

Accommodating Pedestrians in the Work Zone

Guidance for Section C Plan Preparers

Some impacts cannot be avoided and those impacts apply to residents, businesses, motorists, and pedestrians alike. However, good planning can minimize their duration and extent.

This document is intended to be continuously reviewed and updated as needed. Any comments, proposed revisions, or best practices should be submitted to the Operations Traffic Engineer at Christina.Bennett@state.sd.us or 605-773-4759.

Determine the temporary traffic control impact on pedestrians

- Are there pedestrian traffic generators within the project limits? Examples include schools, shopping areas, community or senior centers, and transit facilities.
- Pedestrian needs in the proposed work zone should be determined during the public input process and through field visits.
- Consider meeting and/or speaking with local community organizations to address concerns and needs.
- In areas that are rural, or where few or no pedestrians exist, the need for temporary facilities will depend on whether there is existing facilities or evidence of pedestrian use. If there is no sidewalk, no wide shoulder on which pedestrians are permitted to walk, or no evidence of existing pedestrian activity, the project may not require an accessible pedestrian route. Evidence of existing pedestrian activity includes worn dirt paths, visual observation of people walking in the roadway, adjacent bus stops, and adjacent pedestrian destinations.

Designing temporary traffic control for pedestrians

- It is recommended that accessible routes for pedestrians be indicated on the traffic control plan sheets.
- If the work zone will be in an area where the posted speed is 40 mph or more and the pedestrian facility is next to the driving lane, provide positive protection with crash cushions or barriers, or consider detouring pedestrians across the street or around a block to open, permanent pedestrian facilities as appropriate.
- Pedestrians are not likely to back-track; meaning they need early warning of what they are approaching as they may be more inclined to go into the street to avoid a short closure rather than retrace their steps back to a designated crosswalk. Also, when they approach the work area, persons with disabilities need guidance on any changes from the normal route, such as shifts in the walkway alignment, in the same way that drivers must be warned about lane changes. Therefore, pedestrians must be warned in advance of changed conditions and advised of their options for alternate routes via the use of signing and other traffic control devices.
 - Sign placement should be in advance of the construction site at the beginning of the block at an accessible crossing point.

- Close the sidewalk at a point where there is an alternate way to proceed or provide an alternate pedestrian route.
 - Pedestrian channelizing devices should be used to close sidewalks.
 - Type 3 Barricades are not an adequate device to mark a sidewalk closure.
- Provide for advance public notification of sidewalk closures in the plans.
- Pedestrian access to businesses and government and healthcare services within the project limits should be provided to the maximum extent practical or feasible. If alternate entrances or alley access is available, pedestrian detours to utilize these should be clearly marked. Midblock crossings may be provided to access a block of business on the opposite side of the pedestrian access route, if the location of the crossing will not create an unsafe situation for pedestrians and will connect to existing or temporary compliant pedestrian access to the businesses.
- When pedestrians traverse the work zone, the route must be clearly marked, be provided with a suitable surface, and they must be protected from other traffic and work operations, including drop-offs. When they exit the work area, pedestrians need to be guided back to their original route.
- For roadways with no available pedestrian detours, maintain one pedestrian access route at all times.
- Consider the use of flaggers at uncontrolled crossings if pedestrian generators, such as schools, are in the vicinity.
- In certain circumstances, it may be appropriate to employ shuttle buses to maintain pedestrian continuity through a work zone.
- When necessary, pedestrian crossings of roadways shall be signed in accordance with the MUTCD. Care should be taken when placing pedestrian crossing signs to avoid having them obscure, or be obscured by, other temporary traffic control devices.

Ensure compliance with ADA requirements

- Temporary facilities should replicate as nearly as practical the accessibility features present in the existing pedestrian facility when the existing facilities are disrupted, closed, or relocated in a temporary traffic control zone. Where accessibility features are not present in the existing pedestrian facility, compliant facilities should be provided to the extent feasible and practical for the temporary facilities. For example, if the existing sidewalk on one side of a highway is used as the Pedestrian Access Route, but there are not curb ramps at the intersections where pedestrians need to cross to utilize this sidewalk, temporary curb ramps should be installed.
- Many of the challenges encountered by visually impaired pedestrians are information-related, and can be addressed in two ways:
 - By improved communication at the site of the work zone, and
 - By improved communication with the public that focuses on transportation users with disabilities.
- Title II of the ADA requires that the State or local agency performing the work ensure that communications with individuals with disabilities are as effective as communications with others. In general, standard public announcements via

public service messages, the Internet, radio and TV, area newspapers, phone messaging, etc. should be made to advise the community of the location and duration of temporary traffic control for significant reconstruction projects that will have long-term impacts on pedestrians. These announcements should include information for persons with disabilities needing to access pedestrian facilities or should provide contact information where specialized information can be obtained.

