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16. Abstract

The need to provide improved consistency and quality of pedestrian traffic control devices has become more important with the implementation of the Americans with Disabilities Act of 1990 (ADA), which was passed to eliminate barriers to employment, transportation, public accommodations, public services, and telecommunications. The ADA requires that pedestrians with physical and/or mental disabilities be accommodated not only in completed facilities, but also during times of construction. The Texas Department of Transportation sponsored a project to investigate methods for accommodating pedestrians in work zones that meet the evolving requirements being developed as a result of the ADA. This checklist document was developed to assist in considering pedestrians within the public right-of-way. Advice on pedestrians is contained in several locations – this document groups the advice to reflect the different stages of a project. The four stages used within the checklist are:

- Stage 1. Feasibility
- Stage 2. Project Assessment
- Stage 3. Temporary Traffic Control Plan Development
- Stage 4. Construction In-Field Review

The checklist provides topics and issues to be considered within each stage. It also provides examples or discussion for these topics. After the user gains familiarity with the checklists, the examples and discussions are not needed. Therefore, the Appendix provides a summary of the key topics to consider when using the checklist.

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CHECKLIST FOR ACCOMMODATING PEDESTRIANS IN TEMPORARY TRAFFIC CONTROL AREAS

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DISCLAIMER

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the Federal Highway Administration (FHWA) or the Texas Department of Transportation (TxDOT). This report does not constitute a standard, specification, or regulation. The engineer in charge was Kay Fitzpatrick, P.E. (TX-86762).

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- **Tom Beeman,** TxDOT Design Division, Program Coordinator
- **Paul Clutts**, Federal Highway Administration, Project Advisor
- **Mike Coward**, TxDOT San Antonio District, Project Advisor
- **Pete Krause**, TxDOT Design Division, Project Advisor
- **Robert Musselman**, Federal Highway Administration, Project Advisor
- **Rodney Svec,** TxDOT Yoakum District, Project Advisor
- **Gary Tarter,** TxDOT Traffic Division, Project Advisor
- **Wade Odell,** TxDOT Research and Technology Implementation Office, Research Engineer
- **Sandra Kaderka,** TxDOT Research and Technology Implementation Office, Contract Specialist

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INTRODUCTION

The Americans with Disabilities Act of 1990 and Supporting Documents

The need to provide improved consistency and quality of pedestrian traffic control devices has become more important with the implementation of the Americans with Disabilities Act of 1990 (ADA), which was passed to eliminate barriers to employment, transportation, public accommodations, public services, and telecommunications (*1*). The ADA requires that pedestrians with physical and/or mental disabilities be accommodated not only in completed facilities, but also during times of construction.

To ensure that buildings and facilities are accessible to and usable by people with disabilities, the ADA establishes accessibility guidelines for state and local government facilities, places of public accommodation, and commercial facilities. Under the ADA, the U.S. Access Board has developed and continues to maintain design guidelines for accessible buildings and facilities known as the ADA Accessibility Guidelines (ADAAG) (*2*). The ADAAG covers a wide variety of facilities and establishes minimum guidelines for new construction and alterations.

The Texas Accessibility Standards (TAS) (*3*) are similar to, but sometimes more restrictive, than the ADAAG. As part of complying with Texas requirements, the proposed plans must be submitted to the Texas Department of Licensing and Regulation (TDLR) for projects where the estimated cost of pedestrian elements is over $50,000. Failure to submit the plans can result in disciplinary action by the appropriate professional licensing board.

The ADAAG (*2*) establishes design requirements for the construction and alteration of facilities in the private and public sectors. The U.S. Access Board develops the requirements as “guidelines” to serve as a basis for “standards” enforced by the Department of Justice (DOJ) and the Department of Transportation (DOT). In July 2004, the U.S. Access Board completed a comprehensive update of ADAAG. A separate set of guidelines is being developed for public rights-of-way that will cover pedestrian access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way.

In 1999, the Public Rights-of-Way Access Advisory Committee (Committee) was established to make recommendations on accessibility guidelines for newly constructed and altered public rights-of-way. On January 10, 2001, the Committee presented its recommendations on accessible public rights-of-way. The Access Board reviewed the Committee’s recommendations and released recommendations for guidelines addressing accessibility in the public right-of-way on June

17, 2002. Over 1400 comments were received from the public in response to the publication of the draft. These comments were reviewed, and revised draft guidelines were made available on November 23, 2005, on the Board's website (*4*). The U.S. Access Board made the draft guidelines available in order to facilitate gathering additional information for a regulatory assessment prior to publishing a notice of proposed rulemaking and to assist in development of technical assistance materials. The U.S. Access Board is not soliciting comments on the draft guidelines and will solicit comments when a proposed rule is issued in conjunction with the regulatory assessment.

Checklist

This document was developed to assist in considering pedestrians within the public right-of-way. Advice on pedestrians is contained in several locations – this document groups the advice to reflect the different stages of a project. The four stages used within the checklist are:

- Stage 1. Feasibility,
- Stage 2. Project Assessment,
- Stage 3. Temporary Traffic Control Plan Development, and
- Stage 4. Construction In-Field Review.

The checklist begins by identifying the type of background information that may be needed to assess pedestrian needs within a project area. A clearer understanding of how to consider pedestrians within a project can be achieved if the end product is known. Stage 2 of the checklist provides an assessment of pedestrian concerns within a finished project. Stage 3 focuses on items to consider when developing the traffic control plans that will be used during construction. Because a construction area constantly changes, the conditions within the construction site should be periodically reviewed. Stage 4 provides items to check during construction.

The checklist provides topics and issues to be considered within each stage. It also provides examples or discussion for these topics. After the user gains familiarity with the checklist, the examples and discussions are not needed. Therefore, the Appendix provides a summary of the key topics to consider when using the checklist.

Use of Checklist

The checklist provides advice for the consideration of pedestrians within the public right-of-way. Use of the checklist is appropriate when sidewalks exist within the limits of the project or there is the potential for pedestrian traffic through the project.

TxDOT direction regarding sidewalks is as follows:

- Sidewalks should be included on the project when:
  - Facility is part of a locally adopted sidewalk planning document;
  - There is evidence of pedestrian traffic (either pedestrians are observed, there is a beaten down path, or significant potential exists for pedestrians to walk in the roadway); or
  - Facility is located on a route to a school or a transit route.
- Sidewalk may be considered when:
  - Pedestrian generators/attractors exist.

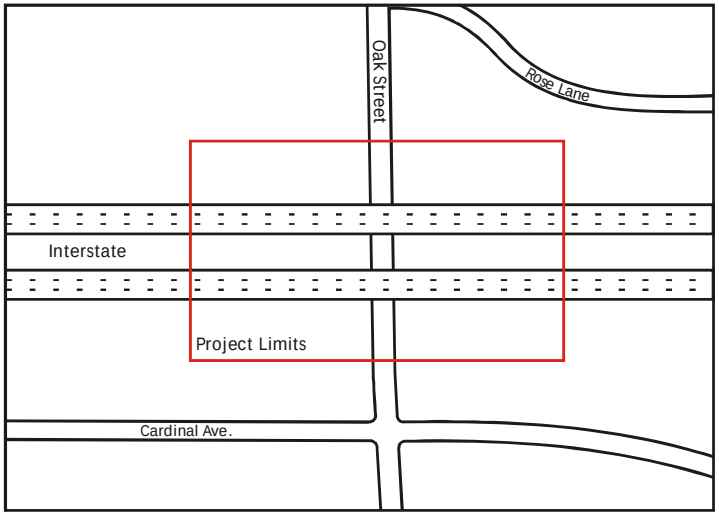
If a sidewalk is not to be included in the project, consider pedestrian facility design during the project development process so that later inclusion can be easier, less costly, and simpler in meeting accessibility requirements.

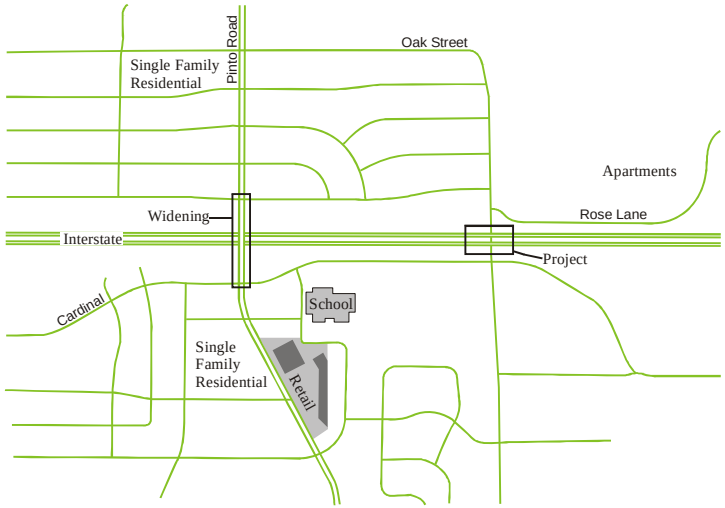
Sources Used in Checklist

Table 1 lists sources used in the development of the checklist. These sources can be consulted for additional information.

Table 1. Sources on Roadway Design, Traffic Control Devices, and Pedestrians

Agency	Title	Date	Location
TxDOT (Texas Department of Transportation)	*Texas Manual on Uniform Traffic Control Devices*	2006	http://www.dot.state.tx.us/publications/traffic.htm
TxDOT	*Roadway Design Manual*	2007	http://www.dot.state.tx.us/services/general_services/manuals.htm
TxDOT	"Pedestrian Facilities" PED-05 Standard Sheet	2002	http://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/standard/rdwylse.htm
TxDOT/TTI (Texas Transportation Institute)	*Urban Intersection Design Guide*	2004	http://tti.tamu.edu/documents/0-4365-P2.pdf
TRB (Transportation Research Board)	*Highway Capacity Manual*	2000	Available for purchase from TRB Bookstore: http://gulliver.trb.org/bookstore/
ITE (Institute of Transportation Engineers)	*Traffic Control Devices*	2001	Available for purchase from ITE Bookstore: http://www.ite.org/bookstore/index.asp
ITE	*Special Report: Accessible Public Rights-of-Way, Planning and Designing for Alterations*	2007	Available on: http://www.ite.org/
AASHTO (American Association of State Highway and Transportation Officials)	*Guide for the Planning, Design, and Operation of Pedestrian Facilities, 1st Edition* (commonly known as *Pedestrian Guide*)	2004	Available for purchase from AASHTO Bookstore: https://bookstore.transportation.org/
AASHTO	*Roadside Design Guide, 3rd Edition*	2006	Available for purchase from AASHTO Bookstore: https://bookstore.transportation.org/
AASHTO	*Guide for the Development of Bicycle Facilities, 3rd Edition* (commonly known as the *Bike Guide*)	1999	Available for purchase from AASHTO Bookstore: https://bookstore.transportation.org/
U.S. Access Board	*Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities* (ADAAG)	2002	http://www.access-board.gov/adaag/html/adaag.htm
U.S. Access Board	*Revised Draft Guidelines for Accessible Public Rights-of-Way*	2005	http://www.access-board.gov/prowac/draft.htm
Texas Department of Licensing and Regulation	*Architectural Barriers Texas Accessibility Standards (TAS)*	1994	http://www.license.state.tx.us/ab/abtas.htm

STAGE 1: FEASIBILITY		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 1: Scope of Project** ▪ What is the general type of project? A broad appreciation of the scope of the project will assist in addressing topics on this checklist.	General information on the project should be collected, especially with respect to pedestrians. Identify stakeholders who may need to be informed about the status of the project. Identify other needed data including but not limited to: utilities, crashes, right of entry, previous studies, etc. A case study example will be used to illustrate some of the Stage 1 principles. The project is a reconstruction of an interstate bridge over an arterial street (see Figure 1-1). The interstate does not have frontage roads. The reconstruction will need to close lanes on the arterial under the bridge to allow work on the bridge piers. There are sidewalks along the arterial under the bridge, but no sidewalks along the interstate. The project will begin in the summer and last for about a year.  **Figure 1-1. Close up of Project**

STAGE 1: FEASIBILITY		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 2: Beyond Scope of Project	This topic addresses the identification of significant adjacent developments that may affect the project or that generate pedestrians that may use the roads affected by the project. Information on conditions for areas near the project needs to be identified. For example, is there a nearby school that could generate traffic by school-aged children or is there a special event center that may cause intense peaking during special events? When are events scheduled (i.e., will the school have a large summer school program or does it have evening classes)?
❑	▪ Identify what, beyond the immediate project, may have a major effect on operations within the work zone.	
❑	▪ Identify major pedestrian generators, including housing or shopping centers, that may have a significant influence on the staging of the construction.	
❑	▪ Determine if these pedestrian generators are sources of pedestrians with special needs (i.e., adult day care centers, etc.).	The Case Study project is near a middle school. To the west is an arterial street bridge that was scheduled to be widened (see Figure 1-2). The construction for widening was postponed and will begin about a week prior to the start of the Case Study project.  **Figure 1-2. Roadway System and Key Developments**

STAGE 1: FEASIBILITY		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 3: Existing Pedestrian Routes	Identify existing pedestrian routes. Anticipate how construction will affect their route.
❑	▪ Where are pedestrians walking prior to the construction?	While the construction is scheduled to begin in the summer, the length of the work will require consideration of how the children will walk from the residential area located north of the freeway to the school located south of the freeway. Currently children are using both the underpass at Oak Street and the Pinto Road Bridge (see Figure 1-3).
❑	▪ How will the construction affect their route?	
❑	▪ How will the pedestrians be accommodated at driveways?	

