CRITICAL ELEMENTS FOR THE DESIGN, LAYOUT AND ACCEPTANCE OF PEDESTRIAN FACILITIES

U.S. Customary Version - NYSDOT - Revised 10/14/2015

Prepared By:		PIN/D Contract:		Date:		Location:	

Existing Ramps to Remain on 1R Projects Subject to 1991 ADAAG	1991 ADAAG Reference	1991 ADA Limits	Acceptable Values for Existing Facilities per HDM Ch. 7	Inspection Methods[2]	In Compliance with Acceptable values?	Add to Transition Plan?	Justified Per R202.3.1?[1] and HDM 2.8	GPS Northing	GPS Easting or Westing
A Curb Ramp									
Width/Clear Width	4.3.3	36" min	35.25" min	D					
Flare Slope for Ramps in Walkable Area	4.7.5	10% max	10.5% max	B					
No Flares if ramp is in a non-walkable area (grass, planters, utility pole, etc.)	4.7.5	Curbs or nothing	Curbs or nothing						
Running Slope	4.8.2	5%-8.33%	4.5%-8.83%	A					
Running Slope if space is limited	4.1.6	10% for 6" rise	10.5% for 6.5" rise	A					
Clear Space for Diagonal Ramps	4.7.10	48" x 48" min	47.25" x 47.25" min	D & E					
Joint Spacing With Sidewalk and street	4.5.2	0.5" max	0.5" max	E					
Vertical Changes	4.5.2	0.5" max with 1:2 bevel if 0.25" to 0.5" high	0.5" max with 1:2 bevel if 0.25" to 0.5" high	F					