- A guide can be provided in advance of the temporary traffic control area to assist any persons with disabilities or impairments in navigating the accessible pathway. This may be particularly appropriate in areas where there are known to be higher concentrations of persons with disabilities.
 - **If it is not possible to install temporary pedestrian facilities that are ADA compliant, such exceptions shall be documented for the project.**
- The department is developing specifications, details, and guidance for the use of audible devices on temporary pedestrian access routes. Until the department completes those items, please direct questions about the use of audible devices to the Operations Traffic Engineer.

Proposed Notes

TEMPORARY PEDESTRIAN ACCESS ROUTE

A Temporary Pedestrian Access Route (TPAR) shall be provided when crosswalks, sidewalks, or other pedestrian facilities are blocked, closed, or relocated. A TPAR may consist of a combination of existing and/or temporary pedestrian facilities. The TPAR shall be kept free of any obstructions and hazards, such as holes, debris, mud, snow, construction equipment, traffic control signing, stored materials, etc.

The Contractor shall notify the Engineer at least 72 hours prior to start of any construction operation that will necessitate a change in pedestrian access. Pedestrian traffic signal displays controlling a crosswalk that is closed shall be covered or removed.

TEMPORARY PEDESTRIAN SIDEWALK

Temporary Pedestrian Sidewalk shall be a smooth, continuous, non-slip, hard surface. There should be no curbs or abrupt changes in grade or terrain that could cause tripping or be a barrier to wheelchair use.

Temporary Pedestrian Sidewalk shall have a minimum width of 48", with 60" recommended. The Contractor shall try to provide boulevard sidewalk whenever possible for Temporary Pedestrian Sidewalk that is 48" in width. Temporary Pedestrian Sidewalk less than 60" wide shall provide for a 60"x60" passing space at intervals not to

exceed 200 ft. Temporary Pedestrian Sidewalk shall have a maximum cross slope of 2%. The maximum grade shall be 5% where the Temporary Pedestrian Sidewalk does not follow the grade of the road.

Use the following bid item on smaller projects where quantities will not be broken out for the TPAR. This can also be used on larger projects for smaller miscellaneous items. Add language to the notes specifying what will be paid for under the TPAR lump sum bid item.

All costs associated with installing and maintaining a Temporary Pedestrian Access Route, including Temporary Pedestrian Sidewalk, shall be incidental to the contract lump sum price for TEMPORARY PEDESTRIAN ACCESS ROUTE.

For typical projects, use the following bid item.

All costs associated with installing and maintaining Temporary Pedestrian Sidewalk, including all materials, gravel, labor, and incidental work, shall be included in the contract unit price per square foot for TEMPORARY SIDEWALK.

TEMPORARY CURB RAMP

Temporary Curb Ramps should be firm, stable, and have a non-slip surface. They shall not warp or buckle, and should be made of materials strong enough to support a weight of 800 pounds. Temporary Curb Ramps shall also be color contrasting and contain marked edges so they are noticeable by pedestrians who have visual impairments. Lateral joints or gaps between surfaces shall be a maximum of 0.5 inches in width. Temporary Curb Ramps shall include detectable warning panels.

Temporary Curb Ramps shall be the full width of the temporary pedestrian access route, with a recommended width of 60" and a minimum width of 48". Temporary Curb Ramps shall have a maximum slope of 1:12, and have free draining surfaces with a maximum cross slope of 2 percent. Handrails on Temporary Curb Ramps are not required unless the curb ramp has a rise exceeding 6" and a length exceeding 72".

All costs shall be incidental to the contract unit price per each for TEMPORARY CURB RAMP.

LONGITUDINAL PEDESTRIAN BARRICADE

Longitudinal Pedestrian Barricades should not be used to provide positive protection for pedestrians.