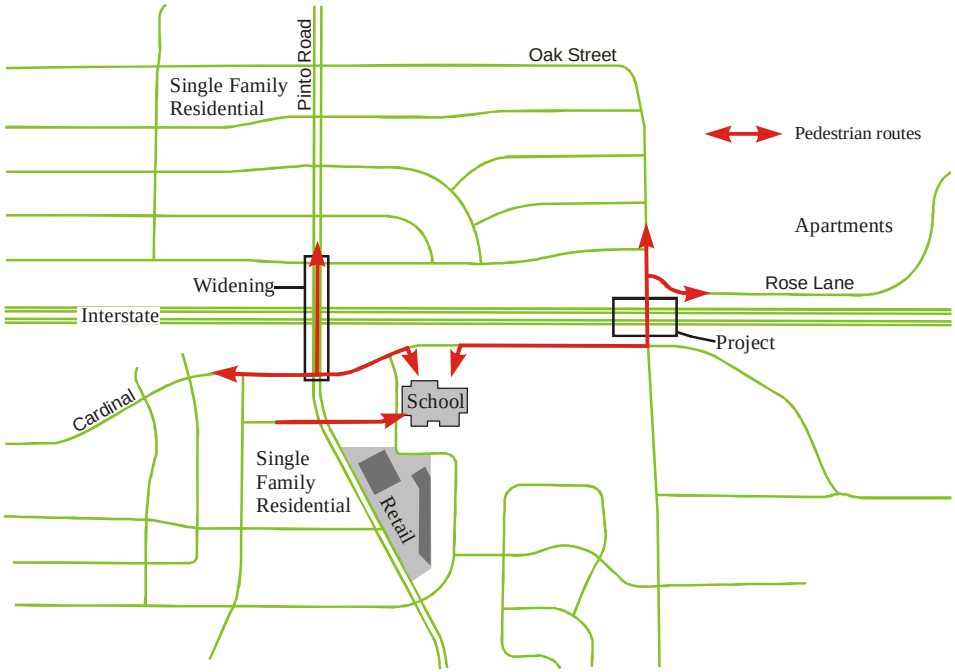
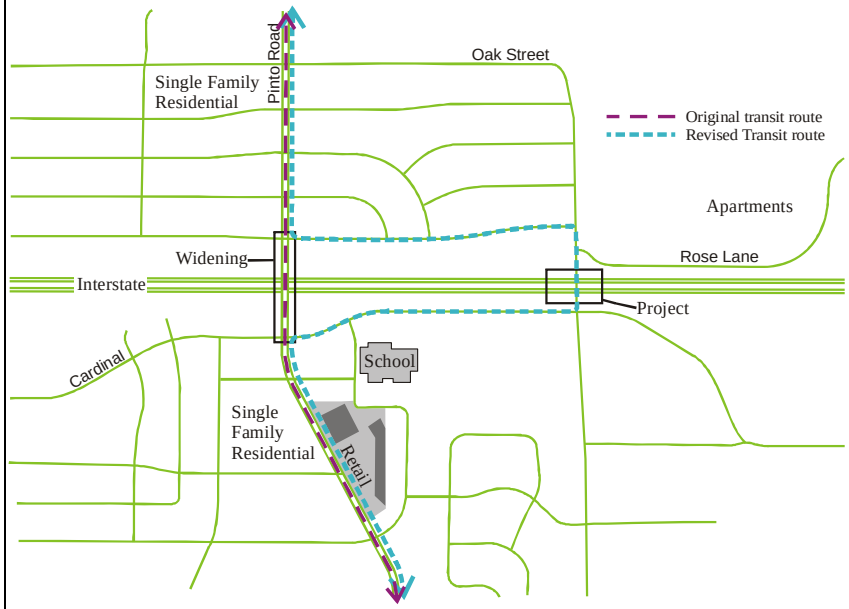


Figure 1-3. Pedestrian Routes near Project

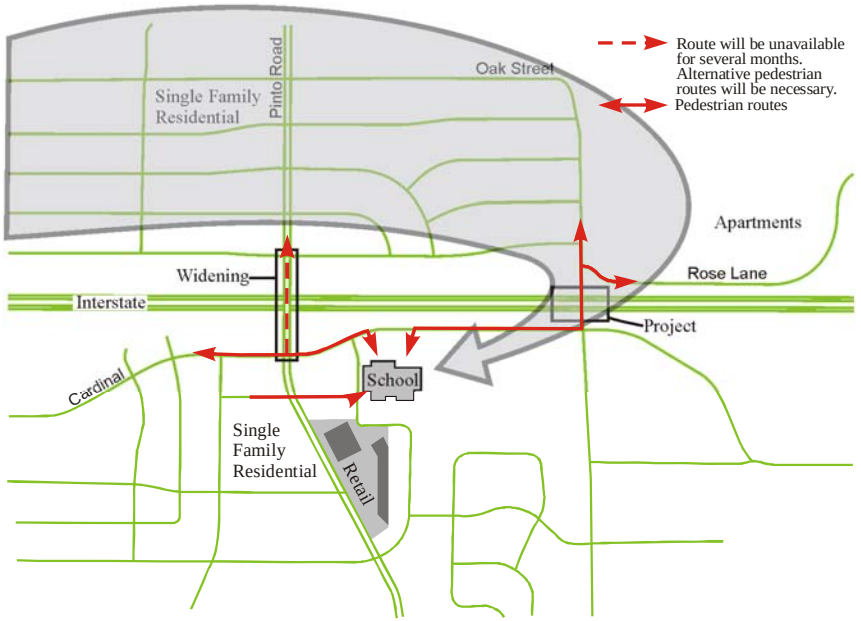
STAGE 1: FEASIBILITY		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑ ❑	**TOPIC 4: Pedestrian Characteristics** ▪ What are the anticipated pedestrian volumes, both walking parallel to work area and crossing near work area? ▪ What ages are expected?	Determine the number of pedestrians and the anticipated ages of the pedestrians. The school is a middle school with children that range between 10 and 14 years of age. In addition to the pedestrian movements during the morning (7:15 to 8:15 am) and afternoon (2:45 to 3:45 pm) peak periods, after-school programs and sport practices result in children leaving the school until after 5 pm. In addition, continuing education classes are held at the school during the evening, which can generate some adult pedestrian movement.

STAGE 1: FEASIBILITY		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 5: Vehicle Traffic Characteristics	Traffic characteristics need to include vehicles (passenger cars, trucks, buses, etc.), pedestrians, and bicyclists. General operating speed should also be determined. The anticipated traffic volume both parallel to and crossing the pedestrian route should be noted.
❑	▪ What kind of traffic is expected within the work zone (passenger cars, trucks, buses, bikes, etc.)?	Figure 1-4 shows estimates of speeds and typical vehicle type expected.
❑	▪ What are the anticipated vehicle volumes parallel to pedestrian routes and crossing the pedestrian routes?	
❑	▪ What is the operating speed for each roadway within the project limits?	
❑	▪ If the pedestrian route is moved to be nearer a higher-speed road, consider if additional or different treatments are needed (e.g., concrete barrier between traffic and pedestrians during construction or wider buffer for additional separation between pedestrians and vehicles).	 **Figure 1-4. Speed and Vehicle Type Expected near Project**

STAGE 1: FEASIBILITY		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 6: Design Volume for Vehicles, Bicycles, and Pedestrians	Review appropriate documents when selecting the design elements for the project to include but not limited to: ▪ Other stages of this checklist ▪ TxDOT *Roadway Design Manual* ▪ TRB *Highway Capacity Manual* ▪ AASHTO *Pedestrian Guide* ▪ AASHTO *Roadside Design Guide* ▪ AASHTO *Bike Guide*
❑	▪ Check the appropriateness of the design for the volume and traffic characteristics, including the effects of unusual proportions of heavy vehicles, cyclists, and pedestrians.	
❑	▪ Check the possible effects of unforeseen or large increases in traffic volume or changes in the traffic characteristics.	The Introduction section has information on where the above documents may be viewed or obtained.
❑	▪ For large projects, check the possible effects staging may have on changing the proportion of turning vehicles at specific intersections within the project.	

STAGE 1: FEASIBILITY		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 7: Transit	Check for transit needs through the site.
❑	▪ Is transit operating within or near to the project limits?	Figure 1-5 shows existing and proposed transit routes due to neighboring construction.
❑	▪ If so, identify transit stop locations within project.	 **Figure 1-5. Transit near Project**

STAGE 1: FEASIBILITY		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 8: Climatic Conditions	Gather weather-related information.
❑	▪ What do the weather records or local experience indicate regarding potential concerns with weather?	
❑	▪ Were portions of the road or pedestrian access route under water during heavy rainfalls?	A portion of the area under the bridge had standing water during recent heavy rains. There is potential for ice on the sidewalk area that is in the shade during the morning.
❑	▪ What locations may be prone to icy or snowy conditions?	

STAGE 1: FEASIBILITY		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 9: Impact of Continuity with Existing Network	Figure 1-6 shows new routes for the school children due to the widening project located west of the subject project. Pedestrians will probably not attempt to cross the freeway; since the surface street is about 15 ft below the freeway, the pedestrians would have to walk up the embankment to reach the freeway.
❑	▪ Check for potential problems where the proposed project blends with or adjoins the existing network.	
❑	▪ Check for potential problems for alternate routes near the project.	 **Figure 1-6. Pedestrian Routes near Project**

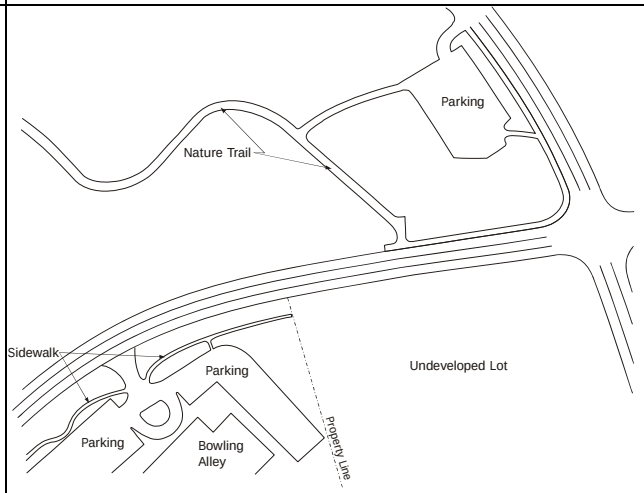
STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 1.1: Overview – Inclusion of Pedestrian Routes (also called Sidewalks) into Project** ▪ Should a sidewalk be included in the project?	Per TxDOT (Saenz) 9/12/2003 memo: ▪ Sidewalks should be included on the project when: o Facility is part of a locally adopted sidewalk planning document; o There is evidence of pedestrian traffic (either pedestrians are observed, there is a beaten down path, or significant potential exists for pedestrians to walk in the roadway); or o Facility is located on a route to a school or a transit route. ▪ Sidewalk may be considered when: o Pedestrian generators/attractors exist. ▪ If a sidewalk is not to be included in the project, consider pedestrian facility design during the project development process so that later inclusion can be easier, less costly, and simpler in meeting accessibility requirements.
❑ ❑ ❑	**TOPIC 1.2: Overview – Visibility** ▪ Review sight restrictions caused by horizontal or vertical curves. ▪ Review sight restrictions caused by roadway elements, for example, bridge components or signs. ▪ Review sight restrictions to or from pedestrians caused by temporary situations, for example, queued vehicles or parked cars.	▪ Will the design be free of sight line obstructions due to features such as: o horizontal or vertical curves, o boundary fences, o street furniture, o parked cars, o signs, o bridge abutments, o queued vehicles, o other local features, and o etc.?

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 1.3: Overview – Landscaping	
❑	▪ Will the design be free of sight line obstructions immediately after landscaping is installed and also after the landscaping matures?	Has safety been adequately considered in the landscaping design or planting; for example, can pedestrians see road traffic and vice versa?
	TOPIC 1.4: Overview – Utilities	
❑	▪ Does the design adequately deal with buried and overhead utilities?	Can the access points to underground utilities be located so repairs will not cause rerouting of pedestrians?
❑	▪ Has the location of fixed objects been checked, including the position of poles?	
	TOPIC 1.5: Overview – Access to Major Developments	
❑	▪ Does the design handle accesses to major adjacent generators of pedestrians? For example, are wider sidewalks needed?	The TRB *Highway Capacity Manual* can be used to determine recommended sidewalk widths.
	TOPIC 1.6: Overview – Effect of Cross-Sectional Variation	
❑	▪ Is the design free of variations in cross section that may have an adverse affect on pedestrians?	An example of a design that may have an adverse effect on pedestrians is when sidewalks are discontinued on a bridge overpass.

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 1.7: Overview – Effect of Departures from Standards	
❑	▪ Are there any approved departures from standards which affect pedestrians and their safety?	Check the impacts on pedestrians of any approved roadway departures from standard.

<table>
<tr><th colspan="3">STAGE 2: PROJECT ASSESSMENT</th></tr>
<tr><th>CHECK</th><th>TOPIC
▪ ISSUES TO BE CONSIDERED</th><th>EXAMPLES or DISCUSSION</th></tr>
<tr><td>❑

❑</td><td>TOPIC 1.8: Overview – Project/Existing Interfaces

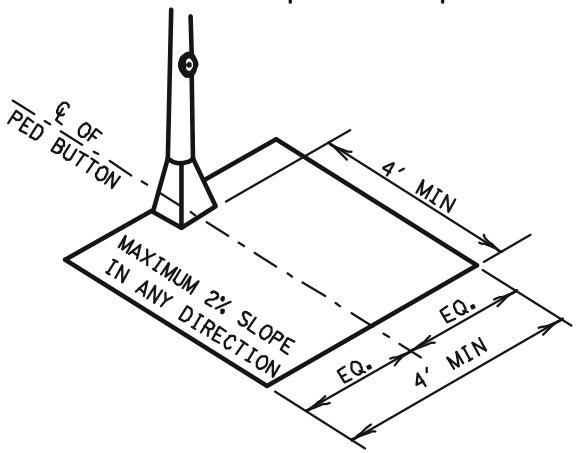
▪ Have implications for safety of the pedestrian been considered at each interface between the project and the existing facility and within the project?
▪ Does the interface occur well away from any hazard (e.g., crest, bend, or where poor visibility/distractions may occur)?</td><td> 

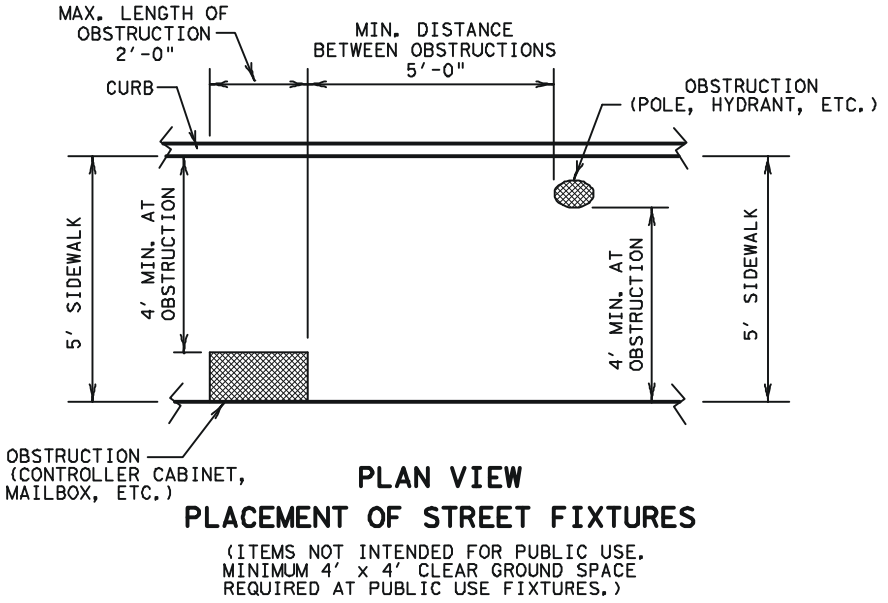
Following are concerns present in Figure 2-1:
▪ Sidewalks end prior to cross street on either side of the roadway and there is a void of sidewalks on both side of the street for a key distance.
Figure 2-1. Sidewalk Scenario
▪ Pedestrians must walk in street or grass when moving from bowling alley to nature trail.
▪ Sidewalk on south side of street ends in horizontal curve (drivers may not see pedestrians walking in street).
▪ While a large buffer exists between the street and the sidewalk in front of the bowling alley, thus providing a large separation between vehicles and pedestrians, the curvilinear design results in increased walking distance. Pedestrians will prefer to walk closer to street if the bowling alley is not their destination.
▪ The meandering sidewalk can cause alignment and orientation problems for pedestrians with vision impairments. It also creates a longer walking distance and is more appropriate for parkways or recreational settings where pedestrians are less likely to resent the additional walking distance.</td></tr>
</table>

