69% (13:1) and cross slope of 1.56% at all types of crossings
- Flares; maximum 10% (10:1) slope measured parallel to the curb
- Detectable Warning; 2' x full width of the ramp (ODOT allows 2" of concrete on either side)
- Gutter or pavement slope; maximum 5% (20:1)
- Counter slope (ramp slope + gutter slope); maximum algebraic difference of 11%
- Any vertical lip must be less than or equal to 1/4"



CURB RAMP TYPES

- Order of preference of curb ramp types:
 - Perpendicular Curb Ramps (Type A1 and A2 on BP-7.1)
 - Combined Curb Ramps (Types C1 and C2)
 - Parallel Curb Ramps (Types B1, B2 and B3)
 - Diagonal Curb Ramps (Type D)



PERPENDICULAR CURB RAMP EXAMPLES PER MMDG

1 Z detectable warning curb surface street sidewalk flare crosswalk ramp landing flare triangular landing area Z° = ramp angle to crosswalk

Figure 4-12: Perpendicular Curb Ramp Types: Non-Directional (top) and Directional (lower)



PERPENDICULAR CURB RAMP EXAMPLES PER BP-7.1





PERPENDICULAR CURB RAMP RUNNING SLOPE MEASUREMENTS



(A1.1) Ramp Running Slopes



PERPENDICULAR CURB RAMP LANDING MEASUREMENTS

(A2.2) Ramp Landing/Turning Space Cross Slopes





COMBINATION CURB RAMP EXAMPLES PER BP-7.1



Type C1 (Combined with flared sides)

Type C2 (Combined with returned curb)



13:1 max.

64:1 max.

Sidewalk

6A:10t

COMBINED CURB RAMP DETAILS

COMBINATION CURB RAMP RUNNING SLOPE MEASUREMENTS

Combined Curb Ramps (B1.1) Ramp 1 Running Slopes







PARALLEL CURB RAMP EXAMPLE PER BP-7.1





PARALLEL CURB RAMP FIELD MEASUREMENTS

(C2.1) Ramp Running Slope (Single, Left)



(C2.1) Ramp Running Slope (Single, Left). Take a minimum of two measurements of the ramp running slope as shown in the two photos above. Take one measurement of the ramp running slope within 6 inches of each side of the ramp parallel to the ramp run (Locations 1 & 2). If the ramp does not appear planar or is wider than 5 feet, take additional parallel measurements where the ramp appears to be warped. Record the steepest running slope measured to the tenths place.

(C2.2) Ramp Cross Slopes (Single, Left)





DIAGONAL CURB RAMP EXAMPLE PER BP-7.1



Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'-0".

DIAGONAL RAMP (Type D)



BLENDED TRANSITION CURB RAMP EXAMPLE PER MMDG



Figure 4-16: Blended Transition Example



BLENDED TRANSITION CURB RAMP EXAMPLE PER BP-7.1



BLENDED TRANSITION CURB RAMP EXAMPLE

Blended Transition Ramp



Aerial view of blended transition



DETECTABLE WARNING PLACEMENT





DOME ALIGNMENT ON RADIUSED CURB





NON ADA COMPLIANT DETECTABLE WARNING PLACEMENT



25 | ADA CURB RAMP COMPLIANCE UPDATES



CURB RAMP COUNTER SLOPE

Figure 4-11: Counter Slope





HIGHLIGHTS FROM STANDARD DRAWING BP-7.1 DATED 1/20/23





CURB CUT EXAMPLE

Figure 4-17: Pedestrian Curb Cuts





CURB RAMP INFO IN PLANS

- How will curb ramps be shown in the construction plans?
 - Projects with survey will have curb ramp detail sheets with elevations, widths, and slopes labeled.
 - Resurfacing projects will have plan view 2-D detail sheets with widths labeled.





