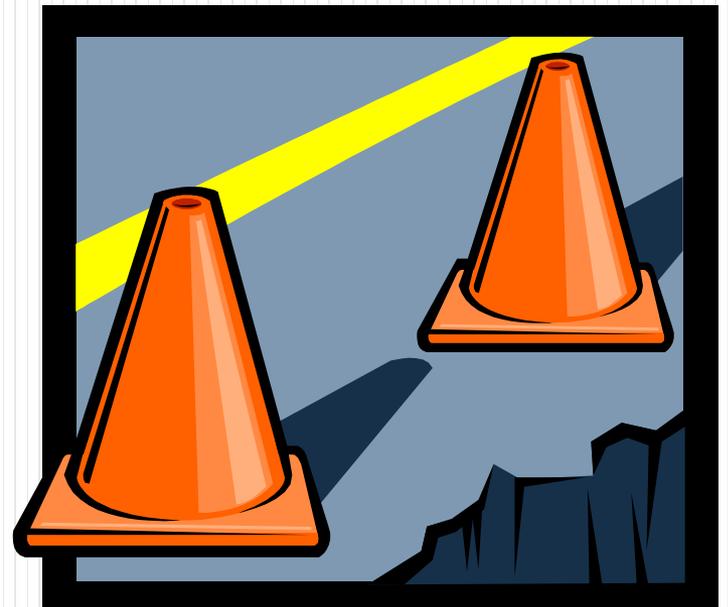


# Pedestrian Accessibility in Work Zones



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# Federal rules and regulations

- Americans with Disabilities Act (ADA)
  - 28 CFR Part 35
  - See “ADA Standards for Accessible Design” – USDOJ, 2010 – incorporates the 2004 ADAAG:

State and local government facilities must follow the requirements of the 2010 Standards, including both the Title II regulations at 28 CFR 35.151; and the 2004 ADAAG at 36 CFR part 1191, appendices B and D.



In the few places where requirements between the two differ, the requirements of 28 CFR 35.151 prevail.

# Federal rules and regulations

- Section 504 of the Rehabilitation Act
  - 49 CFR Part 27
  - See “ADA Standards for Transportation Facilities” — USDOT, 2006 — mostly applies to public transit facilities

# Federal rules and regulations

- 23 CFR Part 652: Pedestrian and Bicycle Accommodations
- 2009 MUTCD
  - Part 6D: Pedestrian requirements in temporary traffic control (TTC) zones
- AASHTO's "A Policy..." (green book)

*Pending – likely new standard:*

- Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)

# Federal rules and regulations

- MUTCD, ADAAG and AASHTO are standards that provide flexibility
- Safety should always be the primary concern for pedestrians in work zones
- Design should not discriminate against people with disabilities
- Responsibility is shared – do not ignore a problem

# Planning

- Construction staff and District representatives should weigh during the environmental phases for pedestrian issues
- Extra consideration should be made for vulnerable pedestrians during public input meetings
  - *Elderly*
  - *Schoolchildren*
  - *People with disabilities*
- Special equipment/accommodation needed?

# Design

MUTCD Chapter 6D– three fundamental principles of accessible design in work zones temporary traffic control (TTC) plans:

1. Pedestrians should not be led into direct conflicts with work site vehicles, equipment, or operations.
2. Pedestrians should not be led into direct conflicts with mainline traffic moving through or around the work site.
3. Pedestrians should be provided with a reasonably safe, convenient, and accessible path that **replicates as nearly as practical** the most desirable characteristics of the existing sidewalk(s) or footpath(s).

# Design

NDDOT Design Manual Section III-19.01:

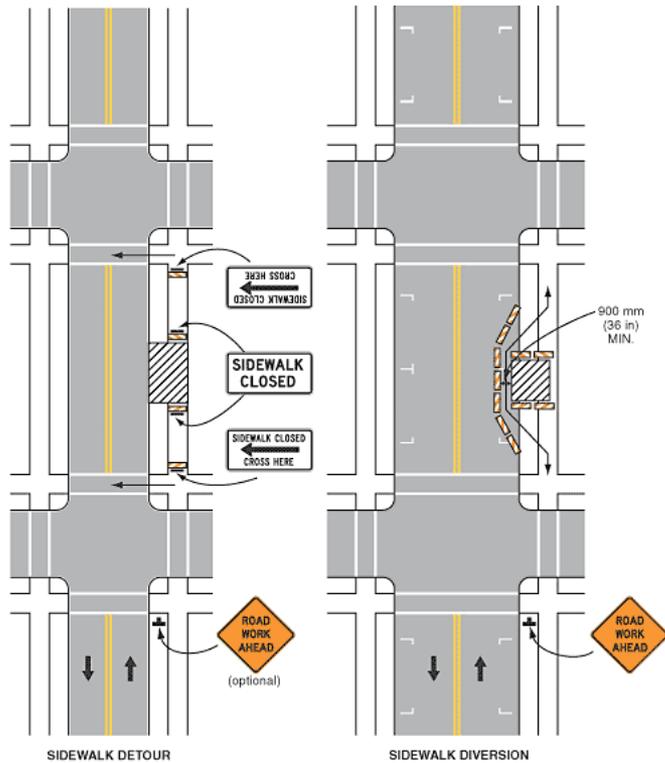
*“...if there are pedestrians in the project area, the plans must provide for their safe passage through the project.”*

- Scope of TTC will vary
- Routes should provide circuitous connectivity, avoid dead-ends
- Ensure detours connect to critical locations (transit stops, schools, public buildings)
- Handicapped parking spots should not be blocked
- ADAAG is required – PROWAG is better
- No NDDOT Standard Drawings for temporary pedestrian pathways

# Design

- MUTCD typicals:

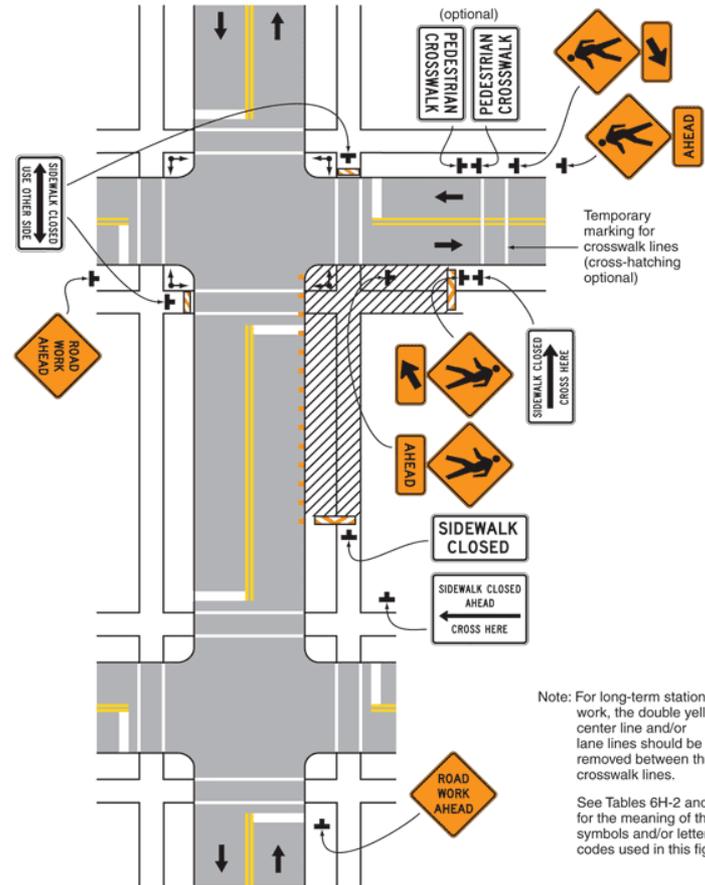
Figure 6H-28. Sidewalk Detour or Diversion (TA-28)



Typical Application 28

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Figure 6H-29. Crosswalk Closures and Pedestrian Detours (TA-29)



Typical Application 29

Note: For long-term stationary work, the double yellow center line and/or lane lines should be removed between the crosswalk lines.