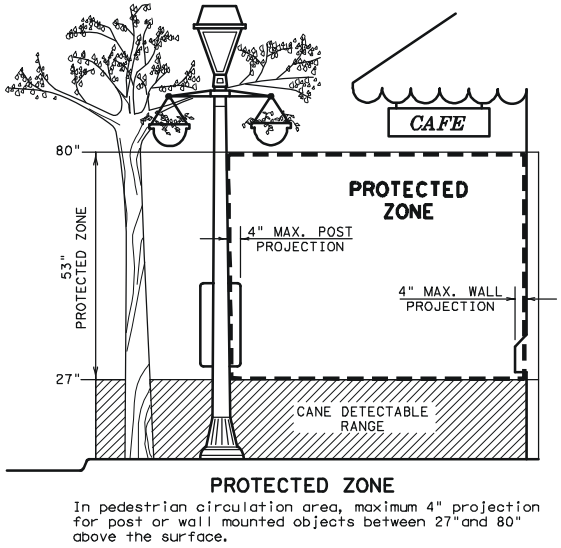
STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 2.1: Sidewalk – Location	
❑	▪ Was a buffer space between traveled way and sidewalk considered? Preference according to the *Roadway Design Manual* (*5*) is for: o 3 ft or greater, with curb and gutter, especially when adjacent to high speed traffic o Between ditch and right-of-way line for rural sections without curb and gutter	For pedestrian comfort, especially adjacent to high-speed traffic, it is desirable to provide a buffer space between the traveled way and the sidewalk as shown in the *Roadway Design Manual* Figure 2-13(A). For curb and gutter sections, a buffer space of 3 ft or greater between the back of the curb and the sidewalk is desirable. For rural sections without curb and gutter, sidewalks should be placed between the ditch and the right-of-way line if practical.
❑		
❑		

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 2.2: Sidewalk – Width	
	▪ Is the appropriate sidewalk width present? Sidewalk width guidance:	Provision of appropriate sidewalk width should encourage walking.
❑	o If a sidewalk is present, the width is to be at least 5 ft.	Chapter 18 of the *Highway Capacity Manual* provides analysis techniques for pedestrian facilities.
❑	o If sidewalk is immediately adjacent to the curb, a sidewalk width of 6 ft is desirable.	
❑	o If within commercial area or areas with concentrated pedestrian traffic, a sidewalk width of 8 ft may be appropriate.	
❑	o If reduced width is required at an obstacle, the width may be reduced to 4 ft for a maximum length of 2 ft provided that reduced-width segments are separated by at least 5 ft in length.	
❑	o When necessary to cross a driveway while maintaining the maximum 2 percent cross slope, sidewalk width may be reduced to 4 ft, see TxDOT Standard Sheet PED-05, sheet 3 (*6*).	

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 2.3: Sidewalk – Slope	
❑	▪ Does the cross slope of the sidewalk not exceed 1:50 (2 percent)?	Excessive cross slope tends to direct wheelchair users into the street.
❑	▪ Because of construction tolerances, do the plans show 1.5 percent to avoid exceeding the 2 percent limit when complete?	
	TOPIC 2.4: Sidewalk – Surface Treatment	
❑	▪ Is the sidewalk surface treatment smooth?	The sidewalk surface treatment can have an impact on the overall accessibility and comfort level of the facility. According to the AASHTO *Ped Guide*, the preferred materials are Portland cement concrete and asphaltic concrete pavement.
❑	▪ Is the sidewalk surface stable, firm, and slip resistant?	
	TOPIC 2.5: Sidewalk – At Driveways	
❑	▪ Consider diverting the sidewalk around the apron when it is immediately adjacent to the curb or roadway to avoid a non-conforming cross slope at driveway.	When a driveway crosses a sidewalk, the driveway must conform in width, cross slope, and grade to the design requirements for sidewalks in order to maintain accessibility for pedestrians with disabilities.
❑	▪ Has each driveway been checked for adequate sight distances?	Additional information is provided in Appendix C of the *Roadway Design Manual* (*5*) and TxDOT Standard Sheet PED-05, Sheet 3 (*6*).

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 2.6: Sidewalk – Street Furniture** ▪ Check the location of street furniture on the pedestrian route.	▪ Special consideration should be given to the location of street furniture (items intended for use by the public such as benches, public telephones, bike racks, and parking meters). A clear ground space at least 2.5 ft × 4 ft with a maximum slope of 2 percent must be provided and positioned to allow for either forward or parallel approach to the element in compliance with ADAAG/TAS. The clear ground space must have an accessible connection to the sidewalk and must not encroach into the 5 ft minimum sidewalk width by more than 2 ft. ▪ Figure 2-2 from the TxDOT Standard Sheet PED-05 (*6*) illustrates clear space for a push button.  CLEAR GROUND SPACE CENTERED AT PEDESTRIAN PUSH BUTTON **Figure 2-2. Graphic on Clear Ground Space from TxDOT Standard Sheet PED-05**

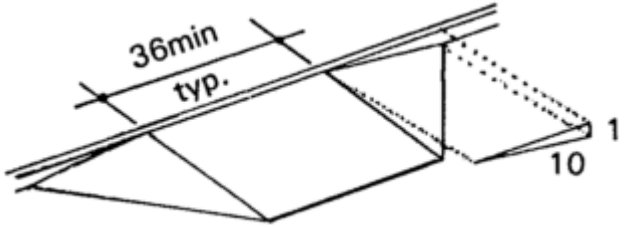
STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 2.7: Sidewalk – Obstacles	
❑	▪ Check the location of obstacles on the pedestrian route.	▪ Utility poles, traffic signs, signals, signal control boxes, pedestrian call buttons, and street name signs should be located so they do not obstruct crosswalks, landing areas, and other parts of a pedestrian route. ▪ Figure 2-3 from the TxDOT Standard Sheet PED-05 illustrates allowable sidewalk width reductions for obstacles.  **Figure 2-3. Graphic on Street Fixtures from TxDOT Standard Sheet PED-05**

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 2.8: Sidewalk – Protruding Objects	
❑	▪ Check the location of protruding objects on the pedestrian route.	▪ Street furniture, plantings, and other fixed items should not protrude into travel routes. ▪ Pedestrians with vision impairments can detect objects mounted on walls or posts if their leading edges are at or below 27 inches above the sidewalk. ▪ Items mounted above the 27 inch height and below 80 inches should not project more than 4 inches into any circulation route. ▪ Figure 2-4 from the TxDOT Standard Sheet PED-05 illustrates the dimensions.  **Figure 2-4. Graphic on Protected Zone from TxDOT Standard Sheet PED-05**

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 2.9: Sidewalk – Lighting	
❑	▪ Is adequate lighting available for the pedestrian route?	The AASHTO *Ped Guide* notes that good street lighting improves the visibility, comfort, and security of pedestrians.
	TOPIC 2.10: Sidewalk – Drainage	
❑	▪ Will the pedestrian routes adequately drain?	▪ Minimizing the effects of drainage grates on the pedestrian route includes the following: o Place all drainage grates outside of the pedestrian travel way, if possible. o If present, the grates (as well as manhole covers, hatches, vaults, and other utility coverings) should be mounted flush and level with the surrounding surface. o Grate openings should not exceed 0.5 inch in width in one direction of travel. o If grates in the walking surface have elongated openings, they must be placed so that the long dimension is perpendicular to the dominant direction of travel.
❑	▪ Has the possibility of flooding been adequately addressed, including overflow from surrounding or intersecting drains and water courses?	
❑	▪ Can the effects on pedestrians from the placement of drainage grates be minimized?	

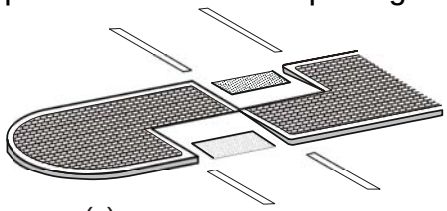
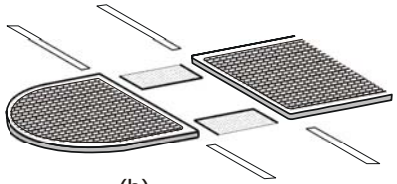
STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 2.11: Absence of Sidewalks	
❑	▪ If no sidewalks are provided, resulting in the shoulder being the pedestrian route, do the shoulders satisfy the requirements for a pedestrian route?	The AASHTO *Ped Guide* notes that "most highway shoulders are not pedestrian facilities, because they are not intended for use by pedestrians, although they can accommodate occasional pedestrian usage. Policies concerning shoulder cross slope and width for specific highway functional classes (local, collector, and arterial roads) are presented in the AASHTO *Green Book*. Where a shoulder serves as a part of a pedestrian access route, it must meet ADA requirements for pedestrian walkways to the maximum extent possible."

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 3.1: Curb Ramp – Inclusion	
❑	▪ Are curb ramps to be included in the project?	The TxDOT *Roadway Design Manual* (*5*) states that curb ramps must be provided in conjunction with each project where the following types of work are performed: ▪ resurfacing projects, including overlays and seal coats, where a barrier exists to a sidewalk or path; ▪ construction of curbs, curb and gutter, and/or sidewalks; ▪ installation of traffic signals that include pedestrian signals; and ▪ installation of pavement markings for pedestrian crosswalks. A curb ramp or blended transition should be provided wherever the pedestrian route crosses a curb, including: ▪ intersections; ▪ midblock crosswalks; ▪ medians and islands traversed by crosswalks, alleys, accessible parking aisles, passenger loading zones; and ▪ locations where the public sidewalk ends and pedestrian travel continues in the roadway. A curb ramp or blended transition is not required where the pedestrian route crosses a driveway and the elevation of the pedestrian route is maintained.
❑	▪ Is a curb ramp with level landing provided whenever a new or upgraded public sidewalk crosses a curb?	

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 3.2: Curb Ramp – Location	
❑	▪ If at least one corner is served by a public sidewalk or a pedestrian route, then all corners of the intersection served by a crosswalk should have curb ramps or blended transitions.	A curb ramp or blended transition on each corner eliminates the possibility of a pedestrian traveling across the road and finding no refuge at the other end of the crosswalk.
❑	▪ Is the curb ramp located to prevent obstruction by parked vehicles?	Example of a built-up curb ramp shown in the Texas Accessibility Standards (*3*) is shown in Figure 2-5.
❑	▪ Does any built-up curb ramp not project into traffic lanes or accessible parking aisles, if present?	 **Figure 2-5. Example of Built-Up Curb Ramp**
	TOPIC 3.3: Curb Ramp – Selection	
❑	▪ Use the following order of preference when selecting curb ramps: 1. perpendicular, 2. parallel or combination, and 3. diagonal.	Additional guidance is provided in: ▪ Texas *Roadway Design Manual* http://www.dot.state.tx.us/services/general_services/manuals.htm ▪ Architectural Barriers Texas Accessibility Standards *(TAS)* http://www.license.state.tx.us/ab/abtas.htm ▪ TxDOT Standard Sheet PED-05 “Pedestrian Facilities” http://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/standard/rdwylse.htm ▪ *Urban Intersection Design Guide* http://tti.tamu.edu/documents-0-4365-P2.pdf

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 3.4: Curb Ramp – Design	
	▪ Is the appropriate curb ramp design present? Requirements for curb ramp design include:	There are several requirements for curb ramps (see listing on this page and the following page). Examples are provided in the *Roadway Design Manual* and Standard Sheet PED-05.
❑	o Is the bottom of the curb ramp run wholly contained within the markings of the crosswalk?	
❑	o Is the minimum width of the curb ramp 4 ft, exclusive of the flared sides?	
❑	o Is a flared side of appropriate slope provided when a side of a curb ramp is contiguous with a public sidewalk or walking surface?	
❑	o Is the maximum grade of the curb ramp 8.3 percent (1:12 slope)?	
❑	o Is the maximum cross slope of the curb ramp 2.0 percent? Can a flatter grade be used?	
❑	o Does the counter slope of the gutter or road surface at the foot of the curb ramps not exceed 1:20?	
	(continued on next page)	

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 3.4: Curb Ramp – Design (continued)	
	▪ Is the appropriate curb ramp design present? Additional requirements for curb ramp design include:	There are several requirements for curb ramps (see listing on this page and the previous page). Examples are provided in the *Roadway Design Manual* and Standard Sheet PED-05.
❑	o Is the algebraic difference in grade between the curb ramp and the street less than or equal to 11 percent (see Figure 3-29 of the AASHTO *Ped Guide* for additional information)?	
❑	o Is the detectable warning present?	
❑	o Are the curb ramps free of obstructions? Utility poles, traffic signs, signals, signal control boxes, drainage structures, pedestrian call buttons, and street name signs are to be carefully located so they do not obstruct the installation of curb ramps or the pedestrian's ability to safely cross the road.	
❑	o Can manhole covers, grates, and obstructions not be located within the curb ramp, maneuvering area, or landing?	

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 3.5: Curb Ramp – Landings	
❑ ❑ ❑	▪ Is the landing a 5 ft × 5 ft square or 5 ft diameter circle? ▪ Does the landing have less than 2 percent cross slope in all directions? ▪ Does the landing provide continuous passage in each direction of travel?	Landings provide a level area (less than 2 percent cross slope in any direction) for users to wait, maneuver into or out of a curb ramp, or to bypass the ramp altogether. Landings should also be provided at raised medians or channelizing islands or a cut-through should be provided. Figure 2-6(a) is a drawing of an actual median where the ramps were not connected. The top of each ramp may have had the space for a landing (i.e., a 5 ft × 5 ft square) with less than 2 percent cross slope; however, the surface was an uneven brick. A user of the ramp could not transition from one ramp to the other without moving across the edge of the ramp. An alternative design is shown in Figure 2-6(b). A cut-through will provide a continuous passage.  (a)  (b) **Figure 2-6. Example of (a) Lack of Landing and (b) Cut-Through Median Design**

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 3.6: Curb Ramp – Drainage	
❑ ❑	▪ Will the ramps adequately drain? ▪ Are the effects of grates minimum (see discussion under Topic 2-2.10)?	▪ All curb ramps need to avoid storm drain inlets, which can catch wheelchair casters or cane tips. ▪ Curb ramps need to be adequately drained. A puddle of water at the base of a ramp can hide pavement discontinuities. Puddles can also freeze and cause the user to slip and fall.