New and Replacement Facilities subject to PROWAG 2011 and Building Code of New York State	Reference	Design and Layout Limits	ADA Limits for Work Acceptance	Inspection Methods[2]	In Compliance with ADA Limits?	Add to Transition Plan?	Justified Per R202.3.1?[1] and HDM 2.8	GPS Northing	GPS Easting or Westing
A Curb Ramp / Blended Transition									
Sidewalk Width for Perpendicular Type	R304.1	144" min	144" min	D					
Sidewalk Width for Parallel Type	R304.1	48" min	48" min	D					
Sidewalk Width for Combination Type	R304.1	72" min	72" min	D					
Width	R304.5.1	48" min	48" min	D					
Flared Side Slopes w/in Pedestrian Walkway	R304.2.3	9.5% max	10% max	B					
Flared Side Slopes Outside Pedestrian Walkway	R304.2.3	May be curbed, No Max Slope	May be curbed, No Max Slope	B					
Running Slope (Grade) for Curb Ramp	R304.3.2	7.5%	5.0% - 8.3%	A					
Minimum Length of Ramp that Can Exceed 8.3%	R304.2.2, R304.3.2	15' - 1" min	15' min	E					
Cross Slope at Intersections with Yield or Stop Control	R304.5.3	1.5% max	2% max	B					
Cross Slope at Intersections without Yield or Stop Control	R304.5.3	Match Highway Grade	Match Highway Grade	B					
Max Grade for Blended Transitions	R304.1, R304.4.1	4.5% max	5% max	A					
Top Turning Space with no restrictions at back of top of turning space	R304.2.1, R304.3.1	48" x 48" min	48" x 48" min	D & E					
Top Turning Space with restrictions at back of top of turning space	R304.2.1, R304.3.1	48" x 60" min	48" x 60" min	D & E					
Slope at Top Turning Space in any direction	R304.2.2, R304.3.2	1.5% max	2% max	C					
Counter Slope at Bottom of Ramp	R304.5.4	4.5% max	5% max	A					
Clear Space at bottom landing width outside parallel vehicle path (can include curb)	R304.5.5	48" x 48" min	48" x 48" min	D & E					
Grade Breaks (no rounding)	R304.5.2	Perpendicular to Direction of Travel	Perpendicular to Direction of Travel						
B Tactile Warning Device									
Covered by Specs: Dome Dimensions and Spacing	R305.1.1 and R305.1.2	On DOT Approved List	On DOT Approved List						
Covered by Specs: Contrast of Warning Device	R305.1.3	Light on Dark or Dark on Light	Light on Dark or Dark on Light						
Alignment With Ramp Grade Break	R304.5.2	Perpendicular to Direction of Travel	Perpendicular to Direction of Travel						
Width	R305.2	Full Width of Ramp	Full Width of Ramp (2" border allowed)	D					
Length	R305.1.4	24" min	24" min in direction of pedestrian travel	E					
Location	R305.2.1	at grade break if <60" from curb, otherwise at back of curb	at grade break if <60" from curb, otherwise at back of curb	E					
Where not required	R208.2	Refuge islands <72" long	Refuge islands <72" long	E					
C Sidewalk									
Clear Width (excluding curb)	R302.3	48" min	48" min	D					
Running Slope/Grade where Hwy Grade is 5% or less	R302.5	4.5% max	5% max	A					
Running Slope/Grade where Hwy Grade is 5% or More	R302.5	Hwy Edge of Pvmt Grade is Max	Hwy Edge of Pvmt Grade is Max	A					
Cross Slope	R302.6	1.5% max	2% max	B					
Passing Area Spacing (if sidewalk less than 60" Wide)	R302.4	200' max	200' max	E					
Passing Area	R302.4	60" x 60" min	60" x 60" min	D & E					
Turning Area for changes in direction	R302.3	60" x 60" min	60" x 60" min	D & E					
D Surfaces									
Material	R302.7	HMA or PCC	Firm, Stable and Slip Resistant						
Horizontal Openings in Gratings and Joints	R302.7.3	0.5" max	0.5" max	E					
Vertical discontinuities	R302.7.2	0.5" max	0.5" max	F					
Beveled (1:2 min) vertical discontinuities	R302.7.2	0.25" - 0.5"	0.25" - 0.5" and with a slope not steeper than 50%	F					
E Crosswalk (Pedestrian Street Crossings)									
Width	R302.3	72" min	48" min	D					
Cross Slope with Yield or Stop Control	R302.6.1	1.5% max	2% max	B					
Cross Slope without Yield or Stop Control	R302.6.1	4.5% max	5% max	B					
Cross Slope Midblock	R302.6.2	Hwy Grade is Max	Hwy Grade is Max						
Grade (highway cross slope)	R302.5.1	4.5% max	5% max	A					
Markings	National MUTCD 3B.18	L, LS or S Type	L, S, LS and Diagonal						
Pedestrian Refuge Island Width in Direction of Ped Travel	R302.3.1	60" min	60" min	D					
F Ramps									
Min Clear Width Between Railings	R407.4	36" min	36" min	D					
Cross Slope	R407.3	1.5% max	2% max	B					
Running Slope / Grade	R407.2	7.50%	5% - 8.3%	A					
Vertical rise between landings	R407.5	30" max	30" max	F					
G Landings									
Width	R407.6.4	60" min	60" min	D					
Length	R407.6.4	60" min	60" min	E					
Slope in any direction	R407.6.1	1.5% max	2% max	C					
H Railings									
Both Sides of Ramps With a Rise Over 6" and Stairs	R409.1	Yes	Yes						
Height	R409.4 & BCNYS 1013.2	34" - 38"	34" - 38"	F					
Guards for Rail Height for vertical drops >30"	BCNYS 1013.1 & 1013.2	42" min	42" min	F					
Max Spacing (Opening Limitations)	BCNYS 1013.3	4" up to 34", then 8" up to 42"	4" up to 36", then 4-3/8" up to 42"	Can not pass a sphere of given diameter					
Clear Space to Wall	R409.5	1.5" Min	1.5" Min	D					
Circular Diameter	R409.7.1	1.25" - 2"	1.25" - 2"	G					
Non Circular Perimeter	R409.7.2	4"-6.25"	4"-6.25"	G					
Non Circular Diameter	R409.7.2	2.25" max	2.25" max	G					
Returns to Walls	R409.10.2 & R409.10.3	Yes	Yes						
Top extensions on end or on all ramps with railings	R409.10.2	12" min	12" min	E					
Bottom extensions on end with stairs	R409.10.3	Tread Width	Tread Depth	D					

