

Accessible/Detectable Temporary Path

Considerations in Creating an Accessible Alternate Pathway

- General environment—are there ped generators in close proximity to the TCZ?
 - schools
 - shopping areas
 - community/senior centers
 - transit facilities

Considerations in Creating an Accessible Alternate Pathway (2)

- Traffic characteristics
 - speed
 - volume
 - significant presence of commercial vehicles

Where Few or No Pedestrians

- Alternative ped pathway must have same level of accessibility as one it is replacing
- Should be no curbs or abrupt changes in grade or terrain that could cause tripping or be a barrier to wheelchair use

No Sidewalk?

- If no sidewalk, no wide shoulder where peds walk, or no evidence of ped activity (e.g., worn earth path or visual observation of people walking), the project may not require an accessible alternative ped route.
- But be sure to document reasons why.

MUTCD Section 6N.04

- Pedestrian detours should be avoided since peds rarely observe them and the cost of providing accessibility and detectability might outweigh the cost of maintaining a continuous route. Whenever possible, work should be done in a manner that does not create a need to detour pedestrians from existing routes or crossings.

Note!

- Depending on traffic characteristics and surrounding environment, a route that uses a vehicle lane width for the ped pathway may be shorter, safer and more usable than one that requires two street crossings.

Remember!

- Peds are not likely to back-track
- Peds need early warning of what they are approaching--they are more inclined to go into street to avoid a short closure rather than retrace their steps back to a designated crosswalk.



Access to Business and Transit

- In addition to ped path in general, access to business entrances and transit stops will need to be maintained
- May require construction of temporary ramps and guiderails from ped pathway to building entrances
- If transit stop will be affected by TTC, consult transit agency to see if temporary stop needed

MUTCD Section 6F.02

- “Neither portable nor permanent sign supports should be located on sidewalks, bicycle facilities, or areas designated for pedestrians or bicyclists.”



Components of an Accessible/Detectable Temporary Path

- Detectable Edging
- Channelizing Devices
- Pathway Width and Surface
- Temporary Ramps
- Sidewalk Closures
- Audible Devices

Note—MUTCD Section 6C.02

- Guidance states that tape, rope or plastic chain strung between devices should not be used to control ped movements because they are not detectable and are therefore not accessible to and usable by individuals with disabilities.



R303--Alternate Pedestrian Access Routes

- Detectable Edging of Channelizing Devices
 - where a channelizing device is used to delineate an alternate ped access route, continuous detectable edging complying with R303.6 shall be provided throughout the length of the route.

R303--Alternate Pedestrian Access Routes (2)

- R303.6.1 -- The top of the top detectable edging shall be no lower than 32 inches above the walking surface and be free of sharp or abrasive surfaces.
- R303.6.2 – The bottom of the bottom detectable edging shall be 2 inches maximum above the walking surface.

Detectable Edging for Pedestrians (MUTCD 6M.04)

- Should be provided throughout the length of the facility.
- Should extend at least 8 inches above surface of pathway with bottom of the edging a maximum of 2 inches above the surface.
- Should be firmly attached to the ground or to other devices. Adjacent sections should be interconnected.

Detectable Edging for Pedestrians (2)

- Should be orange, white or yellow and should match the color of the adjacent channelizing devices or traffic control devices, if any are present.

Examples of Detectable Edging

- Pre-fabricated lightweight sections of plastic, metal or other suitable materials that are interconnected and fixed in place to form a continuous edge
- Sections of lumber interconnected and fixed in place to form continuous edge
- Formed-in-place asphalt or concrete curb
- Continuous temp. traffic barrier or channelizing barricades fixed to form continuous edge
- Chain-link or other fencing equipped with a continuous bottom rail

What Do You Think?



Ped Channelizing Devices

- Ped channelizing devices indicate a suitable path of ped travel around or through the work zone.



MUTCD—Section 6K.02

- Devices used to channelize peds shall be detectable to users of long canes and visible to persons with low vision.
- When used as a sidewalk closure, the device shall cover the entire width of the sidewalk.

