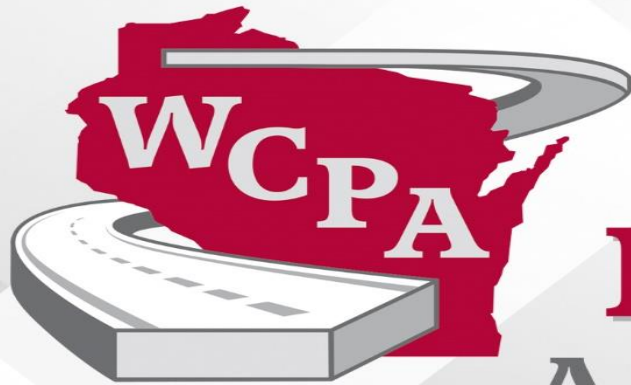


# 2024 ADA Conformance



WISCONSIN  
**CONCRETE  
PAVEMENT**  
ASSOCIATION

*Moving forward with concrete results*



# Introduction

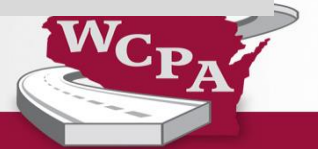
- Jackie Spoor, President
- Wisconsin Concrete Pavement Association



# DISCLAIMER:

The teachings contained here within this presentation are derived from guidance published by the United States of America Access Board. The Access Board has published new guidelines under the Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA) that address access to sidewalks and streets, crosswalks curb ramps, pedestrian signals, on-street parking, and other components of public right-of-way. These guidelines also review shared use paths, which are designed primarily for use by bicyclists and pedestrians for transportation and recreation purposes. The U.S. Access Board issues its final rule for accessibility guidelines for pedestrian facilities in public rights-of-way (PROWAG or guidelines). These guidelines are issued under Title II of the Americans with Disabilities Act of 1990 (ADA) and the Architectural Barriers Act of 1968 (ABA). Title II of the ADA applies to State and local government facilities, among others. The final rule is effective September 7, 2023.

The Wisconsin Concrete Pavement Association offers this presentation as our view and understanding of the proposed guidelines, but disclaims any, and all, liability regarding the application of these thoughts. PROWAG is a federal publication, and as such, is generally created to express the 'minimum' for compliance. Agencies throughout the country may at any time choose to propose their own set of rules that meet, or exceed, those established by the federal government. The material, thoughts, and opinions contained here within are only thoughts and opinions of the presenters themselves, and in no way should be construed as legal absolutions.



# ADA and PROWAG

- Congress passed the **Americans with Disabilities Act (ADA)** in 1990.
- U.S. Access Board's **Public Rights-of-Way Accessibility Guidelines (PROWAG)** issued in 2005
- ADA building regulations revised in 2010, effective March 2012
- U.S. Access Board issued its final rule for **Public Rights-of-Way Accessibility Guidelines (PROWAG)**, effective September 7, 2023.
  - These guidelines are issued under Title II of the Americans with Disabilities Act of 1990 (ADA) and the Architectural Barriers Act of 1968 (ABA).
  - Title II of the ADA applies to State and local government facilities, among others.
  - The ABA applies to facilities constructed or altered by or on behalf of the Federal Government, facilities leased by Federal agencies, and some facilities built with Federal funds.



# ADA and PROWAG

PROWAG guidelines are not legally enforceable until they are adopted by Department of Justice or Department of Transportation regulations, and by the four standard-setting agencies under the Architectural Barriers Act.

Thus, in the strictest sense, there are no benefits or costs associated with this final rule in itself, only in any future rulemakings that are based on PROWAG.



# Title II of Americans with Disabilities Act (ADA)



- **A civil rights law**
- **Prohibits discrimination** against people with disabilities in all aspects of life, including transportation
- **Compliance** not dependent on funding source
- **Covers State and Local Governments** and their agencies

**...whenever streets, roadways, or highways are *altered* to provide curb ramps where street level pedestrian walkways cross curbs**

# Why is ADA Compliance Important

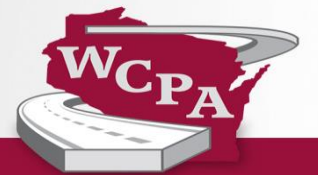


## The Human Factor:

- 1 of 5 Americans currently live with a Disability.
- Barriers prevent the disabled from safe travel.
  - ✓ Barriers also decrease safety for various other users.
- Excessive cross-slopes make travel exhausting too impossible.
  - ✓ 3% cross-slope requires 50% more exertion on a wheelchair users countering arm. Think about pushing a wheel barrel overloaded on one side.