Barricade rail supports may not project into pedestrian routes more than 4 inches from the face of the barricade. To prevent any tripping hazard to pedestrians, ballast shall be located behind or internal to the device.

When Longitudinal Pedestrian Barricades are combined in a series, the maximum gap between devices that do not interlock shall be one inch. Joints between devices that do interlock shall be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing. **When used as a sidewalk closure mechanism, Longitudinal Pedestrian Barricade must run the entire width of the sidewalk.**

Longitudinal Pedestrian Barricade should provide a color contrasting pattern. Black should not be used to color any base on a device. The devices should comply with the general color and stripe pattern requirements of Section 6F.68 of the MUTCD.

Longitudinal Pedestrian Barricade shall have continuous bottom and top surfaces. A gap height or opening from the walkway surface up to a maximum of 2 inches is allowed for drainage purposes. The top edge of the bottom portion shall be a minimum of 8 inches above the walkway. The top of the top portion shall be between 34 and 38 inches above the walkway. The top surface shall be smooth to allow safe hand trailing. Both upper and lower surfaces shall share a common vertical plane.

All costs shall be incidental to the contract unit price per foot for LONGITUDINAL PEDESTRIAN BARRICADE.

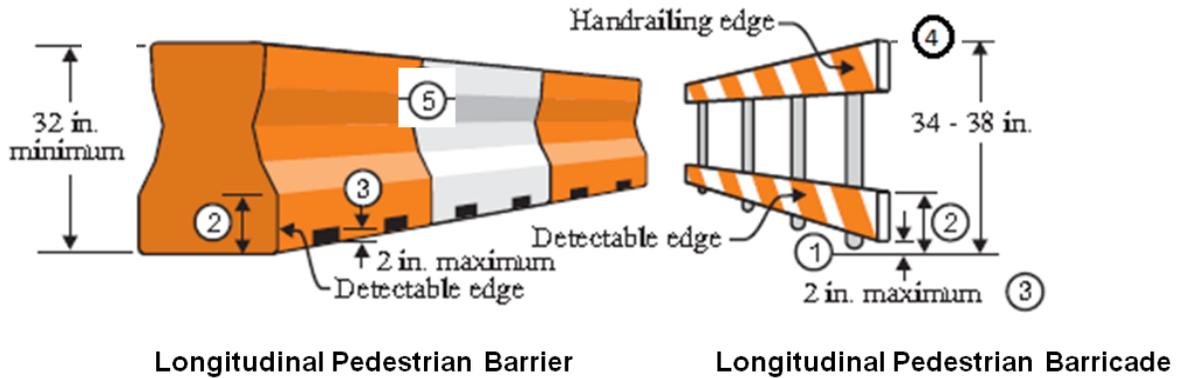
LONGITUDINAL PEDESTRIAN BARRIER

When exposed to vehicular traffic, Longitudinal Pedestrian Barrier shall be crashworthy, and the bottom and top surfaces of the traffic side of devices shall have retroreflective sheeting or delineation for improved nighttime visibility.

When Longitudinal Pedestrian Barriers are combined in a series, the maximum gap between devices that do not interlock shall be one inch. Joints between devices that do interlock should be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing. Channelizing devices should provide a color contrasting pattern. Black should not be used to color any base on a device. The devices should comply with the general color and stripe pattern requirements of Chapter 6F of the MUTCD.

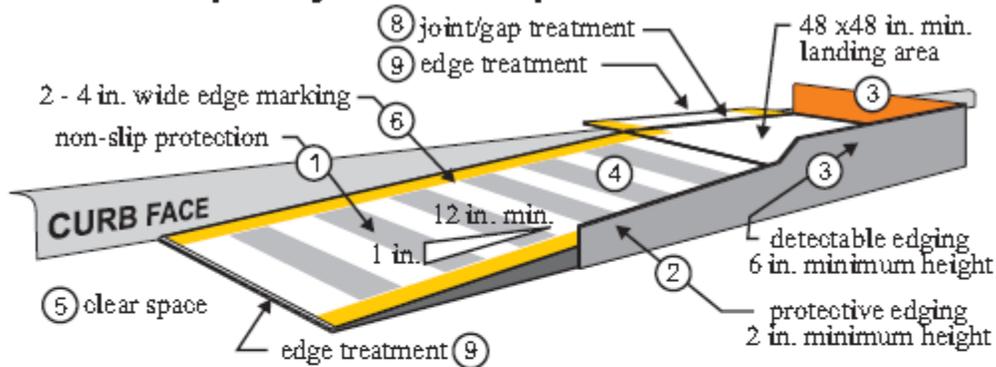
Longitudinal Pedestrian Barriers shall have continuous bottom and top surfaces. The lower edge of the bottom portion shall be a maximum of 2 inches above the walkway. The top edge of the bottom portion shall be a minimum of 8 inches above the walkway. The top of the top portion shall be a minimum of 32 inches above the walkway. The top surface shall be smooth to allow safe hand trailing.