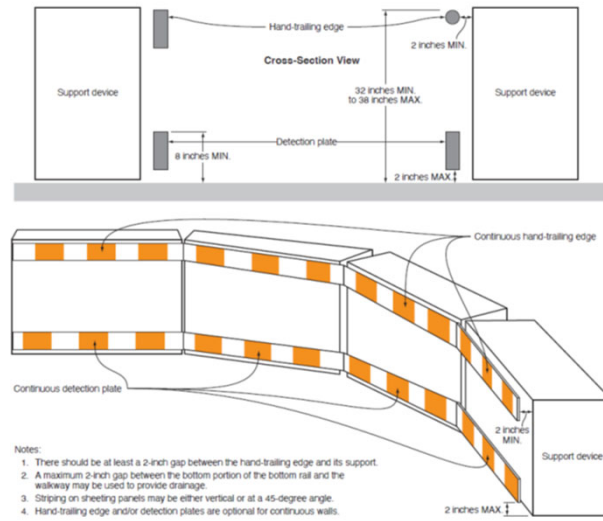
MUTCD—Section 6K.02 (cont'd)

- Channelizing devices shall have continuous detection plates and hand-trailing edges.
- The bottom of the detection plate shall be no higher than 2 inches above the walkway. The top edge of the detection plate shall be at least 8 inches above the walkway.
- The top of the hand-trailing edge shall be no lower than 32 inches and no higher than 38 inches above the walkway.

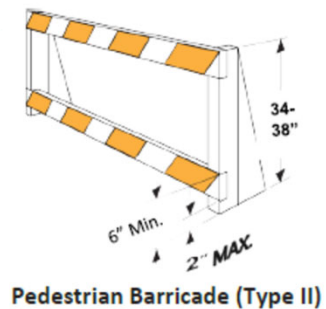
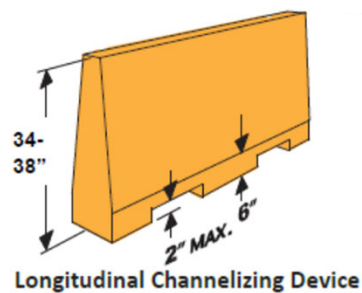
MUTCD—Section 6K.02 (cont'd)

- The top surface of the hand-trailing edge shall be smooth.
- Both the detection plate and the hand-trailing edge shall share a common vertical plane.

Figure 6K-2. Ped Channelizing Device



Compliant Channelizing Devices



Compliant?



Better?



Channelizing Device Requirements

- Cane Ready—continuous smooth lower rail
- Hand Trailing—continuous, smooth upper rail
- Obstacle-Free—common plane, no intrusions into pathway
- Continuous Guidance—smooth connection points, no gaps

Hand-Trailing, Continuous Guidance



Longitudinal Channelizing Devices

- Have not met the crashworthy requirements for temporary traffic barriers
- Should not be used to shield obstacles or provide positive protection for pedestrians or workers



Temporary Traffic Barriers (TTB)

- Devices designed to help prevent penetration by vehicles while minimizing injuries to vehicle occupants and designed to protect workers, pedestrians and bicyclists.
- All temporary traffic barriers shall be crashworthy.



Temporary Traffic Barriers (2)

- TTB's need to be supplemented with standard delineation, pavement markings or channelizing devices for improved visibility if they are used to channelize vehicular traffic

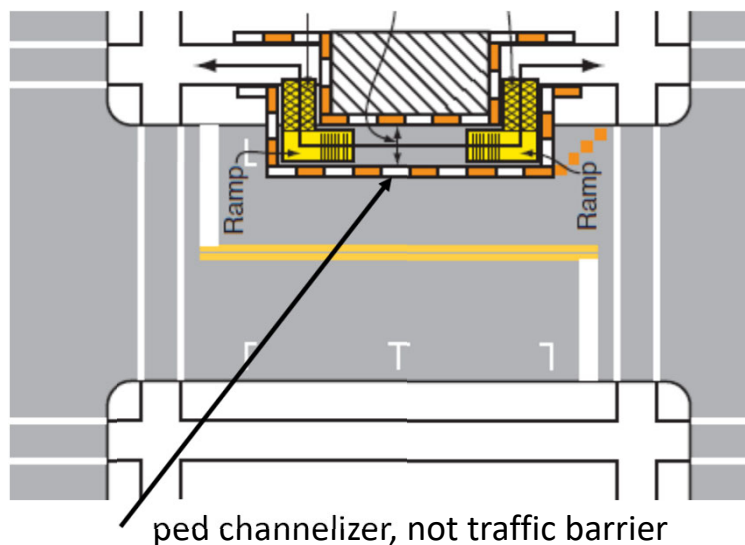
What Do You Think?



Note!!