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 4.1: Crosswalk – Overview	
❑	▪ Does the crosswalk design follow the good intersection crossing design attributes provided in the AASHTO *Ped Guide*?	Attributes associated with good intersection crossing design by the AASHTO *Ped Guide* include: **Clarity** – it should be obvious to motorists that there will be pedestrians present; it should be obvious to pedestrians where best to cross. **Predictability** – the placement of crosswalks should be predictable. Additionally, the frequency of crossings should increase where pedestrian volumes are greater. **Visibility** – the location and illumination of the crosswalk allows pedestrians to see and be seen by approaching traffic while crossing. **Short Wait** – the pedestrian does not have to wait unreasonably long for an opportunity to cross. **Adequate Crossing Time** – the time available for crossing accommodates users of all abilities. **Limited Exposure** – conflict points with traffic are few, and the distance to cross is short or is divided into shorter segments with crossing islands. **Clear Crossing** – the crosswalk is free of barriers, obstacles, and hazards and is accessible to all users. Pedestrian crossing information is available in accessible formats.

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 4.2: Crosswalk – Design	
❑	▪ Does the crosswalk meet the cross slope requirements of a sidewalk?	Features such as landscaping, parked cars, utility poles, traffic control devices, and street furniture can create sight obstructions to the pedestrian.
❑	▪ Are adequate sight distances and clear sight lines provided at crosswalks?	
❑	▪ If colored or textured crosswalk is used, is the surface smooth, nonslip, and visible?	
	TOPIC 4.3: Crosswalk – Information Needs	
❑	▪ Are the information needs of blind and low-vision pedestrian considered at the intersections?	Consider the information needs of blind and low-vision pedestrians at intersections. When pedestrian signals are provided, their crossing and timing information should be available to all users. The audible and vibrotactile information delivered at the pedestrian button of an accessible pedestrian signal (APS) can identify pedestrian signal phases and provide other nonvisual information about the nature of a crossing.
	TOPIC 4.4: Crosswalk – Crossing Time	
❑	▪ Are there pedestrians needing a longer crossing time at an intersection?	Insufficient crossing time may be a barrier for some pedestrians. Some jurisdictions add additional time using video technology; others employ a ped button to call for a longer crossing cycle.

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 4.5: Crosswalk – Medians	
❑	▪ If a median is planned for the roadway, can pedestrians traverse the median without leaving the line of the crosswalk?	The presence of a median presents both challenges and opportunities for pedestrians: ▪ Raised medians may allow pedestrians to cross the intersection in stages.
❑	▪ If a reconstruction project, can the median be wide enough to provide pedestrian refuge?	▪ If used as a refuge area, pedestrians must be able to traverse the median without leaving the line of the crosswalk and have sufficient room for refuge.

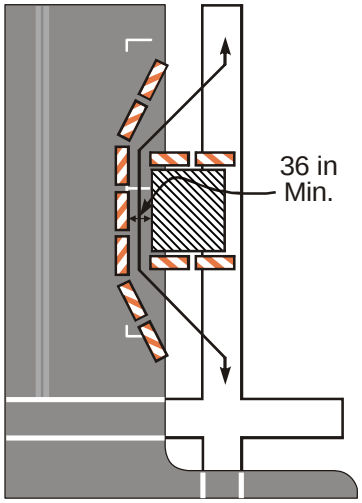
STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑ ❑ ❑ ❑	**TOPIC 4.6: Crosswalk – Pedestrian Refuge Island** ▪ If a refuge island is planned, does it have the following characteristics? o Minimum width for refuge is 5 ft, 6 ft is preferred. o Appropriate cut-through or ramp has level landing that provides a pedestrian pathway that has the pedestrian not leaving the line of the crosswalk. o Landscaping or other features will not obstruct visibility to and from pedestrians. o If at a signalized crossing, is it equipped with pedestrian actuation detectors to allow the pedestrian to recall the WALK phase if adequate time is not provided for a full pedestrian crossing?	▪ Pedestrian refuge islands (shown in *Urban Intersection Design Guide*) are commonly installed on wide streets where adequate crossing time cannot be provided or when the characteristics of the pedestrians indicate that some pedestrians might need more time, or when space is available. Pedestrian refuge should be considered in all reconstruction projects. Raised-curb corner islands and center channelizing or divisional islands can be used as refuge areas. ▪ Refuge islands enhance pedestrian comfort by reducing effective walking distances and pedestrian exposure to traffic. ▪ Islands should be a minimum of 5 ft wide to afford refuge to people in wheelchairs. ▪ A minimum 5 ft width should be cut-through the island for pedestrian passage, or curb ramps with a minimum 5 ft × 5 ft landing provided in the island. ▪ Whether the median is raised or depressed, access to the crossing island and median is to be functional and safe for all pedestrians. The island or median should be large enough to enable a wheelchair to wait on a level landing, or a cut-through design should be provided. The cut-through width should be the same as the complete width of the crosswalk. Cut-through designs should be graded to drain quickly and may also require additional maintenance such as sweeping, etc. Where the cut-through connects to the street, the edges of the cut-through should be aligned with the direction of the crosswalk for a minimum length of 2 ft.

STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 5.1: TCD – Markings	
❑	▪ Identify the type of crosswalk markings needed at each crossing (e.g., none, standard, high-visibility, etc.).	Pavement markings are governed by the Texas *Manual on Uniform Traffic Devices* (TMUTCD), which provides specifications on the design and placement of markings installed within the public right-of-way. ITE has published a *Traffic Control Devices Handbook* to provide additional guidelines and information with respect to the MUTCD. A recent Transit Cooperative Research Program/National Cooperative Highway Research Program (TCRP/NCHRP) project (*7*) developed guidelines that can be used in selecting pedestrian crossing treatments for unsignalized intersections and midblock locations (*Guidelines for Pedestrian Crossing Treatments*).
❑	▪ If the marked crosswalk is at an uncontrolled location on a multilane road, has the use of advance yield or stop lines been considered?	
❑	▪ If the crossing has large number of high-seat vehicles (e.g., large trucks or buses) and school-age pedestrians or wheelchair users, drivers may have difficulties seeing the shorter users. Consider locating the stop line in advance of the crosswalk by 10 ft or more.	

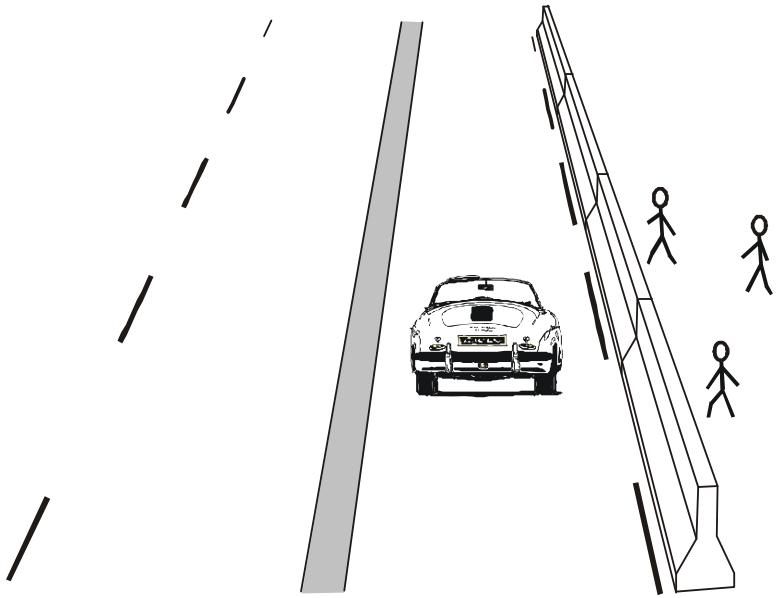
STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 5.2: TCD – Signs	
❑	▪ If an advance yield or stop line is used, these greater setbacks may benefit from a supplemental sign such as YIELD HERE TO PEDESTRIANS. Have such signs been considered?	Signing is governed by the TMUTCD, which provides specifications on the design and placement of traffic control signs installed within the public right-of-way. ITE has published a *Traffic Control Devices Handbook* to provide additional guidelines and information with respect to the MUTCD. A recent TCRP/NCHRP project (*7*) developed guidelines that can be used in selecting pedestrian crossing treatments for unsignalized intersections and midblock locations (*Guidelines for Pedestrian Crossing Treatments*).
❑	▪ Pedestrians rely on way finding information, just as motorists do. Are appropriate pedestrian signs included in the project?	
❑	▪ Do signs have a minimum mounting height of 7 ft?	
	TOPIC 5.3: TCD – Street Name Signs	
❑	▪ Can pedestrians read the street name sign?	Most street name signs adequately serve most pedestrians. However, there are situations where pedestrians cannot read signs mounted for automobile drivers. The AASHTO *Ped Guide* recommends: ▪ On one-way streets, signs should face both ways, as foot traffic will be approaching from both directions. ▪ Signs that are mounted high on mast arms over the roadway may need to be supplemented with conventional, smaller signs on the street corners.

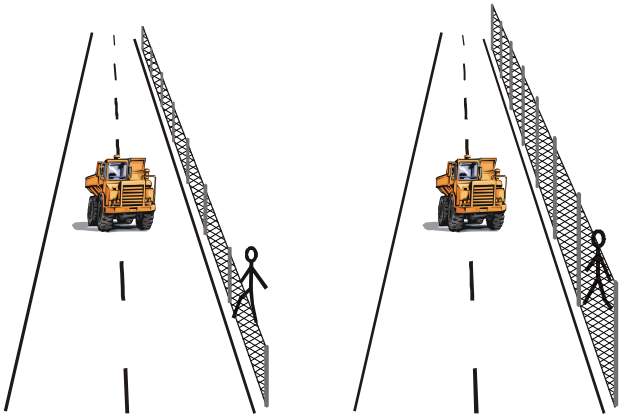
STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 5.4: TCD – Signals	
❑	▪ Was a walking speed that reflects the capabilities of expected pedestrians within the project used to time the signals in the project?	Following are recommended practices for pedestrian signal control design from the AASHTO *Ped Guide*: ▪ Pedestrian signal controls should be located within reasonable proximity of the curb ramp and crosswalk and should be predictably located throughout a jurisdiction (see Exhibit 4-7 in the AASHTO *Ped Guide*). ▪ Buttons for different crossings should clearly indicate which crossing direction is controlled. If practical, a separate pole may be used for each button. ▪ Pedestrians who use wheelchairs should be able to operate the button from a level landing rather than the sloped surface of a ramp. Therefore, there should be a 3 ft × 4 ft level surface centered on each control for a forward or side approach, as appropriate (Texas requires 4 ft × 4 ft as shown in Figure 2-2). ▪ If a forward approach is provided, the button should be located in the same vertical plane as the leading edge of the clear ground space; if a side approach is planned, the clear ground space should be within 10 inches horizontally of the button. ▪ To ensure that the bar or button is mounted within allowable reach ranges, a maximum height of 3.5 ft is recommended.
❑	▪ Is a level surface of appropriate size available at the pedestrian signal button?	
❑	▪ Check that each pedestrian signal button is appropriately located.	
❑	▪ The AASHTO *Ped Guide* provides the following guidelines for handling motor vehicles and pedestrians within a coordinated signal system: o Use fixed-time pedestrian signals with concurrent pedestrian phasing and pretimed signals. o Use actuated pedestrian signals when pedestrian volumes are very light and when crossing times limit the vehicle movement timings.	

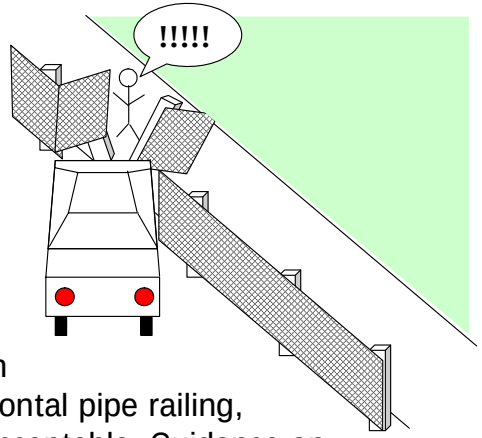
STAGE 2: PROJECT ASSESSMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 5.5: TCD – Accessible Signals	
❑	▪ Will an accessible signal be included?	Designers are encouraged to consult with pedestrians with vision impairments and/or orientation and mobility specialists to determine the most appropriate device for the location. For further information refer to: ▪ TMUTCD ▪ *Accessible Pedestrian Signals* (U.S. Access Board. May 1998. available at http://www.access-board.gov/) ▪ *Accessible Pedestrian Signals: Synthesis and Guide to Best Practice* (Transportation Research Board, prepared as part of NCHRP Project 3-61. May 2003)

STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT			
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**	
	TOPIC 1: Temporary Traffic Control Plans		
❑	▪ Were provisions for effective continuity of accessible paths for pedestrians incorporated into the Temporary Traffic Control (TTC) process?	The needs and control of all road users (motorists, bicyclists, and pedestrians) through a TTC zone shall be an essential part of highway construction (TMUTCD, Section 6C.01). TMUTCD, Section 6D provides additional information on pedestrian and worker safety. TMUTCD Figures 6H-28 and 6H-29 show typical TTC device usage and techniques for pedestrian movement through work zones (see example in Figure 3-1).	 **Figure 3-1. Portion of TMUTCD Figure 6H-28**

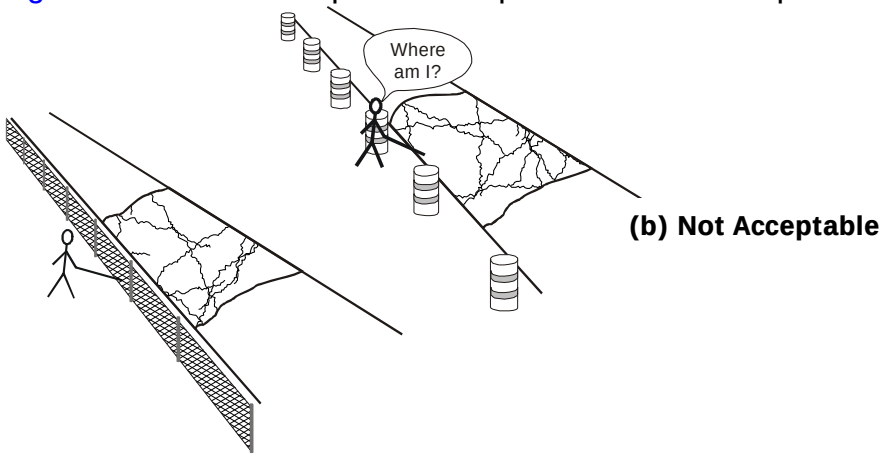
STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 2: General Considerations for Pedestrian Pathway Planning	
	▪ Per the TMUTCD, consider the following three items when planning for pedestrians in TTC zones:	Assess how pedestrians will approach, cross, or depart the work area during each phase of construction. ▪ A pedestrian route should not be blocked and/or moved for non-construction activities such as parking for vehicles and equipment.
❑	o Pedestrians should not be led into conflicts with work site vehicles, equipment, and operations.	▪ Access to the work space by workers and equipment across pedestrian walkways should be minimized because the access often creates unacceptable changes in grade, and rough or muddy terrain, and pedestrians will tend to avoid these areas by attempting non-intersection crossings where no curb ramps are available.
❑	o Pedestrians should not be led into conflicts with vehicles moving through or around the work site.	▪ If movement by work vehicles and equipment across designated pedestrian paths is necessary, the movement should be controlled by flaggers or temporary traffic control. Staging or stopping of work vehicles or equipment and materials along the side of pedestrian path should be avoided, since it encourages movement of workers, equipment, and materials across the pedestrian paths.
❑	o Pedestrians should be provided with a reasonable safe, convenient, and accessible path that replicates as nearly as practical the most desirable characteristics of the existing sidewalk(s).	