SAMPLE PLAN SP1311-15 DATED JUNE 2020





ADA CURB RAMP WAIVER DOCUMENT

- PROWAG recognizes that it is not always practicable to fully meet ADA dimensional requirements due to physical constraints, "Existing physical constraints include, but are not limited to, underlying terrain, right-of-way availability, underground structures, adjacent developed facilities, drainage, or presence of notable natural or historic features (R202.3.1)". In cases where it is not possible to meet ADA requirements, the pedestrian facilities shall be designed and constructed to meet ADA requirements to the maximum extent practicable.
- ODOT follows the guidance of PROWAG realizing there will still cases where meeting complete ADA compliance isn't feasible, and this has been recognized by the creation of an "ADA Curb Ramp Waiver".
- Most waivers approved by District 8 are found on retrofit type projects (resurfacing, Safe Routes To School) and involve existing facilities (catch basins, pull boxes, utility poles, etc.), tying into the adjacent existing roadway profile grade, or lack of sufficient R/W.



ADA CURB RAMP WAIVER DOCUMENT

:SSING E (MASH) N	ADA requirements are integrated into many of ODOT's design manuals, standard drawings and construction specifications.	ADA Lifecycle framons with marvel ADA Update What Changed in July Construction Administration Manual Proc CA-C-3 ADA Construction Inspection Chec Additional information on ODOT's ADA/50 Evaluation, Transition Plans, resources an training can be found on the Opportunity, & Inclusion ADA/504 website:
ESS	Instructions	ODOT ADA/504
	Training Videos 🗸	Interact with ADA ROW data via ODOT's TI
	Resources ~	ADA ROW in TIMS
NG	Curb Ramps	
	ODOT ADA-Compliant: Curb Ramp Measuring Guide ODOT guidance to ADA Rights of Way Collector Application users, designers, project engineers, contractors, and inspectors ODOT ADA Curb Ramp and Measuring Form Excel Spreadsheet Form for entering measurements Waiver Form Instructions Instructions to fill out the ADA Waiver Form Waiver Form (Word Version) Word version of the waiver form to be used as an aid in the field by Districts and Locals	Contact Regulations Questions Sarah Wade, Office of Civil Rights Compliat 614-466-3979 Design Questions Don Fisher, Office of Roadway Engineering 614-387-2614



ONLINE ADA CURB RAMP WAIVER PORTAL

Vhen existing physical conditions affect the feasibility of achievin lesign/project engineer should determine what degree of usability		
	g full conformance with accessib / can reasonably be achieved wit	ility criteria in an alteration, the hin the scope of the project.
eatures that might contribute to the feasibility of certain accessi	bility features include:	
 The existence of an underground structure, such as a utility Geometric design of existing roadways, bridges, or tunnels co Differences in finished grade at curbside and elevations at excompliance with cross slope provisions across the entire publ Existing fixed equipment, such as fire hydrants or street light power, signal and similar distribution systems. 	vault, manhole, or sewer inlet. onstrained by structural element: isting building entrances at the l ic sidewalk width. ting located on a public sidewalk	 sack-of-sidewalk that may preclude and connected to below-grade water,
/ariance Submitted By*		
irst Name	Last Name	
ubmitter Email*	Phone*	District*
District Design Engineer*		
Eric.Scheckelhoff@dot.ohio.gov		
) Imad.Bdeiri@dot.ohio.gov		
) kenneth.knapp@dot.ohio.gov		
) Laura.Beese@dot.ohio.gov		
Doug.Morgan@dot.ohio.gov		
) cindy.wengerter@dot.ohio.gov		
Dura Under akis anu		



ONLINE ADA CURB RAMP WAIVER PORTAL

PID	CRS	Unique ADA Ramp ID*	Ramp Type*			
Proposed Modification No Change to Existing Ramp New Construction 	Alteration of Existing Ramp	Project Development Pla	n (PDP) Phase			
ADA Ramp Conditions						
Ramp Slope % (Exist)	Ramp Slope % (Prop)	Cross Slope (Exist)	Cross Slope (Prop)			
Ramp Width (Exist)	Ramp Width (Prop)	Landing Length (Exist)	Landing Length (Prop)			
Landing Width (Exist)	Landing Width (Prop)	Landing Cross Slope (Exist)	Landing Cross Slope (Prop)			