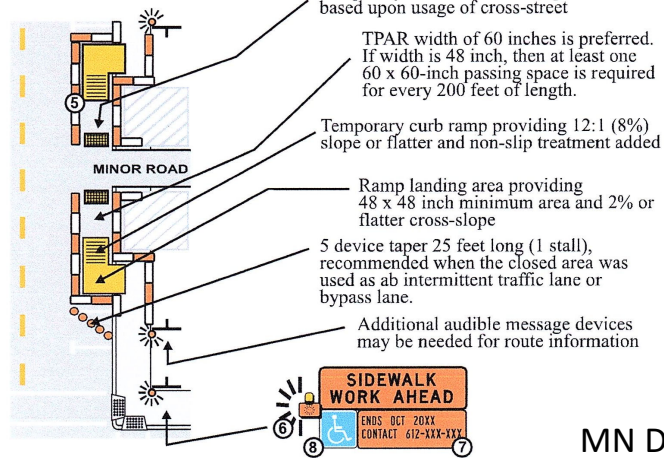
- Without external steel rails or internal steel framework, water-filled longitudinal channelizers do not have the capability to redirect vehicles so may not be substituted whenever a barrier is specified.
- Another consideration with use of water-filled barriers is their deflection characteristics. Precast concrete barriers generally have lower deflection and can be pinned in place

MUTCD TA-28



Use of Channelizers in Roadway

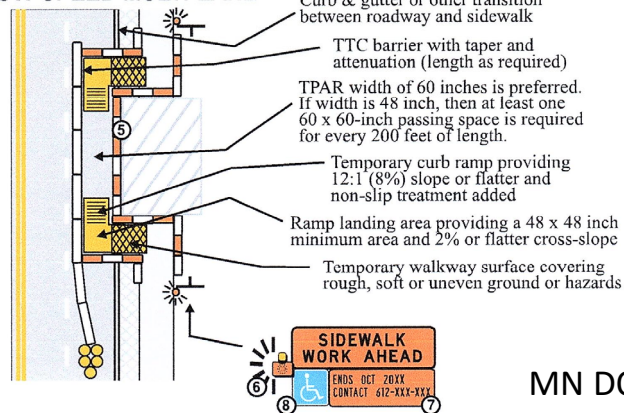
LOW-SPEED ROADWAY



MN DOT

Use of TTB in Roadway

HIGH-SPEED ROADWAY or LOW-SPEED MULTI-LANE



MN DOT

PROWAG: Pathway Width

- Minimum continuous clear width of 48 inches, free of obstructions, must be maintained (60 inches recommended)
- Where clear width is less than 60 inches, passing spaces (5 ft by 5 ft) must be provided at intervals of a maximum of 200 feet

R303.3--Alternate Pedestrian Access Routes

- Alternate PAR **surfaces** shall comply with 302.6 or shall not be less accessible than the surface of the temporarily closed pedestrian circulation path.

Surfaces

- Ensure the walkway surface is smooth, solid and non-slip
- Path should be able to support a wheelchair under all conditions
- Path should drain well and be checked for standing water after rain



Surfaces (2)

- Joints should be closed and flush to prevent tripping and to reduce chance of canes or small wheels getting trapped in gaps or spaces
- If grates located within ped route, orient them perpendicular to pathway; openings must be narrow enough to comply with PROWAG
- Paths should be clear of debris and adequately drained to prevent accumulation of trash/mud that can cause trip or slip hazard

What Do You Think?



What Do You Think?



Accessible?



What Can Be Done?

Or Maybe More Common—Gas Line Repair



Potential Solutions

- Roll it every day?
- Mix additives/stabilizers with the material?
- Cold-patch type asphalt?
- Others?

Conveyor Belt?

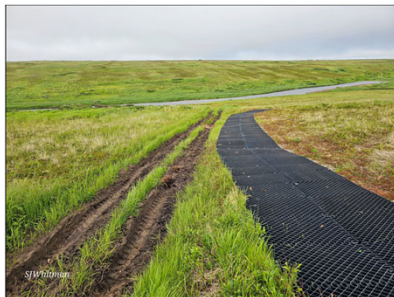


North Dakota DOT

Roll-Up Mats?



Open Cell Material?