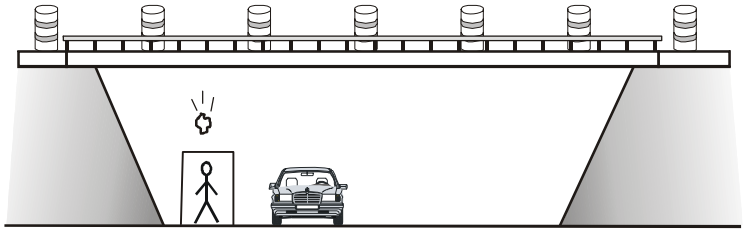
STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 3: Pedestrian Diversion Route Selection Considerations	
❑	▪ If pedestrians must be diverted from their normal path, select route based on the following priorities: 1. a parking lane next to the work site, 2. a closed travel lane next to the work site (if a multilane street), or 3. sidewalk or other path across the street.	In some cases, a temporary barrier between traffic and the pedestrian detour route may be needed (see Figure 3-2).  **Figure 3-2. Example of Temporary Barrier**
❑	▪ If the pedestrian path is rerouted to closer proximity of traffic, a temporary traffic barrier may be needed.	

STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 4: Separating Pedestrians and the Construction Zone	
❑	▪ Have excavations or dropoffs that exist near the pedestrian pathway received positive protection?	Barriers to prevent pedestrians from entering the work areas should be constructed of wood or other nonbendable material (tape, rope or plastic chain is not adequate) in order to be discerned by pedestrians with vision impairments. Temporary work on sidewalks (e.g., utility openings, vaults, and sidewalk reconstruction) also needs to be barricaded.
❑	▪ Consider pedestrian fences or other protective barriers to prevent pedestrian access into a construction site.	When used, pedestrian fences should be 8 ft high to discourage people from climbing the fences (see Figure 3-3). If chain link fences are used, a large SIDEWALK CLOSED/DETOUR sign or other sign should be mounted at eye height to increase its conspicuity for pedestrians with vision impairments.  **Figure 3-3. Examples of Low and High Fence Heights**

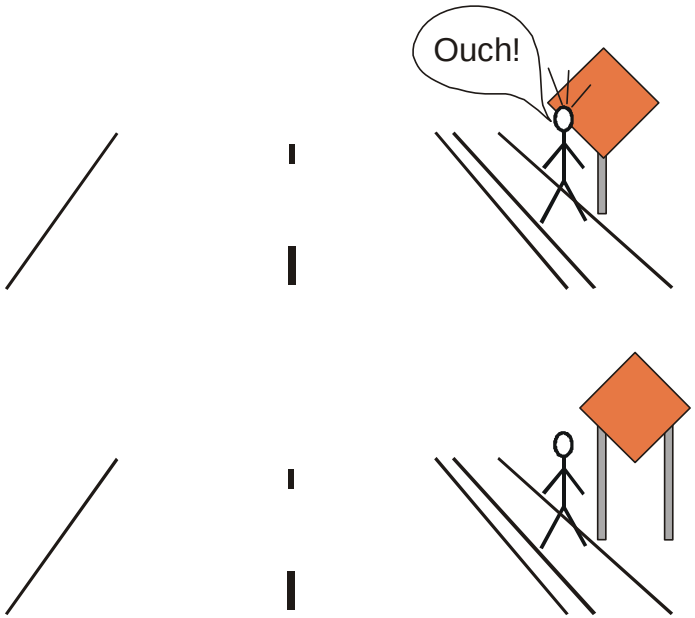
STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 5: Separating Pedestrians and Vehicles	
❑	▪ Barriers may be needed due to increased risk for vehicle intrusion into temporary pedestrian pathway.	Per the AASHTO *Pedestrian Guide*: If used, the barrier must be of sufficient strength to avoid intrusion by an impacting vehicle into the pedestrian space (see Figure 3-4). **Figure 3-4. Breaking Fence**  For work zones adjacent to high-speed traffic, continuous concrete barriers are recommended. Wooden railing, chain-link fencing with horizontal pipe railing, and other similar systems are not acceptable. Guidance on acceptable barriers is in the AASHTO *Roadside Design Guide*. Short, intermittent barrier segments should be avoided and upstream ends of the system should be flared or protected with impact attenuators properly fastened to the longitudinal barrier.
❑	▪ If used, verify that appropriate barrier and anchor conditions have been specified based on acceptable lateral deflection of barrier into work area.	
❑	▪ If barricades or channelizing devices are used to direct pedestrians, ensure that they are detectable by the visually impaired (see Topic 3-8).	Per TMUTCD Section 6F.66, longitudinal channelizing devices may be used for pedestrian traffic control, and if used, they should be interlocked to delineate or channelize flow and not allow pedestrians to stray from the channelizing path. Although they may give the appearance of being formidable obstacles, they have not met the crashworthy requirements for temporary traffic barriers and, therefore, should not be used to provide positive protection for obstacles, or provide positive protection for pedestrians and workers from vehicular impacts.

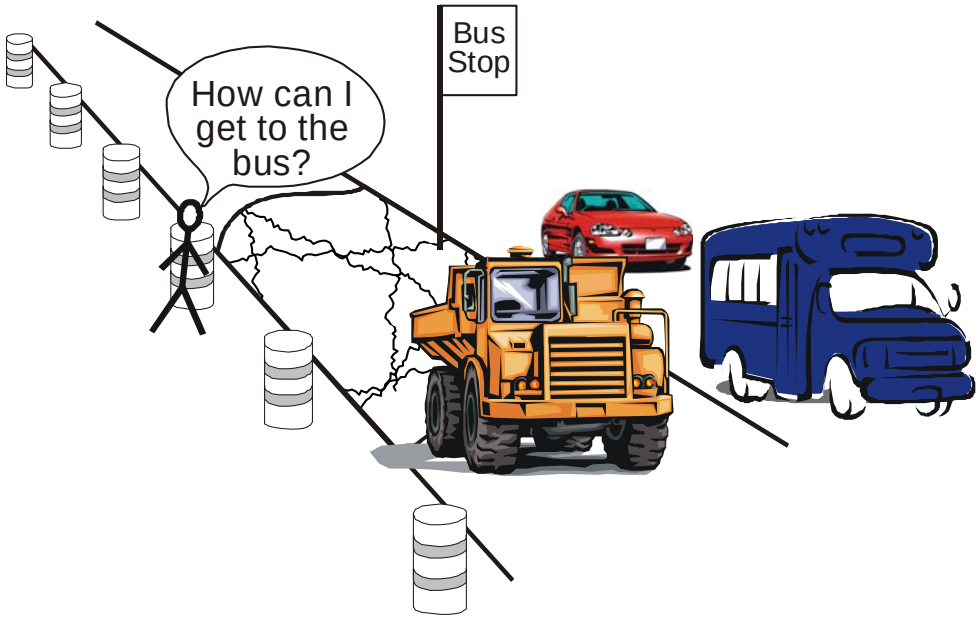
STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑ ❑ ❑	**TOPIC 6: Pedestrian Pathway Width** ▪ Strive to provide 5 ft wide pedestrian pathways through and around work areas. ▪ Verify that construction signs and other construction traffic control devices will be located so as to not narrow the pedestrian route to below 4 ft. ▪ Sidewalks should not be designated as a storage facility for construction equipment, worker's vehicles, signs, barricades, or cones.	For a final design, the width of the sidewalk is to be 5 ft per the Texas *Roadway Design Manual* (Chapter 2, Section 6), when insufficient space is available to locate street fixtures outside the 5 ft minimum clear width, the width may be reduced to 4 ft for a length of 2 ft maximum, provided that reduced width segments are separated by at least 5 ft in length. These dimensions are illustrated on sheet 3 of the Pedestrian Facilities Standard Sheet (PED-05) in the Placement of Street Fixtures diagram (see also Figure 2-3). Per the TMUTCD (Section 6D-02), when it is not possible to maintain a minimum width of 5 ft throughout the entire length of the pedestrian pathway, a 5 ft × 5 ft passing space should be provided at least every 200 ft, to allow individuals in wheelchairs to pass.
❑	**TOPIC 7: Pedestrian Pathway Surface** ▪ The surface of the pedestrian route is to be smooth.	Per the TMUTCD, a smooth, continuous hard surface should be provided throughout the entire length of the temporary pedestrian facility. There should be no curbs or abrupt changes in grade or terrain that could cause tripping or be a barrier to wheelchair use.

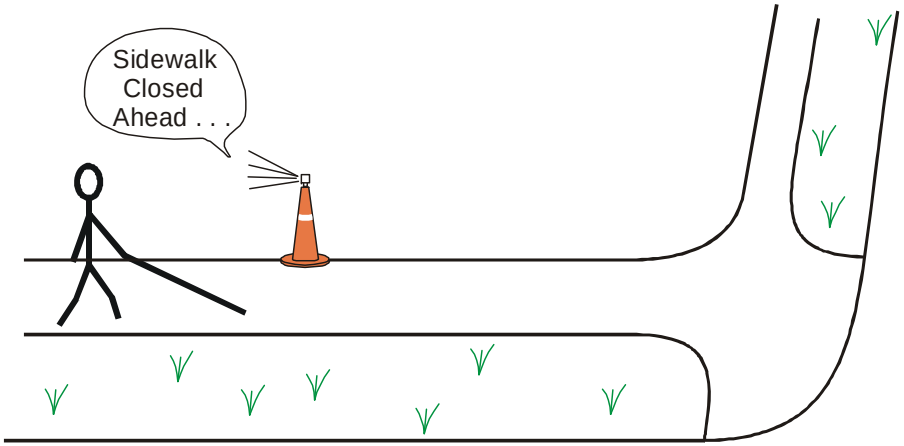
STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 8: Detectable Edging for Pedestrians	Examples of acceptable detectable edging and edging characteristics for pedestrians: ▪ prefabricated lightweight sections of plastic, metal, or other suitable materials that are interconnected and fixed in place to form a continuous edge with a bottom rail no higher than 6 inches above the ground surface, ▪ continuous temporary traffic barrier or longitudinal channelizing devices placed along the edge of the sidewalk or walkway that provides a pedestrian edging at ground level, and ▪ chain link or other fencing equipped with a continuous bottom rail being no higher than 6 inches above the ground surface. Figure 3-5 shows examples of acceptable and not acceptable edging.
❑	▪ Ensure that the pedestrian pathway edge can always be detected, even by pedestrians who are visually impaired.	
❑	▪ Channelizing devices need to be detectable by pedestrians with visual disabilities (including those with low vision).	
❑	▪ Edging used on the devices must match the adjacent devices (e.g., orange, white, or yellow).	 **Figure 3-5. Examples of Detectable Edging**

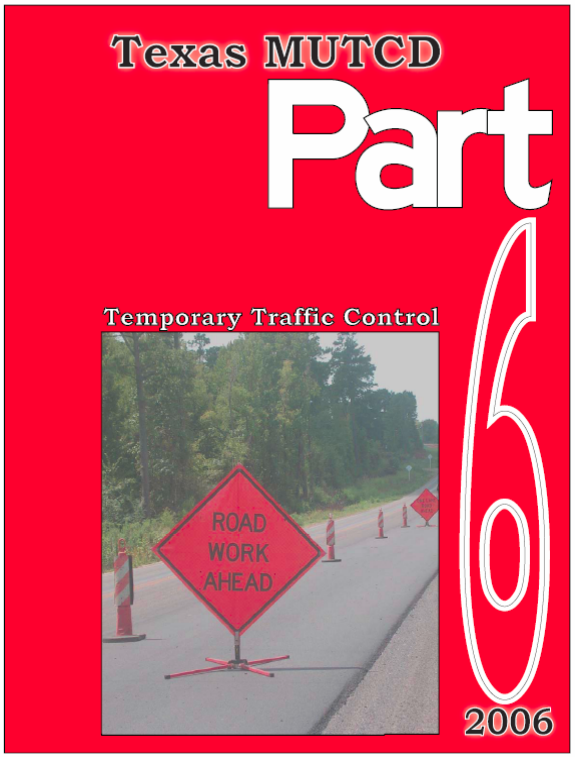
STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 9: Canopied Walkway for Pedestrian Route	Per the AASHTO *Ped Guide*: Covered/screened walkways should be sturdily constructed and adequately lit for nighttime use, with a well-defined travel route and ramps, as required. External lighting and diagonal white and orange stripes on the exterior of the pedestrian walkway may be needed when placed next to traffic. Figure 3-6 shows an example of where a canopied walkway may be needed.
❑	▪ Verify whether falling debris or other features of the work area necessitate a canopied walkway to protect pedestrians from falling debris.	
❑	▪ Verify that walkways intended for use at night are adequately lighted.	 **Figure 3-6. Example of Need for Canopied Walkway**
	TOPIC 10: Sight Lines	
❑	▪ Determine if adequate sight lines exist between pedestrians and drivers at intersections and other potential conflict points.	For each phase construction, check the design to ensure no pedestrian-vehicle sight line obstructions exist due to: ▪ safety fences, ▪ boundary fences, ▪ street furniture, ▪ parked cars, ▪ signs, ▪ bridge abutments, ▪ queued vehicles, ▪ work vehicles or equipment (parked or moving), or ▪ other local features.
❑	▪ Verify that barriers and channelizing devices used to define pedestrian pathways are not less than 36 inches in height.	