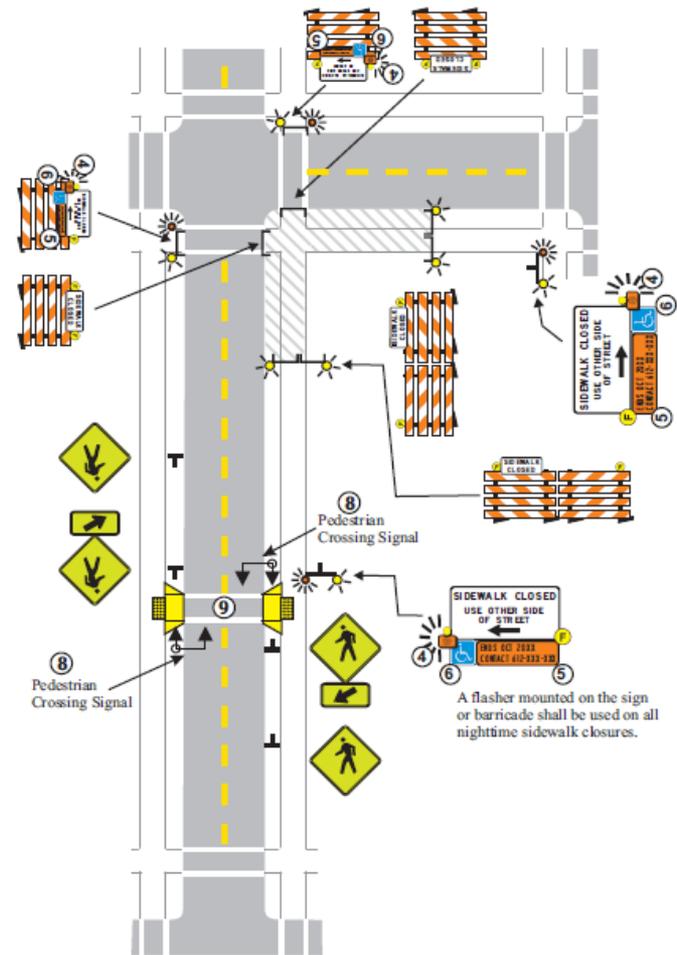
See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

# Design

- Local typicals:  
Minnesota  
(MnDOT MUTCD)

*-Note: this special "Type IV" barricade not crash tested — only used for guidance*

*-Note: special flasher*



**CROSSWALK CLOSURES AND  
PEDESTRIAN DETOURS**

LONG TERM

LAYOUT 6J-24b

# Design

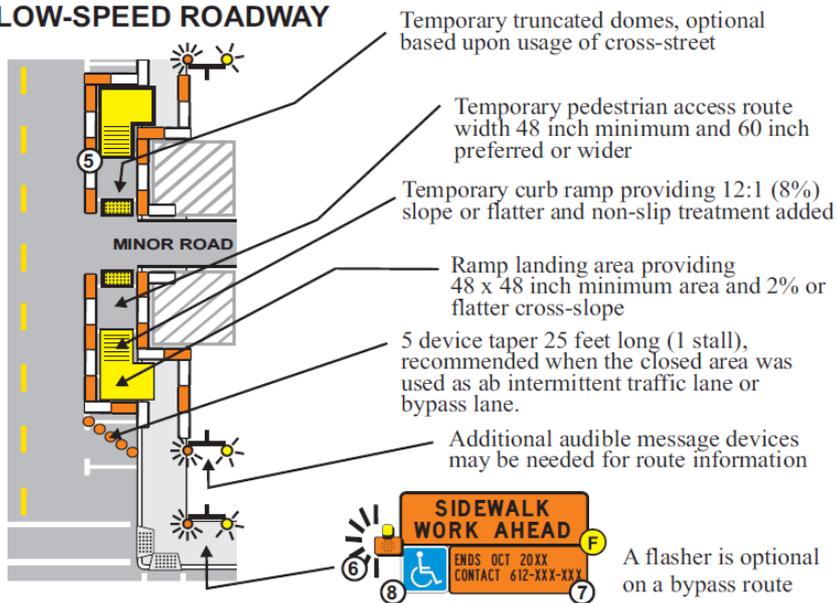
- Local typicals:

Minnesota

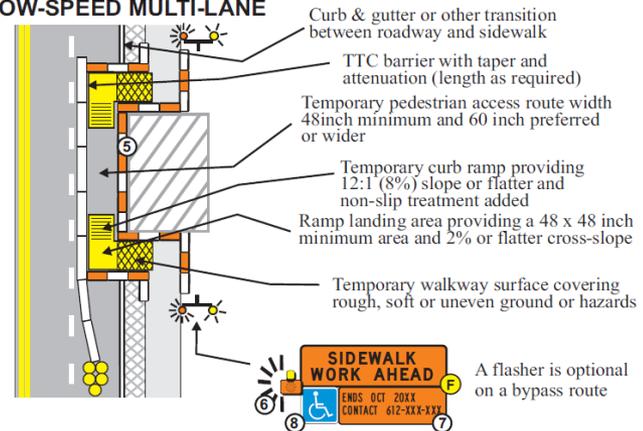
(MnDOT MUTCD)

