Meeting the Needs of All Users

Accessibility Issues at Grade Crossings
According to MUTCD, a Grade Crossing includes the sidewalks for pedestrian access.
Pedestrian access at grade crossings presents the designer with a number of challenges
Very few standards exist regarding design of pedestrian facilities at grade crossings.
The 2009 Edition of MUTCD includes a new Section dealing with Pathway-Rail Grade Crossings.
Pathway-Rail Grade Crossings include trails and station crossings for pedestrians, equestrians, bicycles and certain motorized vehicles.
Language is presently under development for the next edition of MUTCD to provide specific standards for sidewalks.
Specific areas to be addressed which focus on access over the grade crossing include the following:
Continuation of the Sidewalk over the Tracks

In many cases, the sidewalk does not extend through the grade crossing and pedestrians are forced to use the roadway.
Provisions for a sidewalk at a Grade Crossing
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Acceptable Surface

When the sidewalk does extend through the grade crossing separately from the road way, what type of surface exists?
Smooth? Grade? Marked? Stopping point defined? Detectable Warnings?
Smooth?
Grade?
Marked?
Stopping point defined?
Detectable Warnings?
In many cases, the surface is impassable for access other than persons afoot.
Smooth?
Grade?
Marked?
Stopping point defined?
Detectable Warnings?
Smooth?
Grade?
Marked?
Stopping point defined?
Detectable Warnings?
Smooth?  
Grade?  
Marked?  
Stopping point defined?  
Detectable Warnings?
Smooth? 
Grade? 
Marked? 
Stopping point defined? 
Detectable Warnings?
Smooth?
Grade?
Marked?
Stopping point defined?
Detectable Warnings?
Approach Grade

If the sidewalk does exist, is it possible to access the crossing surface?

Level area to wait for passage of the train?
Smooth?
Grade?
Marked?
Stopping point defined?
Detectable Warnings?
Potential Obstructions
If the sidewalk does exist, is it free from obstructions that could be hazardous or impassable to a person in a wheelchair or other mobility assisted device?
Warning device location obstructs some or all of travel path

Gate counter weights?
Warning device location obstructs some or all of travel path

Gate counter weights?
Warning device location obstructs some or all of travel path.

Gate counter weights?
Exit path blocked by warning device and curbing
Steps beyond crossing?
The Flangeway Gap is the open area adjacent to the head of the rail to permit the wheel flanges to pass.
The Flangeway Gap is a minimum of 3 inches for heavy rail (freight - passenger - commuter) grade crossings.
The Flangeway Gap is a minimum of 2 ½ inches for light rail transit grade crossings.
Flangeway Gap fillers are limited to the depth of the wheel flange
To date, no successful full-depth flangeway gap filler has been developed, although a number have been tested.
Rear wheels are much more tolerable of flangeway gaps.
Small front casters present the greatest challenges.
Less than 90 degree crossing angles increase the potential to trap front casters.
Timber crossing surface

Field side gap

No flangeway gap filler
Timber crossing surface
No field side gap
No flangeway gap filler
Rubber crossing surface

No field side gap

Has flangeway gap filler
Timber crossing surface

No field side gap

Has flangeway gap filler
Concrete crossing surface
No field side gap
Has flangeway gap filler
Other Considerations for Pedestrians
Detectable warnings: Inside exit gate? Too close to track?
Pedestrian Maze
Wheelchair accessible?

No detectable warnings

Crossing surface?
Track in Roadway
Wheelchair accessible?
Stuck in roadway?
Crossing surface?
Good practice
Wheelchair accessible
Detectable warning
Crossing surface level and smooth
Discussion