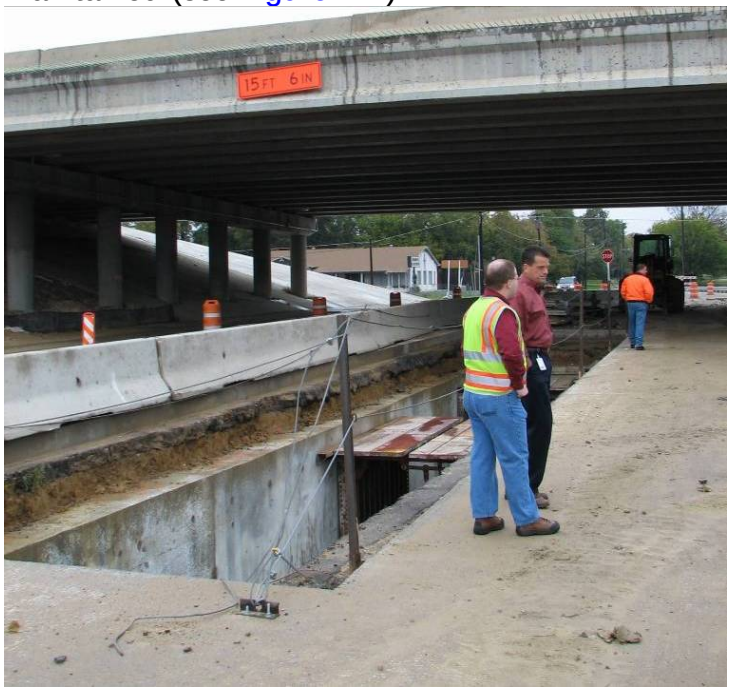
STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 11: Pedestrian Information Needs	
❑	▪ Verify that advance information about sidewalk closures and detours are provided where appropriate.	Research within TxDOT Project 0-5237 identified that work area information needs for pedestrians include the following: ▪ On advance information signs, provide approximate distances to closure based on number of blocks or feet measurement, as appropriate for the site, so pedestrians are not confronted with a midblock work sites that will induce them to attempt walking around the work zone or making a midblock crossing. ▪ Use of orange signs with black text showed increased compliance with stated information or directions. ▪ Use of "use other side" action phrasing is recommended as it was intuitively understood by pedestrians.
❑	▪ Verify that clear and positive guidance information through and around work area is provided.	
❑	▪ Verify that information guiding pedestrians back to original route past the work area is provided where needed.	
	TOPIC 12: Other Intersection Needs	
❑	▪ Verify that temporary crosswalks are added where needed.	Per the TMUTCD, engineering judgment should be used to determine if pedestrian signals or accessible pedestrian signals should be considered for crossings along an alternate route.
❑	▪ Verify that traffic signal adjustments (i.e., pedestrian clearance, accessible pedestrian modifications) have been included when needed.	

STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 13: Mitigate Pedestrian Pathway Temporary Obstructions	Per the TMUTCD, signs and other devices mounted lower than 7 ft above the temporary pedestrian pathway should not project more than 4 inches into accessible pedestrian facilities (see Figure 3-7). Ballast for the devices should not extend into the pedestrian pathway
❑	▪ Verify that scaffolding and other construction fencing adjacent to pedestrian pathway does not have bars or supports that protrude into the clear head space for pedestrians.	
❑	▪ Verify that diamond-shaped warning signs do not protrude into the clear head space for pedestrians.	 **Figure 3-7. Example of Sign Protruding within Pedestrian Pathway**

STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 14: Access to Transit Stops, Businesses, Residences, etc.** ▪ Is access provided to pedestrian generators (e.g., transit stops, businesses, etc.)?	Is access maintained to and from adjacent pedestrian generators? Is access maintained through an intersection? Figure 3-8 shows an example where access was not provided to a bus stop.  **Figure 3-8. Example of Access Needed to Bus Stop**

STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 15: Accommodating Visually- and Mobility-Impaired Pedestrians during Construction	
❑	▪ Verify that audio information messages are provided where needed along the pedestrian pathway.	Information about construction zones that affect pedestrian circulation must be provided in ways and formats usable by all. Proximity-activated voice messages (see Figure 3-9) can be paired with visible signage and markings to inform of detours and re-routings; detectable pedestrian barriers and channelizing devices can identify alternate or protected routes. Outreach through neighborhood and blindness organizations may be helpful. TxDOT report 5237-1 (*8*) provides recommendations regarding the design of audio messages to be used in work zone situations.
❑	▪ Verify that barriers and barricades are detectable by visually-impaired pedestrians.	
❑	▪ Verify that the pedestrian pathway does not present impediments to mobility-impaired pedestrians.	 **Figure 3-9. Example of a Proximity-Activated Voice Message**

STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 16: Accommodating the Needs of All Pedestrians ▪ To accommodate the needs of pedestrians, including those with disabilities, the TMUTCD lists the following:	Full text is provided on page 6D-4 of the TMUTCD (Section 6D.02). 
❑	o Provide continuity of accessible path.	
❑	o Provide access to temporary transit stops.	
❑	o Have effective communication to pedestrians with disabilities.	
❑	o Have a continuous detectable edging when channelization is used to delineate pedestrian pathway.	
❑	o Provide smooth and continuous hard surface.	
❑	o Provide the width of the existing pedestrian facility for the temporary facility, if practical.	
❑	o Revise signs and other devices that are mounted lower than 7 ft so that they do not project more than 4 inches into pedestrian facilities.	

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
PEDESTRIAN ROUTE		
	TOPIC 1: Inspection of Temporary Traffic Control Zone	
❑	▪ Inspect the work zone to determine if effective pedestrian temporary traffic control is maintained.	Per TMUTCD, the highway agency in charge of the TTC zone should regularly inspect the activity area so that an effective pedestrian TTC is maintained (see Figure 4-1).  **Figure 4-1. TTC Should Be Regularly Inspected**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW			
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**	
❑	**TOPIC 2: Identification of Pedestrian Route** ▪ Check that the pedestrian access route is easily recognized under likely operating conditions (e.g., heavy traffic or poor visibility conditions). Are the pedestrian routes clearly marked (e.g., signs, barricades, non-visual cues, etc.)? Check advance, transition, work area, and exit information. If additional information is desired, identify what is needed to improve the situation.	If the access route is not clearly defined, or if directions are not provided to pedestrians, they will likely make their own path wherever it is most convenient for them (see Figure 4-2). The new sidewalk on the left (Figure 4-3) appears to be complete, but there is no guidance to pedestrians to indicate which route is appropriate to take. In actuality, the new sidewalk is not complete but instead leads into the work zone. The new sidewalk should be blocked by barricades until it is ready for use.	 **Figure 4-2. Example of Bicyclist Making Own Path**  **Figure 4-3. Pedestrian Access Route Not Easily Determined**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 3: Interface	
❑	▪ Check transition between old and new alignment, that the road and pedestrian facility are readable and do not create uncertainty at the point of transition.	The transition between old and new should be smooth and well-marked, so that users are able to make simple decisions and travel through the area easily (see Figure 4-4).
❑	▪ Check for the need for additional signs and/or markings at the interface between the project and the existing facility.	 **Figure 4-4. Example of Transition Areas**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 4: Construction Barrier	 **Figure 4-5. Example of Dropoff**  **Figure 4-6. Lack of Continuous Barrier**  **Figure 4-7. Pedestrian Walking along the Dropoff**
❑	▪ Do the barriers between the construction zone and the pedestrian route provide adequate pedestrian protection, including protection from adjacent construction, dropoffs, falling debris, etc.?	Concrete barriers are used to separate vehicles from the dropoff shown in Figure 4-5; however, the lack of an adequate, alternative pedestrian route and the lack of continuous barrier on one side of the work zone (Figure 4-6) may have factored in the pedestrian's decision to walk behind the barriers (Figure 4-7).
❑	▪ Do the barriers clearly communicate the work zone limits?	
❑	▪ Check effectiveness of screening of adjacent development and other special features if present.	

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 5: Barrier between Pedestrians and Vehicular Traffic	
❑	▪ Do the barriers between the pedestrian route and the vehicles provide adequate pedestrian protection?	Pedestrians need to be guided away from vehicular traffic and protected from intrusions into the pedestrian access route. The barrels in Figure 4-8 provide guidance for sighted pedestrians, but not for the visually impaired due to the lack of a continuous bottom edge. Also, barrels are not a crashworthy barrier when struck by a vehicle. Note that the fence supports may be a tripping concern for pedestrians with low vision, or other normally sighted pedestrians who are not paying attention, or when the path is crowded.  **Figure 4-8. Revised Pedestrian Route**

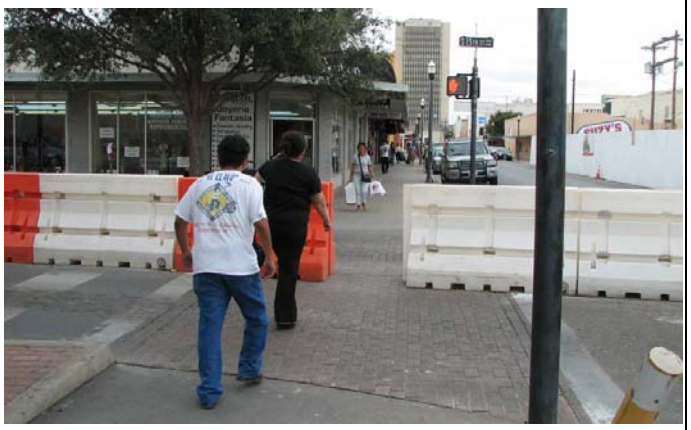
STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 6: Device for Barrier** ▪ Do all the selected devices used to channelize pedestrians meet TMUTCD requirements? For example: o Are devices detectable to users of long canes, e.g., continuous detectable bottom rail (bottom no higher than 6 inches) and top rail (top no lower than 36 inches) with no gaps between individual barricades? o Are barricade rail supports and skids not projecting into pedestrian circulation routes more than 4 inches between 27 inches and 80 inches from the surface? o Does ballast not extend into the accessible passage width?	Barriers with gaps at ground level can mislead those with low vision who use canes to search for obstacles (Figure 4-9). Barriers that are too tall prohibit drivers and pedestrians from seeing each other.  **Figure 4-9. Barrier with Gaps**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 7: Pedestrian Route – Width** ▪ Check that the needed clear width of the pedestrian route is maintained.	 **Figure 4-10. Stop Sign on Sidewalk** The position of the stop sign in Figure 4-10 reduces the width of the pedestrian route to approximately 2.5 ft in that section.  **Figure 4-11. Construction Materials on Sidewalk** Do not store or leave construction material on the pedestrian route as shown in Figure 4-11.

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 8: Pedestrian Route – Surface	
❑	▪ Check that the surface is clear and smooth.	The amount of dirt and sediment on the sidewalk in Figure 4-12 (portion near the underpass) may encourage pedestrians to walk in the street.
❑	▪ Check for adequate skid resistance on pedestrian route.	
❑	▪ Check for and remove loose stones on pedestrian route.	
❑	▪ Check for and remove loose stones on roadway that could be thrown onto the pedestrian route by passing vehicles.	 **Figure 4-12. Dirt on Sidewalk**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 9: Pedestrian Route – at Driveways	
❑	▪ Check that driveways are safe for intended use. In particular, verify adequacy of design, location, and visibility.	The pedestrian detour route in Figure 4-13 uses a sidewalk that has a clear, level path across multiple driveways.  **Figure 4-13. Example of Pedestrian Detour Route**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 10: Pedestrian Route – Street Furniture** ▪ Check that the location of any street furniture is satisfactory (does not obstruct the pedestrian route) during the construction period.	The detour sign at the closed sidewalk in Figure 4-14 directs pedestrians between a waste receptacle and a fire hydrant.  **Figure 4-14. Street Fixtures near a Closed Sidewalk**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW			
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**	
❑	**TOPIC 11: Pedestrian Route – Obstacles** ▪ Check that there are no obstacles on the pedestrian route. For example, is the pedestrian route clear of: o mud, o dirt, o poles, o construction materials, o barriers used for other elements of construction (i.e., are not being used to close the pedestrian route), and o etc.?	 **Figure 4-15. Example of Obstacle on Sidewalk**  **Figure 4-16. Another Example of Obstacle on Sidewalk**  **Figure 4-17. Construction Material on Sidewalk**	Figures 4-15 and 4-16 show examples of potential hazards along a pedestrian route. Figure 4-17 shows construction materials stored on the sidewalk, as well as sediment and debris carried over from the work area. The opening in the vehicle barricade shown in Figure 4-18 is too narrow for a wheelchair or a person using crutches. It is also too narrow for a person with a guide or assistant.  **Figure 4-18. Example of Opening in Vehicle Barricade**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 12: Pedestrian Route – Protruding Objects	
❑	▪ Check that there are no objects protruding into the pedestrian route.	This temporary sign in Figure 4-19 protrudes beyond its base into the pedestrian route.  **Figure 4-19. Example of Temporary Sign**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 13: Pedestrian Route – Roadside Hazards	
❑	▪ Check that no roadside hazard has been installed or overlooked.	The trench to access the utility conduit in Figure 4-20 has been covered until work resumes.
❑	▪ Check that no natural feature (e.g., bank rock or major tree) results in loss of visibility.	 **Figure 4-20. Example of Covered Trench**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 14: Pedestrian Route – Lighting	
❑	▪ Is adequate lighting available for the pedestrian route?	The route below an overpass shown in Figure 4-21 is somewhat dark during daylight hours; pedestrians will have difficulties in finding their way on this path if nighttime lighting is not provided.  **Figure 4-21. Example of Underpass**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑ ❑ ❑	**TOPIC 15: Pedestrian Route – Drainage** ▪ Does the pedestrian route, including curb ramps, adequately drain? ▪ Check drainage of road; will any flow into a pedestrian facility or crossing? ▪ Check effectiveness of any treatment put in place to counter climatic conditions.	The temporary fencing at the right of Figure 4-22 has not prevented water and mud from running onto the sidewalk after rain. Mud is also on the sidewalk just prior to the barricade in Figure 4-23.  **Figure 4-22. Example of Mud on Sidewalk**  **Figure 4-23. Another Example of Mud on Sidewalk**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 16: Pedestrian Route – Alternate Circulation Path	
❑	▪ If an alternate circulation path is being used, does the new route include accessible features present in the existing pedestrian route? For example, check width, slope, etc.	The alternate circulation path shown in Figure 4-24 is narrower than the original sidewalk being replaced, and the surface is very rough.  **Figure 4-24. Example of Alternate Circulation Path**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 17: Pedestrian Route – Curb Ramps	
❑	▪ Are curb ramps provided when the route (either existing or alternate path) crosses a curb?	A new curb ramp was installed at the location shown in Figure 4-25 early in the construction project to meet pedestrian needs at the sidewalk closure.  **Figure 4-25. Curb Ramp Installed for Use during Construction**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 18: Pedestrian Route – Landings	
❑	▪ Are level landings provided as needed?	Landings at the site shown in Figure 4-26 and other channelizing islands may have up to a 2 percent grade. Both approaches to this landing have gaps in the surface joints that would impede wheelchair users.  **Figure 4-26. Landing on a Channelizing Island**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 19: Pedestrian Route – Crosswalks	
❑ ❑	▪ Are crosswalks clearly marked, especially when relocated? ▪ Are drivers aware of the potential of crossing pedestrians at an intersection?	The crosswalk shown in Figure 4-27 was intended to be removed, as most of the markings outside of the barrels have been eradicated and the pedestrian signal head on the far side of the intersection has been bagged; however, the remaining markings on the near side still communicate to pedestrians that they can use this path as a crosswalk. With no alternative path or detour defined, this is the most likely route pedestrians will use to cross this street.  **Figure 4-27. Example of Non-Eradicated Crosswalk Markings**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 20: Signing and Markings	
❑	▪ Check that all signs and pavement markings are correctly in place.	In Figure 4-28 the ballast keeping this temporary sign post in place either has been moved or has leaked out of the sandbag, causing the sign post to fall. The sign is now damaged and doesn't provide advance notice to drivers or cyclists.
❑	▪ Check that appropriate signs have been used.	
❑	▪ Check that signs will remain visible at all times.	
❑	▪ Check that old delineation (signs, markings) has been removed or covered and is not likely to confuse pedestrians.	
❑	▪ Check that markings as installed have sufficient contrast with the surfacing and are clear of debris.	 **Figure 4-28. Temporary Sign on Roadway**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 21: Signals	
❑	▪ Check alignment and general correctness of installation and that all applicable signal heads are visible from each approach at the appropriate distances.	This pedestrian signal head in Figure 4-29 is partially obscured by tree branches and by the construction fence.
❑	▪ Check the safe operation of signals and associated equipment.	 **Figure 4-29. Example of Partially Obscured Pedestrian Signal**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 22: Sidewalk Closing** ▪ If a sidewalk is closed, are the appropriate traffic control devices present? (TMUTCD Figure 6H-28 or 6H-29 can aid in identifying needed signs and devices.)	Figure 4-30 is an example of an unacceptable method for informing pedestrians that the sidewalk is closed. A sign has been provided to inform pedestrians, but it is nonstandard and it is difficult to read. The barricade in Figure 4-31 is more effective in providing a physical impediment to travel on the closed sidewalk; however, it shows another unacceptable method of closing the sidewalk. Though it is common to attach signs to barricades, TxDOT Barricade and Construction Standards prohibit it; BC(4)-03 states that "Barricades shall NOT be used as sign supports."  **Figure 4-30. Example of Sidewalk Closed Sign**  **Figure 4-31. Example of Sidewalk Closed Sign on Barricade**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 23: Access to Construction Zone	
❑	▪ If access to the construction zone crosses a pedestrian route, is the route cleared of mud or nearby equipment that would cause pedestrians to avoid the area?	The sidewalk in Figure 4-32 is obliterated by the heavy-vehicle access into the construction zone; no barrier restricts access to the zone, and no alternate path is specified.  **Figure 4-32. Example of Sidewalk near Construction Zone**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 24: Access to Transit Stops, Businesses, Residences, etc.** ▪ Is access maintained to pedestrian generators?	In Figure 4-33 there is no defined passenger waiting area adjacent to the bus stop at left. The position of the bus stop requires passengers to either wait in the work zone near the path of construction equipment or, as shown in this picture, at the edge of the work zone far away from the bus stop.  **Figure 4-33. No Defined Waiting Area for Bus Stop**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
❑	**TOPIC 25: Sight Lines** ▪ Are the sight lines for pedestrians-motorists within a pedestrian route sufficient such that both can identify the other when turning or crossing?	The location of the dumpster in Figure 4-34 may limit the view between a driver and a pedestrian on the sidewalk, especially if the vehicle is turning into the driveway.  **Figure 4-34. Sight Distance Concerns Due to Location of Dumpster**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** ▪ **ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 26: Consideration of all Pedestrians	
❑	▪ Check that all users are considered within the project area.	Using the pedestrian signal call button in Figure 4-35 requires stepping over a pile of fill material and standing on an access cover; the button is not accessible by those with disabilities.  **Figure 4-35. Example of Difficult to Reach Pedestrian Call Button**