*-Note: audible message option*

## LOW-SPEED ROADWAY



## HIGH-SPEED ROADWAY or LOW-SPEED MULTI-LANE



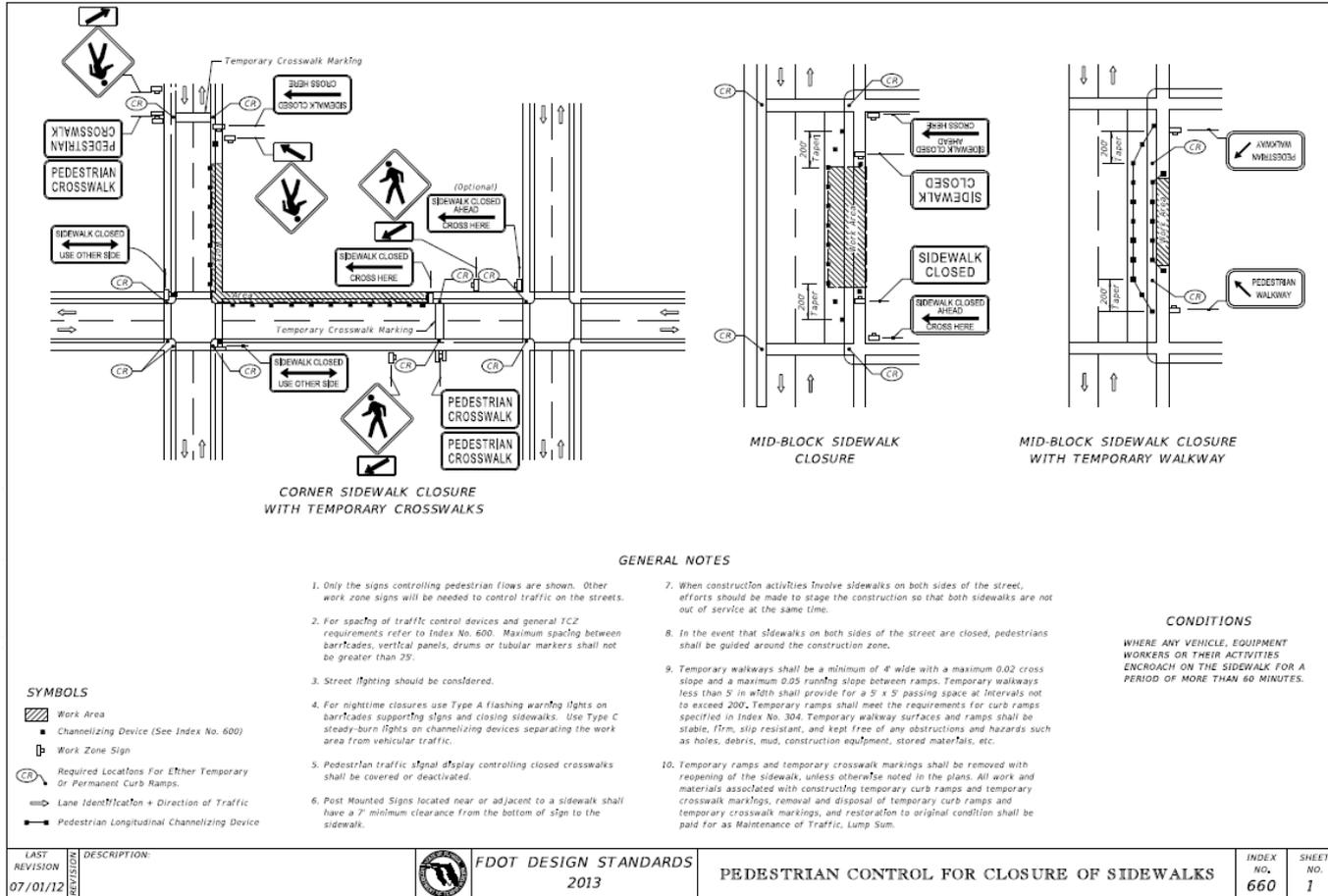
## SIDEWALK BYPASS

LONG TERM

LAYOUT 6J-25b

# Design

- Standard drawings: Florida DOT (index #660):



# Design

- Other states with local guidance:
  - Oregon DOT:
    - standard drawings and construction specs for temporary pedestrian access routes
  - Washington State DOT:
    - Detailed guidance for pedestrian access routes (PARs) in design manual section 1510.07
    - “Field Guide” for Accessible Public Rights of Way
  - Minnesota DOT:
    - Also has a Temporary Traffic Control Zone Layouts Field Manual