ONLINE ADA CURB RAMP WAIVER PORTAL

Juanuaru e ru	Standerd H It.	Standard 2%	Standard 2%				
LT Flare Slope (Exist)	LT Flare Slope (Prop)	RT Flare Slope (Exist)	RT Flare Slope (Prop)				
Waiver Details							
Project Scope*		Support for Deviation *					
FILE ATTACHMENTS							
Attach Photo Choose File Remove File No File Attach Picture of Ramp	Chosen	Attach Location Map Choose File Remove File No File Attach Picture of Location Map	Chosen				
	Submi	it Form					



ADA CURB RAMP WAIVER INFORMATION SHOWN ON PLANS

39*12'03* SCALE I	LON IN MILES	IGITUDE:	-84*22	*727*
SCALE I	IN MILES	s		-
1				
	2	3	4	N
ROADS CLASSIFI RIAL RURB	ICATION: VANJ .NC	2		
	ROADS CLASSIFI VIAL AURB TIONS AIVERS	ROADS CLASSIFICATION: TIAL RIRBAND NO TIONS NOM AIVERS: REQ	ROADS CLASSIFICATION: TIAL. TURBANI NO TIONSNONE AIVERS: REQUIRED	ROADS CLASSIFICATION: TIAL TURBANI NO TIONSNONE AIVERS: REQUIRED

ADA WAI	VER						
AN APPR	AN APPROVED ADA DESIGN WAIVER IS REQUIRED ON THIS						
PROJECT	PROJECT. THE FOLLOWING FEATURES LISTED BELOW CANNOT						
FEASIBL	FEASIBLY BE CONSTRUCTED TO MEET ADA GUIDELINES.						
ADA FEATURE	ADA DESIGN V APPROVAL DATE	VAIVER SHEET NUMBERS					
RMP0006481	10/30/2020	L-2, 18					
RMP0006482	10/30/2020	NO PROPOSED WORK WITH PROJECT					
RMP0006483	10/30/2020	H-2, 15					
RMP0006484	10/30/2020	H-3, 15					
RMP0006485	10/30/2020	A-1, 11					



CURB RAMPS IN CONSTRUCTION

- Situations where a waiver was not obtained during design but must be obtained during construction.
- Stop points during the curb ramp construction process to prevent tearing out installed ramps by following form CA-C-3.



ADA CURB RAMP CONSTRUCTION CHECK POINTS

ODOT / Working / Engineering / Roadway Engineering / Americans with Disabilities Act (ADA) Design / ADA Design Resources



ADA Design Resources

 \bigcirc

Roadway Engineering

AMERICANS WITH DISABILITIES ACT (ADA) DESIGN

GEOMETRICS

MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)

MANUALS & DESIGN STANDARDS

STUDIES AND ACCESS MANAGEMENT

TRAFFIC ACADEMV



Instructions

A collection of resources that contain ADA requirements and guidance can be found below. Click on the pull

	LAUNCH 🔁 Return to Roadway Engineering							
1	Share this f y o							
	Related Resources ADA LifeCycle Handoffs with Waiver ADA Update What Changed in July Construction Administration Manual Procedures CA-C-3 ADA Construction Inspection Check Points							
•	Additional information on ODOT's ADA/504 Self- Evaluation, Transition Plans, resources and training can be found on the Opportunity, Diversity & Inclusion ADA/504 website:							



FORM CA-C-3 ADA CONSTRUCTION CHECK POINTS

CA-C-3 ADA Construction Check Points					
ContID:	AltID:				
PLN:	Co/Rt/Sec:				
Item No:	Project No. (Part Code):				
Item Desc:					
Location:					

YES	NO	REVIEW NOTES - REQUIRED
		inter into the integointed
-		



FORM CA-C-3 ADA CONSTRUCTION CHECK POINTS

2. Approval of layout – Review at completion of excavation and placement of base material	
 Review and measure slope values including longitudinal and transverse grades along the ramp and landing locations as well as curb grades (if proposed). 	
 Consult with District ADA Representative and Design Engineer to review changed conditions. 	
c. Record changed conditions and District ADA Representative concurrence, if any.	
d. Do not proceed with concrete placement until all proposed deviations/changes from plan are approved.	



AN OVERVIEW OF ODOT CURB RAMP DESIGN STANDARDS

THANKS FOR YOUR TIME! ANY QUESTIONS?