STAGE 4: CONSTRUCTION IN-FIELD REVIEW		
CHECK	**TOPIC** **▪ ISSUES TO BE CONSIDERED**	**EXAMPLES or DISCUSSION**
	TOPIC 27: Pedestrian Route – Continuous and Accessible	
❑	▪ Are pedestrian routes continuous and accessible by all pedestrians?	The sidewalk in Figure 4-36 is adjacent to a waste pile, which contributes debris that is scattered across the surface. In addition, the sidewalk is posted as closed in the background, but there is no detectable barricade to restrict access, nor is there any indication to pedestrians where the accessible alternate route is located.  **Figure 4-36. Example of Debris on Sidewalk**

APPENDIX: CHECKLIST

STAGE 1: FEASIBILITY	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
❑	**TOPIC 1: Scope of Project** ▪ What is the general type of project? A broad appreciation of the scope of the project will assist in addressing topics on this checklist.
❑ ❑ ❑	**TOPIC 2: Beyond Scope of Project** ▪ Identify what, beyond the immediate project, may have a major effect on operations within the work zone. ▪ Identify major pedestrian generators, including housing or shopping centers, that may have a significant influence on the staging of the construction. ▪ Determine if these pedestrian generators are sources of pedestrians with special needs (i.e., adult day care centers, etc.).
❑ ❑ ❑	**TOPIC 3: Existing Pedestrian Routes** ▪ Where are pedestrians walking prior to the construction? ▪ How will the construction affect their route? ▪ How will the pedestrians be accommodated at driveways?
❑ ❑	**TOPIC 4: Pedestrian Characteristics** ▪ What are the anticipated pedestrian volumes, both walking parallel to work area and crossing near work area? ▪ What ages are expected?
❑ ❑ ❑ ❑	**TOPIC 5: Vehicle Traffic Characteristics** ▪ What kind of traffic is expected within the work zone (passenger cars, trucks, buses, bikes, etc.)? ▪ What are the anticipated vehicle volumes parallel to pedestrian routes and crossing the pedestrian routes? ▪ What is the operating speed for each roadway within the project limits? ▪ If the pedestrian route is moved to be nearer a higher-speed road, consider if additional or different treatments are needed (e.g., concrete barrier between traffic and pedestrians during construction or wider buffer for additional separation between pedestrians and vehicles).

STAGE 1: FEASIBILITY	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
	TOPIC 6: Design Volume for Vehicles, Bicycles, and Pedestrians
❑	▪ Check the appropriateness of the design for the volume and traffic characteristics, including the effects of unusual proportions of heavy vehicles, cyclists, and pedestrians.
❑	▪ Check the possible effects of unforeseen or large increases in traffic volume or changes in the traffic characteristics.
❑	▪ For large projects, check the possible effects staging may have on changing the proportion of turning vehicles at specific intersections within the project.
	TOPIC 7: Transit
❑	▪ Is transit operating within or near to the project limits?
❑	▪ If so, identify transit stop locations within project.
	TOPIC 8: Climatic Conditions
❑	▪ What do the weather records or local experience indicate regarding potential concerns with weather?
❑	▪ Were portions of the road or pedestrian access route under water during heavy rainfalls?
❑	▪ What locations may be prone to icy or snowy conditions?
	TOPIC 9: Impact of Continuity with Existing Network
❑	▪ Check for potential problems where the proposed project blends with or adjoins the existing network.
❑	▪ Check for potential problems for alternate routes near the project.

STAGE 2: PROJECT ASSESSMENT	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
	TOPIC 1.1: Overview – Inclusion of Pedestrian Routes (also called Sidewalks) into Project
❑	▪ Should a sidewalk be included in the project?
	TOPIC 1.2: Overview – Visibility
❑	▪ Review sight restrictions caused by horizontal or vertical curves.
❑	▪ Review sight restrictions caused by roadway elements, for example, bridge components or signs.
❑	▪ Review sight restrictions to or from pedestrians caused by temporary situations, for example, queued vehicles or parked cars.
	TOPIC 1.3: Overview – Landscaping
❑	▪ Will the design be free of sight line obstructions immediately after landscaping is installed and also after the landscaping matures?
	TOPIC 1.4: Overview – Utilities
❑	▪ Does the design adequately deal with buried and overhead utilities?
❑	▪ Has the location of fixed objects been checked, including the position of poles?
	TOPIC 1.5: Overview – Access to Major Developments
❑	▪ Does the design handle accesses to major adjacent generators of pedestrians? For example, are wider sidewalks needed?
	TOPIC 1.6: Overview – Effect of Cross-Sectional Variation
❑	▪ Is the design free of variations in cross section that may have an adverse affect on pedestrians?
	TOPIC 1.7: Overview – Effect of Departures from Standards
❑	▪ Are there any approved departures from standards which affect pedestrians and their safety?
	TOPIC 1.8: Overview – Project/Existing Interfaces
❑	▪ Have implications for safety of the pedestrian been considered at each interface between the project and the existing facility and within the project?
❑	▪ Does the interface occur well away from any hazard (e.g., crest, bend or where poor visibility/distractions may occur)?

STAGE 2: PROJECT ASSESSMENT	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
	TOPIC 2.1: Sidewalk – Location
	▪ Was a buffer space between traveled way and sidewalk considered? Preference according to the *Roadway Design Manual* is for:
❑	o 3 ft or greater, with curb and gutter, especially when adjacent to high speed traffic.
❑	o Between ditch and right-of-way line for rural sections without curb and gutter.
	TOPIC 2.2: Sidewalk – Width
	▪ Is the appropriate sidewalk width present? Sidewalk width guidance:
❑	o If a sidewalk is present, the width is to be at least 5 ft.
❑	o If sidewalk is immediately adjacent to the curb, a sidewalk width of 6 ft is desirable.
❑	o If within commercial area or areas with concentrated pedestrian traffic, a sidewalk width of 8 ft may be appropriate.
❑	o If reduced width is required at an obstacle, the width may be reduced to 4 ft for a maximum length of 2 ft provided that reduced-width segments are separated by at least 5 ft in length.
❑	o When necessary to cross a driveway while maintaining the maximum 2 percent cross slope, sidewalk width may be reduced to 4 ft, see TxDOT Standard Sheet PED-05, sheet 3.
	TOPIC 2.3: Sidewalk – Slope
❑	▪ Does the cross slope of the sidewalk not exceed 1:50 (2 percent)?
❑	▪ Because of construction tolerances, do the plans show 1.5 percent to avoid exceeding the 2 percent limit when complete?
	TOPIC 2.4: Sidewalk – Surface Treatment
❑	▪ Is the sidewalk surface treatment smooth?
❑	▪ Is the sidewalk surface stable, firm, and slip resistant?
	TOPIC 2.5: Sidewalk– at Driveways
❑	▪ Consider diverting the sidewalk around the apron when it is immediately adjacent to the curb or roadway to avoid a non-conforming cross slope at driveway.
❑	▪ Has each driveway been checked for adequate sight distances?
	TOPIC 2.6: Sidewalk – Street Furniture
❑	▪ Check the location of street furniture on the pedestrian route.

STAGE 2: PROJECT ASSESSMENT	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
❑	**TOPIC 2.7: Sidewalk – Obstacles** ▪ Check the location of obstacles on the pedestrian route.
❑	**TOPIC 2.8: Sidewalk – Protruding Objects** ▪ Check the location of protruding objects on the pedestrian route.
❑	**TOPIC 2.9: Sidewalk – Lighting** ▪ Is adequate lighting available for the pedestrian route?
❑ ❑ ❑	**TOPIC 2.10: Sidewalk – Drainage** ▪ Will the pedestrian routes adequately drain? ▪ Has possibility of flooding been adequately addressed, including overflow from surrounding or intersecting drains and water courses? ▪ Can the effects on pedestrians from the placement of drainage grates be minimized?
❑	**TOPIC 2.11: Absence of Sidewalks** ▪ If no sidewalks are provided, resulting in the shoulder being the pedestrian route, do the shoulders satisfy the requirements for a pedestrian route?
❑ ❑	**TOPIC 3.1: Curb Ramp – Inclusion** ▪ Are curb ramps to be included in the project? ▪ Is a curb ramp with level landing provided whenever a new or upgraded public sidewalk crosses a curb?
❑ ❑ ❑	**TOPIC 3.2: Curb Ramp – Location** ▪ If at least one corner is served by a public sidewalk or a pedestrian route, then all corners of the intersection served by a crosswalk should have curb ramps or blended transitions. ▪ Is the curb ramp located to prevent obstruction by parked vehicles? ▪ Does any built-up curb ramp not project into traffic lanes or accessible parking aisles, if present?
❑	**TOPIC 3.3: Curb Ramp – Selection** ▪ Use the following order of preference when selecting curb ramps: 1. perpendicular, 2. parallel or combination, and 3. diagonal.

STAGE 2: PROJECT ASSESSMENT	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
	TOPIC 3.4: Curb Ramp – Design ▪ Is the appropriate curb ramp design present? Requirements for curb ramp design include:
❑	o Is the bottom of the curb ramp run wholly contained within the markings of the crosswalk?
❑	o Is the minimum width of the curb ramp 4 ft, exclusive of the flared sides?
❑	o Is a flared side of appropriate slope provided when a side of a curb ramp is contiguous with a public sidewalk or walking surface?
❑	o Is the maximum grade of the curb ramp 8.3 percent (1:12 slope)?
❑	o Is the maximum cross slope of the curb ramp 2.0 percent? Can a flatter grade be used?
❑	o Does the counter slope of the gutter or road surface at the foot of the curb ramps not exceed 1:20?
❑	o Is the algebraic difference in grade between the curb ramp and the street less than or equal to 11 percent (see Figure 3-29 of the AASHTO *Ped Guide* for additional information)?
	o Is the detectable warning present?
❑	o Are the curb ramps free of obstructions? Utility poles, traffic signs, signals, signal control boxes,
❑	drainage structures, pedestrian call buttons, and street name signs are to be carefully located so they do not obstruct the installation of curb ramps or the pedestrian's ability to safely cross the road.
❑	o Can manhole covers, grates, and obstructions not be located within the curb ramp, maneuvering area, or landing?
	TOPIC 3.5: Curb Ramp – Landings
❑	▪ Is the landing a 5 ft × 5 ft square or 5 ft diameter circle?
❑	▪ Does the landing have less than 2 percent cross slope in all directions?
❑	▪ Does the landing provide continuous passage in each direction of travel?
	TOPIC 3.6: Curb Ramp – Drainage
❑	▪ Will the ramps adequately drain?
❑	▪ Are the effects of grates minimum (see discussion under Topic 2-2.10)?
	TOPIC 4.1: Crosswalk – Overview
❑	▪ Does the crosswalk design follow the good intersection crossing design attributes provided in the AASHTO *Ped Guide*?