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I	**Stairs**									
	Riser Height	R408.2	4" - 7"	4" - 7"	F					
	Clear width of stairs	BCNYS 1009.1	48" min	44" min	D					
	Depth of Tread	R408.2	11"	10.75" - 11.25"	E					
	Tread Surface	R408.4	Level to 1.5%	Level to 2%	C					
	Nose of Tread	R408.5	0.5" Radius, Extend 1.5" max Over Tread	0.5" max Radius, Extend 1.5" max Over Tread	E					
	Spacing	R408.2	Uniform	Uniform	F					
	Closed riser	R408.3	Yes	Yes						
	Maximum rise between landings	BCNYS 1009.7	144" max	144" max	F					
J	**Stair Landings**									
	Width	BCNYS 1009.5	Match stairs	Match stairs	D					
	Length	BCNYS 1009.5	As long as stair is wide up to 48"	As long as stair is wide up to 48"	E					
	Slope in any direction	BCNYS 1009.6.1	1.5% max	2% max	C					
K	**Drainage**									
	Ponding water	BCNYS 1009.6.2	Does not pond water	Does not pond water						
	Grate Openings	R302.7.3	0.5" max in direction of travel	0.5" max in direction of travel	E					
L	**Pedestrian Signals**									
	Push Button Height	R406.2	36" - 42"	15" - 48"	F					
	Push Button Distance from Pedestrian Access Route	R406.3	9" max	10" max	D					
	Clear Spaces Adjacent to Button	R302.7, R404.3	30" x 48"	30" x 48"	D					
	Clearance Timing	R306.2	3.5 ft/s walk speed	3.5 ft/s max walk speed						
M	**Handicapped Parking**									
	Minimum Sidewalk Width Without Access Aisle where ROW is > 14'	R309.2.1	60" min for length of space	60" min for length of space	D					
	Minimum Sidewalk Width Without Access Aisle where ROW is <= 14'	R309.2.2	72" min sidewalk for length of space	96" min sidewalk for length of space	D					
	Access Aisle for Angled Parking	R309.2.3	96" min for length of space	96" min for length of space	D					
	Width	R309.3	96" min	96" min	D					
	Cross Slope	R404.2	1.5% max	2% max	B					
	Grade	R404.2	Match Adjacent Ped Access Route	Match Adjacent Ped Access Route	A					
	Markings and Signs	R211.3, R410, R411	include	include						
	Number of Spaces	R214	1 for every 25 up to 100, 1 for each additional 50 over 100, 4% if over 201	1 for every 25 up to 100, 1 for each additional 50 over 100, 4% if over 201						
N	**Bus Stops**									
	Loading Area Size	R308.1.1.1	60" x 96"	60" x 96"	E					
	Slope Perpendicular to Highway	R308.1.1.2	1.5% max	2% max	A					
O	**Rail Road Crossings**									
	Freight Line Track Gaps	R302.7.4	3" max	3" max	E					
	Passenger Line Track Gaps	R302.7.4	2.5" max	2.5" max	E					
	Detectable Warnings	R305.2.5	6' - 15' from rail	6' - 15' from rail	E					
	Cross Slope	R302.6	1.5% max	2% max	B					

NOTES:

1 Justifications for non Compliance Per R202.3.1:

- **A** Underlying terrain
- **B** Right-of-way availability
- **C** Underground structures
- **D** Adjacent developed facilities
- **E** Drainage
- **F** Presence of a notable natural feature
- **G** Presence of a notable historic feature
- **H** Other

2 Inspection Methods and Acceptance Criteria

A Grades (Running Slope)
Average of at least 2 digital level measurements using a 4 foot straight edge, along the centerline (direction of travel) and offset 12" to 18" to either side of the centerline of the ramp, roadway, curb ramp, etc. Acceptance based on grades less than or equal to the ADA limit.

B Cross Slope
Average of at least 2 digital level measurements using a 4 foot straight edge, perpendicular to the centerline (direction of travel) of the sidewalk, taken (when length allows) at 5' to 10' intervals. For flares, use an average of at least 2 digital level measurements taken within a foot of curb perpendicular to ramp grade. Acceptance based on slopes less than or equal to the ADA limit.

C Area Slopes
Take Grade and Cross Slope measurements (as stated above). Acceptance based on slopes less than or equal to the ADA limit.

D Widths and Offsets
Average of at least 2 measuring tape measurements taken perpendicular to the centerline (direction of travel) of the sidewalk at either the restriction/point or (when length allows) 10' intervals. Acceptance based on widths greater to or equal to the ADA limit.

E Lengths
Average of at least 2 measuring tape, wheel, or reel measurements taken within a foot of the centerline (direction of travel) or railing, ramp, sidewalk, etc., with the measurement along the grade of the railing, sidewalk, ramp, curb ramp, etc. (i.e., not a horizontal measurement for sloped surfaces). Acceptance based on lengths greater to or equal to the ADA limit and passing area separation less than or equal to the ADA limit.

F Rise or Vertical Distance
Average of at least 2 measurements vertically. For landings or step risers, take at least a foot apart. For landings, average of at least 2 measurements using a survey rod and level at the nose/edge of the landing and base of ramp or stairs.

G Diameter, Perimeter, and all others
As directed by item specification.

3 References

- **A** NYSDOT Highway Design Manual (HDM) Chapters 7 and 18
- **B** US Access Board's Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right of Way, 2011, a.k.a Public Right of Way Accessability Guidelines (PROWAG).
- **C** ADA Accessibility Guidelines (ADAAG) for Buildings and Facilities in 28 CFR, 1991
- **D** New York State Building Code for Commercial Buildings
- **E** United States Access Board
- **F** National Manual of Uniform Traffic Control Devices (MUTCD)

4 Contact for questions

- **A** Design Services Bureau, NYSDOT, 50 Wolf Rd, Albany, NY 12232