Temporary Curb Ramps

- Should be full width of temporary route; 60-inch recommended and minimum width of 48 inches
- Ramps should lie in single sloped plane with a minimum of surface warping
- *Handrails on curb ramps not required unless ramp has rise exceeding 6 inches and length exceeding 72 inches*

Temporary Curb Ramps (2)

- Ramps should be firm and stable with slip-resistant surface
- Should not warp or buckle and be strong enough to support weight of peds as well as motorized scooters and wheelchairs
- Should be color contrasting and contain marked edge so they are noticeable by peds who have visual impairments

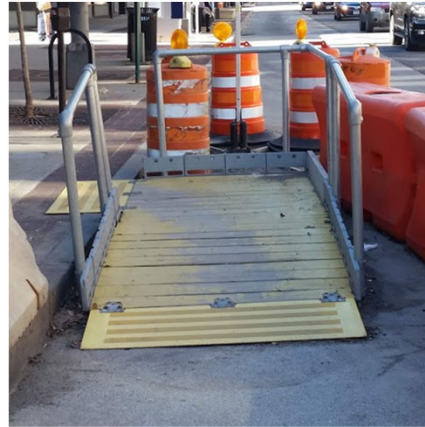
Temporary Curb Ramp Transitions

- Should be flush and free of abrupt changes
- Changes in level between $\frac{1}{4}$ and $\frac{1}{2}$ inch need to beveled with slope no greater than 1:2
- Maximum slopes of adjoining gutters, road surface immediately adjacent to curb ramp or the accessible route may not exceed 1:20
- Need minimum 4 ft x 4 ft turning space at top ramp

Examples of Poor Temporary Ramps



Modular Temporary Pedestrian Ramp



What Do You Think?



Built-Out Ramp



What Do You Think?



Covered Pathways

- Where work activities take place above a ped walkway for extended period, “a canopied walkway may be used” to protect from falling debris (Section 6C.02).
- Short-term closures of walkways and provision of alternate routes should be provided any time construction materials or operations occur over a ped walkway

Overhead and Protrusion Protection

- If accessible route uses canopied walkway, MUTCD states such a walkway should have minimum of 7 ft (84 inches) of headroom. PROWAG calls for 80 inches.
- Objects with leading edges more than 27 inches and not more than 80 above the walk are not permitted to protrude more than 4 inches into ped pathway.

Examples of Overhead Protection



Handrails and Guiderails

- Handrails required to assist ambulatory disabled pedestrians navigate steep grades along walkways. They are used to maintain balance, transfer weight and prevent falls.
- Guiderails are NOT intended to provide the required support as specified for handrails. Rather, they provide visual and tactile guidance to all pedestrians along a designated route

Handrail Requirements

- Be sure handrails have a width between 1.25 and 1.5 in. and contain graspable x-section.
- Edges must have minimum radius of 1/8 inch
- Handrails are prohibited from being able to rotate within their fittings
- On switchback or dogleg ramps, the inside handrail must be continuous
- ADAAG has structural strength requirements

Guiderails

- Important for users to distinguish between guiderail and handrail so are aware the guiderail is not weight-bearing device.
- Can be accomplished by allowing guiderail to be semi-flexible, have a non-rigid mounting or be an “ungraspable” shape.
- Use of guiderails should be limited to ped routes that call for special guidance through turns, curves or crowd directional control.

Sidewalk Closures

- Where pedestrians with visual disabilities normally use a closed sidewalk, a barrier that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed pedestrian facility (MUTCD Section 6C.03).

Detectable Walkway Closure?



Sidewalk Closed Sign and Channelizing Devices

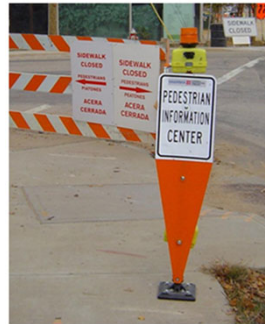


Communication Devices

- MUTCD notes most desirable way to provide guidance through TTC for people with visual disabilities is “a speech message provided by an audible information device.”
- “Audible information devices might not be needed if detectable channelizing devices make an alternate route of travel evident to pedestrians with vision disabilities.”

Communication Devices (2)

- Best devices are those that provide “speech messages in response to passive pedestrian actuation,” although devices that continuously emit a message or emit a message in response to use of pushbutton (need locator tone) are also acceptable.



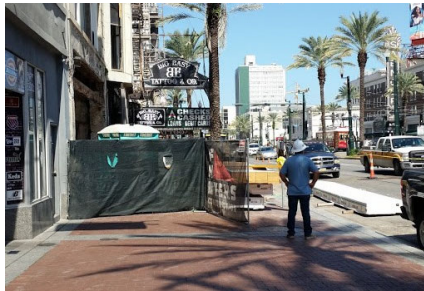
Audible Messages

- Audible messages provided should clearly state instructions on accessing the detour route, e.g.