## The Legal Factor:

- Failure to Comply has resulted in agencies nationwide receiving Court mandates to allocated up to 20% of their annual budgets to ADA improvements.

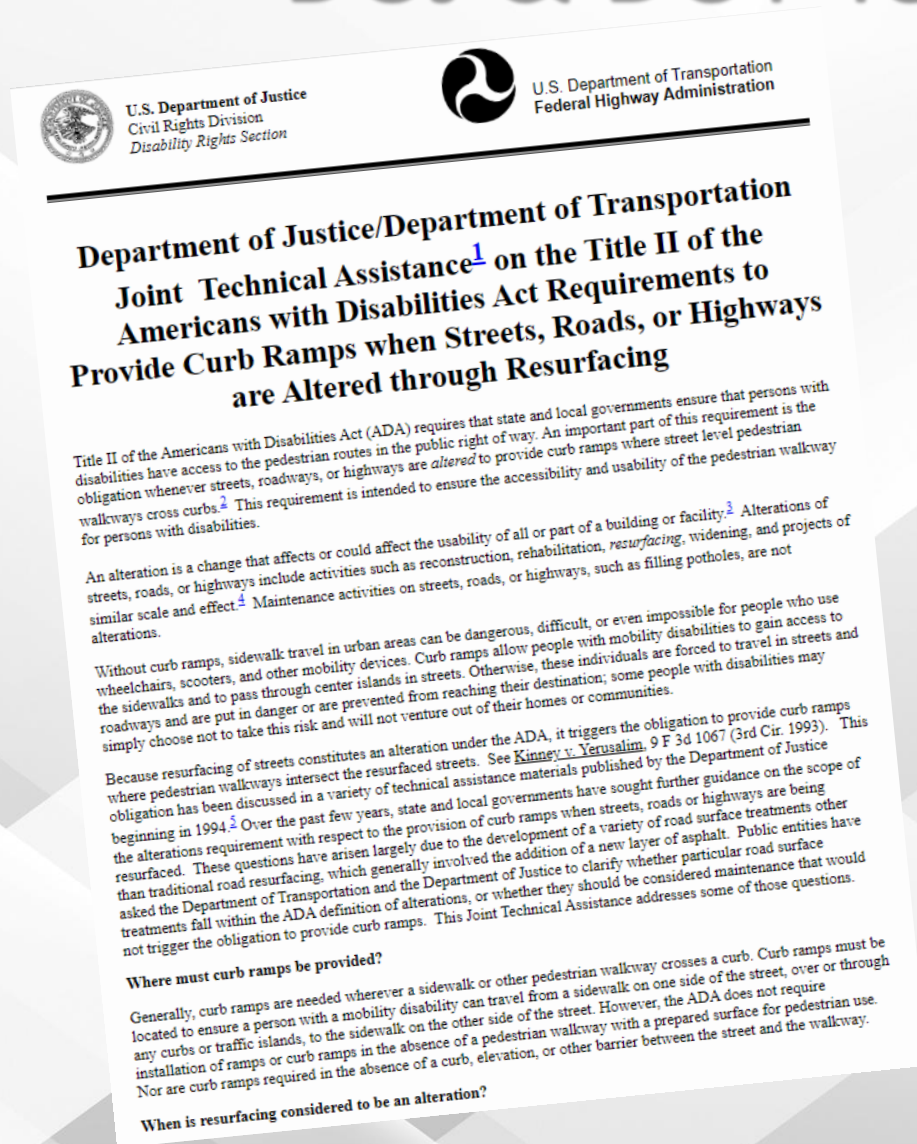


# Access = Safety





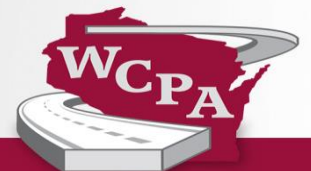
# DOJ & DOT Tech. Assistance



‘Alteration’ vs  
‘Maintenance’