STAGE 2: PROJECT ASSESSMENT	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
	TOPIC 4.2: Crosswalk – Design
❑	▪ Does the crosswalk meet the cross slope requirements of a sidewalk?
❑	▪ Are adequate sight distances and clear sight lines provided at crosswalks?
❑	▪ If colored or textured crosswalk is used, is the surface smooth, nonslip, and visible?
	TOPIC 4.3: Crosswalk – Information Needs
❑	▪ Are the information needs of blind and low-vision pedestrian considered at the intersections?
	TOPIC 4.4: Crosswalk – Crossing Time
❑	▪ Are there pedestrians needing a longer crossing time at an intersection?
	TOPIC 4.5: Crosswalk – Medians
❑	▪ If a median is planned for the roadway, can pedestrians traverse the median without leaving the line of the crosswalk?
❑	▪ If a reconstruction project, can the median be wide enough to provide pedestrian refuge?
	TOPIC 4.6: Crosswalk – Pedestrian Refuge Island
	▪ If a refuge island is planned does it have the following characteristics?
❑	o Minimum width for refuge is 5 ft, 6 ft is preferred.
❑	o Appropriate cut-through or ramp with level landing that provides a pedestrian pathway that has the pedestrian not leaving the line of the crosswalk.
❑	o Landscaping or other features will not obstruct visibility to and from pedestrians.
❑	o If at a signalized crossing, is it equipped with pedestrian actuation detectors to allow the pedestrian to recall the WALK phase if adequate time is not provided for a full pedestrian crossing?
	TOPIC 5.1: TCD – Markings
❑	▪ Identify the type of crosswalk markings needed at each crossing (e.g., none, standard, high visibility, etc.).
❑	▪ If the marked crosswalk is at an uncontrolled location on a multilane road, has the use of advance yield or stop lines been considered?
❑	▪ If the crossing has large number of high-seat vehicles (e.g., large trucks or buses) and school-age pedestrians or wheelchair users, drivers may have difficulties seeing the shorter users. Consider locating the stop line in advance of the crosswalk by 10 ft or more.

STAGE 2: PROJECT ASSESSMENT	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
	TOPIC 5.2: TCD – Signs
❑	▪ If an advance yield or stop line is used, these greater setbacks may benefit from a supplemental sign such as YIELD HERE TO PEDESTRIANS. Have such signs been considered?
❑	▪ Pedestrians rely on way finding information, just as motorists do. Are appropriate pedestrian signs included in the project?
❑	▪ Do signs have a minimum mounting height of 7 ft?
	TOPIC 5.3: TCD – Street Name Signs
❑	▪ Can pedestrians read the street name sign?
	TOPIC 5.4: TCD – Signals
❑	▪ Was a walking speed that reflects the capabilities of expected pedestrians within the project used to time the signals in the project?
❑	▪ Is a level surface of appropriate size available at the pedestrian signal button?
❑	▪ Check that each pedestrian signal button is appropriately located.
❑	▪ The AASHTO *Ped Guide* provides the following guidelines for handling motor vehicles and pedestrians within a coordinated signal system: o Use fixed-time pedestrian signals with concurrent pedestrian phasing and pretimed signals. o Use actuated pedestrian signals when pedestrian volumes are very light and when crossing times limit the vehicle movement timings.
	TOPIC 5.5: TCD – Accessible Signals
❑	▪ Will an accessible signal be included?

STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
❑	**TOPIC 1: Temporary Traffic Control Plans** ▪ Were provisions for effective continuity of accessible paths for pedestrians incorporated into the Temporary Traffic Control (TTC) process?
❑ ❑ ❑	**TOPIC 2: General Considerations for Pedestrian Pathway Planning** ▪ Per the TMUTCD, consider the following three items when planning for pedestrians in TTC zones: o Pedestrians should not be led into conflicts with work site vehicles, equipment, and operations. o Pedestrians should not be led into conflicts with vehicles moving through or around the work site. o Pedestrians should be provided with a reasonable safe, convenient, and accessible path that replicates as nearly as practical the most desirable characteristics of the existing sidewalk(s).
❑ ❑	**TOPIC 3: Pedestrian Diversion Route Selection Considerations** ▪ If pedestrians must be diverted from their normal path, select route based on the following priorities: 1. a parking lane next to the work site, 2. a closed travel lane next to the work site (if a multilane street), or 3. sidewalk or other path across the street. ▪ If the pedestrian path is rerouted to closer proximity of traffic, a temporary traffic barrier may be needed.
❑ ❑	**TOPIC 4: Separating Pedestrians and the Construction Zone** ▪ Have excavations or dropoffs that exist near the pedestrian pathway received positive protection? ▪ Consider pedestrian fences or other protective barriers to prevent pedestrian access into a construction site.
❑ ❑ ❑	**TOPIC 5: Separating Pedestrians and Vehicles** ▪ Barriers may be needed due to increased risk for vehicle intrusion into temporary pedestrian pathway. ▪ If used, verify that appropriate barrier and anchor conditions have been specified based on acceptable lateral deflection of barrier into work area. ▪ If barricades or channelizing devices are used to direct pedestrians, ensure that they are detectable by the visually impaired (see Topic 3-8).

STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
	TOPIC 6: Pedestrian Pathway Width
❑	▪ Strive to provide 5 ft wide pedestrian pathways through and around work areas.
❑	▪ Verify that construction signs and other construction traffic control devices will be located so as to not narrow the pedestrian route to below 4 ft.
❑	▪ Sidewalks should not be designated as a storage facility for construction equipment, worker's vehicles, signs, barricades, or cones.
	TOPIC 7: Pedestrian Pathway Surface
❑	▪ The surface of the pedestrian route is to be smooth.
	TOPIC 8: Detectable Edging for Pedestrians
❑	▪ Ensure that the pedestrian pathway edge can always be detected, even by pedestrians who are visually impaired.
❑	▪ Channelizing devices need to be detectable by pedestrians with visual disabilities (including those with low vision).
❑	▪ Edging used on the devices must match the adjacent devices (e.g., orange, white, or yellow).
	TOPIC 9: Canopied Walkway for Pedestrian Route
❑	▪ Verify whether falling debris or other features of the work area necessitate a canopied walkway to protect pedestrians from falling debris.
❑	▪ Verify that walkways intended for use at night are adequately lighted.
	TOPIC 10: Sight Lines
❑	▪ Determine if adequate sight lines exist between pedestrians and drivers at intersections and other potential conflict points.
❑	▪ Verify that barriers and channelizing devices used to define pedestrian pathways are not less than 36 inches in height.
	TOPIC 11: Pedestrian Information Needs
❑	▪ Verify that advance information about sidewalk closures and detours are provided where appropriate.
❑	▪ Verify that clear and positive guidance information through and around work area is provided.
❑	▪ Verify that information guiding pedestrians back to original route past the work area is provided where needed.

STAGE 3: TEMPORARY TRAFFIC CONTROL PLAN DEVELOPMENT	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
	TOPIC 12: Other Intersection Needs
❑	▪ Verify that temporary crosswalks are added where needed.
❑	▪ Verify that traffic signal adjustments (i.e., pedestrian clearance, accessible pedestrian modifications) have been included when needed.
	TOPIC 13: Mitigate Pedestrian Pathway Temporary Obstructions
❑	▪ Verify that scaffolding and other construction fencing adjacent to pedestrian pathway does not have bars or supports that protrude into the clear head space for pedestrians.
❑	▪ Verify that diamond-shaped warning signs do not protrude into the clear head space for pedestrians
	TOPIC 14: Access to Transit Stops, Businesses, Residences, etc.
❑	▪ Is access provided to pedestrian generators (e.g., transit stops, businesses, etc.)?
	TOPIC 15: Accommodating Visually- and Mobility-Impaired Pedestrians during Construction
❑	▪ Verify that audio information messages are provided where needed along the pedestrian pathway.
❑	▪ Verify that barriers and barricades are detectable by visually-impaired pedestrians.
❑	▪ Verify that the pedestrian pathway does not present impediments to mobility-impaired pedestrians.
	TOPIC 16: Accommodating the Needs of All Pedestrians
	▪ To accommodate the needs of pedestrians, including those with disabilities, the TMUTCD lists the following considerations (see TMUTCD Section 6D.02 for full text):
❑	o Provide continuity of accessible path.
❑	o Provide access to temporary transit stops.
❑	o Have effective communication to pedestrians with disabilities.
❑	o Have a continuous detectable edging when channelization is used to delineate pedestrian pathway.
❑	o Provide smooth and continuous hard surface.
❑	o Provide the width of the existing pedestrian facility for the temporary facility, if practical.
❑	o Revise signs and other devices that are mounted lower than 7 ft so that they do not project more than 4 inches into pedestrian facilities.

STAGE 4: CONSTRUCTION IN-FIELD REVIEW	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
❑	**TOPIC 1: Inspection of Temporary Traffic Control Zone** ▪ Inspect the work zone to determine if effective pedestrian temporary traffic control is maintained.
❑	**TOPIC 2: Identification of Pedestrian Route** ▪ Check that the pedestrian access route is easily recognized under likely operating conditions (e.g., heavy traffic or poor visibility conditions). Are the pedestrian routes clearly marked (e.g., signs, barricades, non-visual cues, etc.)? Check advance, transition, work area, and exit information. If additional information is desired, identify what is needed to improve the situation.
❑ ❑	**TOPIC 3: Interface** ▪ Check transition between old and new alignment, that the road and pedestrian facility are readable and do not create uncertainty at the point of transition ▪ Check for the need for additional signs and/or markings at the interface between the project and the existing facility.
❑ ❑ ❑	**TOPIC 4: Construction Barrier** ▪ Do the barriers between the construction zone and the pedestrian route provide adequate pedestrian protection, including protection from adjacent construction, dropoffs, falling debris, etc.? ▪ Do the barriers clearly communicate the work zone limits? ▪ Check effectiveness of screening of adjacent development and other special features if present.
❑	**TOPIC 5: Barrier between Pedestrians and Vehicular Traffic** ▪ Do the barriers between the pedestrian route and the vehicles provide adequate pedestrian protection?
❑	**TOPIC 6: Device for Barrier** ▪ Do all the selected devices used to channelize pedestrians meet TMUTCD requirements? For example: o Are devices detectable to users of long canes, e.g., continuous detectable bottom rail (bottom no higher than 6 inches) and top rail (top no lower than 36 inches) with no gaps between individual barricades? o Are barricade rail supports and skids not projecting into pedestrian circulation routes more than 4 inches between 27 inches and 80 inches from the surface? o Does ballast not extend into the accessible passage width?
❑	**TOPIC 7: Pedestrian Route – Width** ▪ Check that the needed clear width of the pedestrian route is maintained.

STAGE 4: CONSTRUCTION IN-FIELD REVIEW	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
❑ ❑ ❑ ❑	**TOPIC 8: Pedestrian Route – Surface** ▪ Check that the surface is clear and smooth. ▪ Check for adequate skid resistance on pedestrian route. ▪ Check for and remove loose stones on pedestrian route. ▪ Check for and remove loose stones on roadway that could be thrown onto the pedestrian route by passing vehicles.
❑	**TOPIC 9: Pedestrian Route – at Driveways** ▪ Check that driveways are safe for intended use. In particular, verify adequacy of design, location, and visibility.
❑	**TOPIC 10: Pedestrian Route – Street Furniture** ▪ Check that the location of any street furniture is satisfactory (does not obstruct the pedestrian route) during the construction period.
❑	**TOPIC 11: Pedestrian Route – Obstacles** ▪ Check that there are no obstacles on the pedestrian route. For example, is the pedestrian route clear of: o mud, o dirt, o poles, o construction materials, o barriers used for other elements of construction (i.e., are not being used to close the pedestrian route), and o etc.?
❑	**TOPIC 12: Pedestrian Route – Protruding Objects** ▪ Check that there are no objects protruding into the pedestrian route.
❑ ❑	**TOPIC 13: Pedestrian Route – Roadside Hazards** ▪ Check that no roadside hazard has been installed or overlooked. ▪ Check that no natural feature (e.g., bank rock or major tree) results in loss of visibility.
❑	**TOPIC 14: Pedestrian Route – Lighting** ▪ Is adequate lighting available for the pedestrian route?

STAGE 4: CONSTRUCTION IN-FIELD REVIEW	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
	TOPIC 15: Pedestrian Route – Drainage
❑	▪ Does the pedestrian route, including curb ramps, adequately drain?
❑	▪ Check drainage of road; will any flow into a pedestrian facility or crossing?
❑	▪ Check effectiveness of any treatment put in place to counter climatic conditions
	TOPIC 16: Pedestrian Route – Alternate Circulation Path
❑	▪ If an alternate circulation path is being used, does the new route include accessible features present in the existing pedestrian route? For example, check width, slope, etc.
	TOPIC 17: Pedestrian Route – Curb Ramps
❑	▪ Are curb ramps provided when the route (either existing or alternate path) crosses a curb?
	TOPIC 18: Pedestrian Route – Landings
❑	▪ Are level landings provided as needed?
	TOPIC 19: Pedestrian Route – Crosswalks
❑	▪ Are crosswalks clearly marked, especially when relocated?
❑	▪ Are drivers aware of the potential of crossing pedestrians at an intersection?
	TOPIC 20: Signing and Markings
❑	▪ Check that all signs and pavement markings are correctly in place.
❑	▪ Check that appropriate signs have been used.
❑	▪ Check that signs will remain visible at all times.
❑	▪ Check that old delineation (signs, markings) has been removed or covered and is not likely to confuse pedestrians.
❑	▪ Check that markings as installed have sufficient contrast with the surfacing and are clear of debris.
	TOPIC 21: Signals
❑	▪ Check alignment and general correctness of installation and that all applicable signal heads are visible from each approach at the appropriate distances.
❑	▪ Check the safe operation of signals and associated equipment.
	TOPIC 22: Sidewalk Closing
❑	▪ If a sidewalk is closed, are the appropriate traffic control devices present? (TMUTCD Figure 6H-28 or 6H-29 can aid in identifying needed signs and devices.)

STAGE 4: CONSTRUCTION IN-FIELD REVIEW	
CHECK	**TOPIC** **ISSUES TO BE CONSIDERED**
❑	**TOPIC 23: Access to Construction Zone** ▪ If access to the construction zone crosses a pedestrian route, is the route cleared of mud or nearby equipment that would cause pedestrians to avoid the area?
❑	**TOPIC 24: Access to Transit Stops, Businesses, Residences, etc.** ▪ Is access maintained to pedestrian generators?
❑	**TOPIC 25: Sight Lines** ▪ Are the sight lines for pedestrians-motorists within a pedestrian route sufficient such that both can identify the other when turning or crossing?
❑	**TOPIC 26: Consideration of all Pedestrians** ▪ Check that all users are considered within the project area.
❑	**TOPIC 27: Pedestrian Route – Continuous and Accessible** ▪ Are pedestrian routes continuous and accessible by all pedestrians?

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