All costs shall be incidental to the contract unit price per foot for LONGITUDINAL PEDESTRIAN BARRIER.

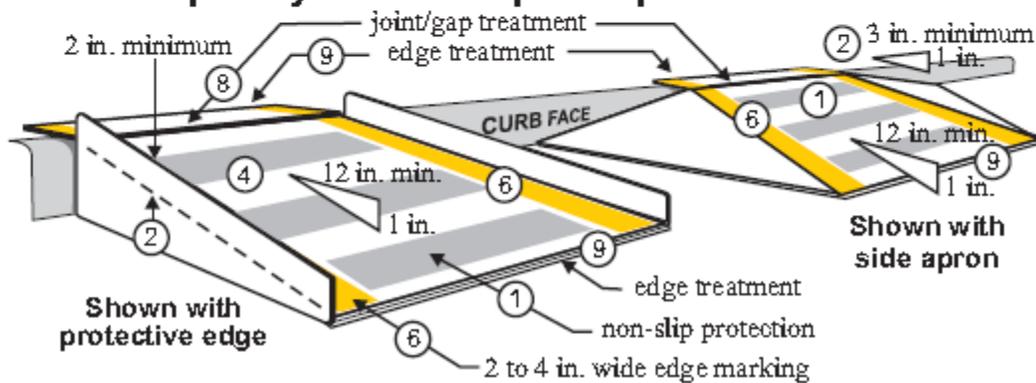


1. Barricade rail supports may not extend into the pedestrian walkway more than 4 inches from the face of the barricade.
2. The top edge of the bottom portion shall be a minimum of 8 inches above the walkway.
3. Devices shall not block water drainage from the walkway. A gap height or opening from the walkway surface up to a maximum of 2 inches in height is allowed for drainage purposes.
4. The top edge of the Longitudinal Pedestrian Barricade is to be used as a guiderail to provide visual and tactile guidance to pedestrians along a designated route. The top surface should have a minimum width of 0.5 inches to allow the hand to feel the surface. The surface should be smooth and free of any sharp or abrasive elements to allow safe hand trailing.
5. Longitudinal Pedestrian Barrier used to provide positive protection from traffic to pedestrians should be crashworthy.
6. When either device is combined in a series, the maximum gap between devices that do not interlock shall be 1 inch. Joints between devices that do interlock should be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing.

Temporary Curb Ramp - Parallel to Curb



Temporary Curb Ramp - Perpendicular to Curb



NOTES:

1. Curb ramps shall be 48 inch minimum width with a firm, stable, and non-slip surface.
2. Protective edging with a 2 inch minimum height shall be installed when the curb ramp or landing platform has a vertical drop of 6 inches or greater or has a side apron slope steeper than 1:33 (33%). Protective edging should be considered when curb ramps or landing platforms have a vertical drop of 3 inches or more.
3. Detectable edging with 6 inches minimum height and contrasting color shall be installed on all curb ramp landings where the walkway changes direction (turns).
4. Curb ramps and landings should have a 1:50 (2%) maximum cross slope.
5. A minimum clear space of 48 inch x 48 inch minimum shall be provided above and below the curb ramp, with a 60 inch x 60 inch clear space preferred.
6. The curb ramp walkway edge shall be marked with a contrasting color 2 to 4 inch wide marking. The marking is optional where color contrasting edging is used.
7. Water flow in the gutter system shall have minimal restriction.
8. Lateral joints or gaps between surfaces shall be less than 0.5 inches in width.
9. Changes between surface heights should not exceed 0.5 inches. Lateral edges should be vertical up to 0.25 inches in height, and beveled at 1:2 between 0.25 inches and 0.5 inches in height.