Adding or replacing  
asphalt vs coating the  
asphalt surface to  
preserve the road surface

Alteration projects must  
include curb ramps within  
the scope of the project



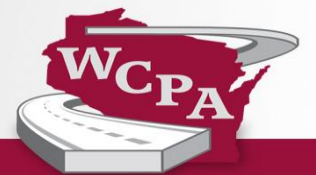
# Alterations - Update to Existing Physical Constraints

## Old Language:

Where existing physical constraints make full compliance with these guidelines “impracticable,” alterations must comply with the technical specifications of these guidelines to the “*extent practicable*.”

## New Language:

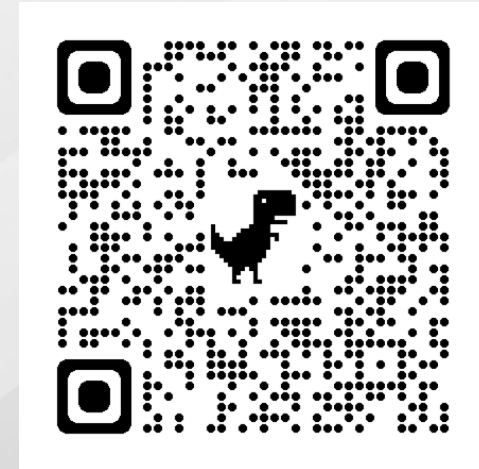
The Board has replaced the term “impracticable” with “**technically infeasible**” and “*extent practicable*” with “**maximum extent feasible**.”



# Alterations – Regarding Roadway Treatments

An alteration of streets, roads, or highways include activities such as:

- Reconstruction
- Rehabilitation
- Resurfacing
- Widening
- Projects of similar scale and effect

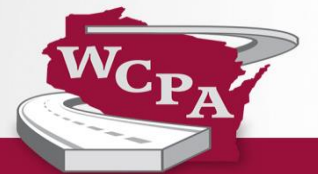


*\*Maintenance activities on streets, roads, or highways, such as filling potholes, are not alterations.*

# Alterations

There are three major changes with the way alterations are treated in the final rule.

1. Any portion of a pedestrian facility that is altered must be altered to comply with these guidelines regardless of the intended “scope of the project” by the entity undertaking the alteration (R201.1).
2. Facilities and portions of facilities that are “added” to an existing, developed public right-of-way are “alterations,” and are subject to the requirements for altered facilities ( *see* R104.3; R201.1; R202).
3. Altered facilities must be connected to an existing pedestrian circulation path by a pedestrian access route (R202.2).



# Alterations that Trigger Installation of Accessible Pedestrian Signals

The alteration of a signal controller and software, or the replacement of a signal head, would trigger the requirement to install an accessible pedestrian signal (NPRM R209.2)

- Pedestrian signals are subject to the same alteration requirements as other pedestrian facilities.
- The entity making the alteration will assess, according to requirements in the guidelines as adopted by USDOT and DOJ, whether installation of an accessible pedestrian signal is required.
- The Board notes that USDOT and DOJ may provide further specifics as to alterations triggering installation of APS in their rulemakings adopting these guidelines.

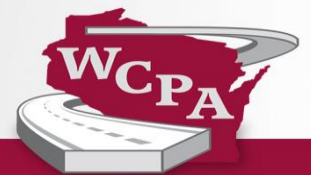


# Alterations - Accessible Pedestrian Signals - Scoping for Accessible Pedestrian Signals

The final rule scoping specifies that accessible pedestrian signals be installed wherever new pedestrian signals are provided, and whenever pedestrian signals are altered.

Roundabouts - Final Rule includes three treatment options for crosswalks at roundabout in addition to standard accessible pedestrian signals:

- Pedestrian Hybrid Beacon (PHB)
- Raised Crosswalks
- Rapid Rectangular Flashing Beacons (RRFB)



# Manual of Uniform Traffic Control Devices for Streets and Highways (MUTCD)

There are three major changes with the way alterations are treated in the final rule.