# Field deployment

- Channelizing devices:
  - Should not guide pedestrians into roadway
  - Joints should be closed and flush
  - Guiderails are recommended
  - Same-side traffic preferred



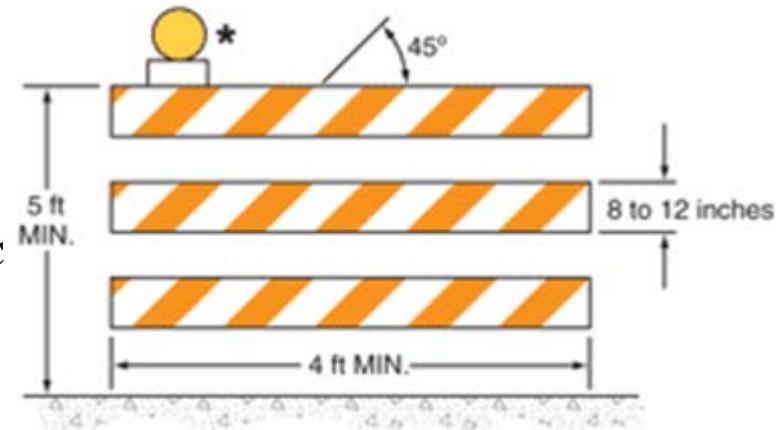
# Field deployment

- Channelizing devices:
  - When exposed to vehicular traffic:
    - Should provide positive protection to peds
    - Must have retroreflectivity or delineation on top and bottom surfaces on side of traffic
    - Should be crashworthy
  - If speed is 40 mph or more – provide positive protection with crash cushions or barriers (or consider detour)



# Field deployment

- Channelizing devices:
  - Must run entire width of a closure (sidewalk width) if used to block
  - MUTCD prohibits tape, rope, or plastic chain
  - Sign placement (closures) should be placed in advance at an accessible crossing point



**TYPE 3 BARRICADE \*\***

# Field deployment

## Surfaces:

- Generally – as clear and flat as possible
  - No debris, trash, mud, standing water
- Joints should be closed and flush
- Drainage grading should run perpendicular to the pathway
- 48” minimum path width – 60” recommended
  - Passing spaces at least every 200’ for width < 60”
  - Passing space = 5’ x 5’

# Field deployment

## Surfaces (cont'd):

- Clearance:
  - Min. 7-ft headroom
  - Side protrusions: no more than 4" into pathway
  - Avoid sharp edges
- Cross slope: no more than 2%

# Field deployment

## Edging:

- Should be provided throughout the length of the facility (not always feasible)
- Protrusion: at least 6” above path surface
- Bottom edge: no more than 2.5” above path surface

# Field deployment

## Ramps:

- 1:12 slope or flatter recommended
- No steeper than 1:8
- Ramp landings: 48"x48"

# Field deployment

## Handrails versus guiderails:

- Handrails:
  - Used for ambulatory assistance on pedestrian ramps per ADAAG
  - For 6" rise or 72" running length ramp
  - Must meet ADAAG standards for:
    - Bending stress, shear stress, and shear force tolerances
    - Width of rail and clearance around rail

# Field deployment

Handrails versus guiderails:

- Guiderails:
  - Just for visual and tactile guidance
  - Should be distinguished as non-weight bearing:
    - Semi-flexible
    - Non-rigid mounting
    - “Ungraspable” shape
  - Use with detectable edging
  - Best limited to routes through turns, curves, or crowd separation

# Field deployment

Handrails versus guiderails:

- Both:
  - 34"-38" high, on top of rail
  - 1.5" clearance behind, 18" clearance above
  - Rounded ends, or terminating at ground/wall/post

# Field deployment

## Overhead protection:

- Critical if there is a potential for falling debris
- At least 80"-84" of headroom recommended

## Audible warnings:

- Best practice when detectable barrier is not continuous
- Minnesota has design guidance

## Other:

- Signage should be clear and concise, easy to understand, large contrast – cognitive disabilities should be considered

# Problems?



# Problems?



# Problems?



# Construction Phase

- Nothing stopping construction staff from offering ambulatory assistance or route guidance to pedestrians
- If you see something, say something – change orders for pedestrian safety are usually okay
- Watch out for:
  - Lighting/visibility
  - Debris
  - Tripping hazards

# Construction Phase

- Pedestrians are not likely to back-track
- Is there anything pedestrians had before the work zone that is now unavailable?
- Safety, safety, safety

# Thanks!

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