ATTENTION PEDESTRIANS, SIDEWALK CLOSED
ONE BLOCK AHEAD. CROSS HERE TO USE OTHER
SIDE OF STREET.

Guides

- A guide can be provided in advance of TTC area to assist any disabled persons in navigating the accessible pathway.
- May be appropriate in areas with higher concentrations of individuals with disabilities.



Communicate with the Public

- Community announcements
 - Residents, businesses, schools
- Project web sites
 - Particularly useful with major projects, heavily used facilities

Best Practices & Other Considerations

- Determine level of accessibility needed for peds in TTC zone by observing existing ped travel patterns and make accommodations prior to the start of work.
- Solicit input from local pedestrians, including people with disabilities, on types of devices, how they will be placed and used and lengths/times of any closures

Best Practices & Other Considerations (2)

- At very least, put yourself in the pedestrian's shoes (get a cane and wheelchair)
 - is the route confusing?
 - can the detour be clearly communicated?
 - is the detour accessible?
 - does the detour require crossing heavy traffic?

Best Practices & Other Considerations (3)

- Prioritize routing *through* if safe to do so, narrowing the route or placing it in the street
- If cannot maintain safe and accessible route through or around construction, then other options should be explored, e.g. shuttle service

Best Practices & Other Considerations (4)

- Phasing of Construction

-- Build new (or repair existing) sidewalk early in multi-phase projects



Best Practices & Other Considerations (5)

- Phasing of Construction

-- work on only one side
of street at a time



Best Practices & Other Considerations (6)

- No vehicles, equipment or materials should block sidewalks, ped ramps or other pedestrian infrastructure without approval of the agency



Best Practices & Other Considerations (7)

- Channelization and barricades shall not impede sight distance at corners or block access to any push button, signal or ADA infrastructure.



What Do You Think?



Note: No sidewalk on opposite side of street.

Crosswalks Provide Access to Curb Ramps,
So They Must Be Kept Clear or Barricaded
(need education, awareness, enforcement)



Agency Best Practices

- Practice constant enforcement of these policies
- Document! Document! Document!

- Revise current agency policies to include accessible and detectable alternate pedestrian pathways
- Make temporary ped accommodations a separate pay item in contracts. Helps legitimize it for contractors so they know they will actually get paid for it and it is not just extra work that isn't necessary.

Questions?

Let's Assess Some TTC Installations/Situations

What Do You Think?

Example from FHWA Spot Checks (1)



Example from FHWA Spot Checks (2)



What Do You Think?



Tort Claim—Unsafe Placement of Barricade

- Trip/fall incident in crosswalk on rainy night.
- Woman walking at night, with a colleague, in direction shown, tripped on angle-iron feet of Type 3 barricade sustaining severe and permanent arm injury.
- Filed tort claims against municipality, general contractor and traffic control device subcontractor alleging negligent placement of the Type 3 barricades which created a hazard for pedestrians.

Tort Claim (2)

- Defendants argued that more than 3 feet of width was available to pedestrians so walkway complied with ADA criteria.
- Also argued that if a walkway is accessible (complies with ADA criteria), it is also safe.
- Confidential out-of-court settlement reached just before trial.

Possible Solutions

- Move barricades back, so out of crosswalk
- Use different type of support, maybe . . .



Sidewalk Slab Replacement-- How Does Your Agency Handle This?



Furniture Moving Example

- Midwestern city of 100,000 population
- State office building getting new desks, bookcases and other furniture
- Old furniture to be moved out (morning) and new furniture to be moved in (afternoon)
- Wheeled dollies will be used for the moves
- Five-person crew assigned to this job

More Facts

- A metered parking space in front of the building has been blocked off for use by the truck delivering/removing furniture
- Photograph shown was taken around 12:15 pm when crew was on lunch break.

Questions

- Is this the best way to handle this activity?
- How might you approach it?

Furniture Moving Example



Residential Sidewalk Example

- Residential area/greenway in small city
- Sidewalk carries 10 to 12 peds per hour during weekday daylight hours
- Roadway carries about 2,800 vehicles/day
- Posted speed limit 25 mph
- Note speed hump near work area

Questions

- Is the sidewalk shown, an accessible sidewalk?
- How do we handle such situations—
immediate versus longer term?

Looking East



Approaching the Work Area



Close-Up of Work Area



Close-Up View Looking West







Thank You!

Questions?

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