- In the final rule, MUTCD provisions are not incorporated by reference. Any portion of a pedestrian facility that is altered must be altered to comply with these.
- The Board has stated all required technical provisions directly in the rule text, many of which were taken from the MUTCD.



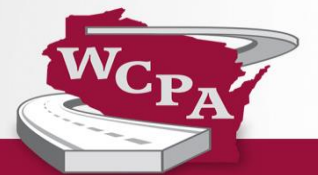
# Major Issues to Guidance

## Alterations to Existing Facilities

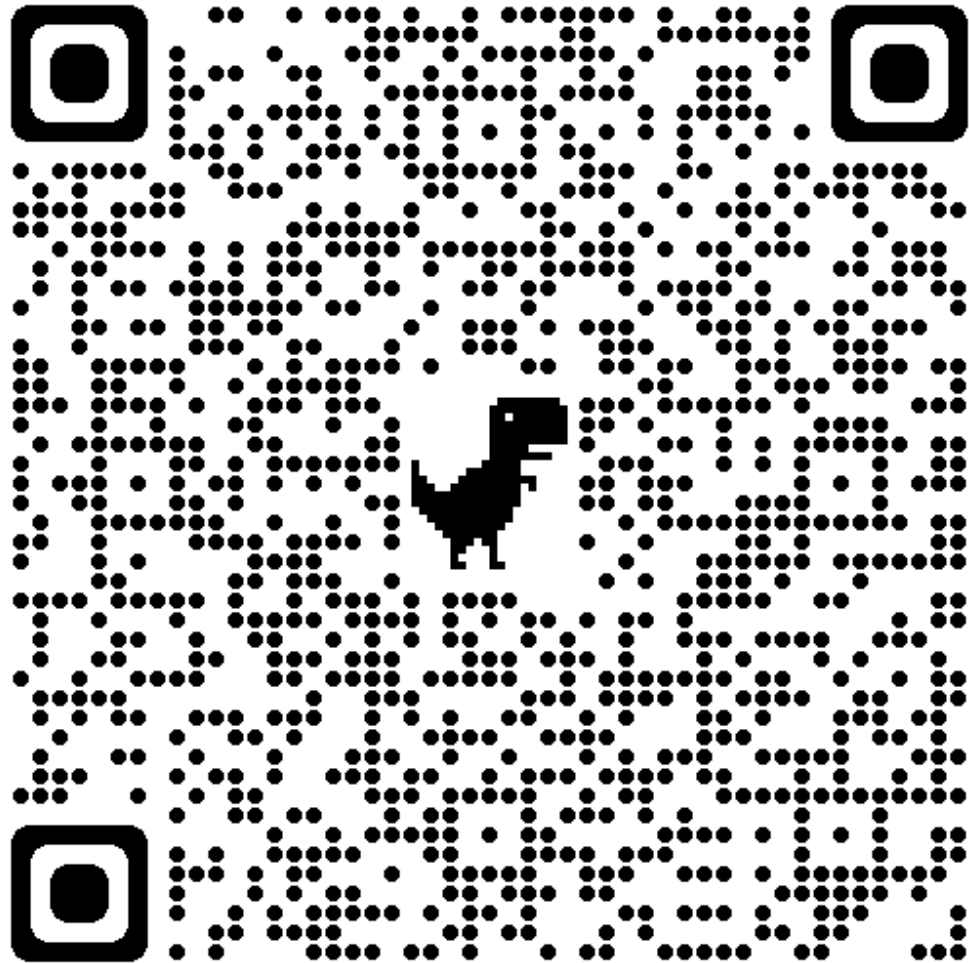
- Each altered element, space, or facility within the scope of a new project must comply with the applicable requirements for new construction (see R202.3)

## Existing Facilities That Are Not Altered

- The guidelines clarify that the guidelines do not address existing facilities unless they are included within the scope of an alteration undertaken at the discretion of a covered entity (see R101.2)







# Summary of Significant Changes

# Design Considerations & Construction Components



# Pedestrian Access Route (PAR)

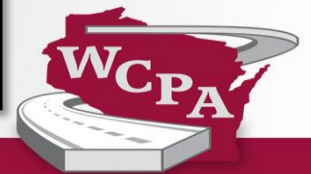
- Pedestrian Access Route is the pedestrians equivalent of a traffic lane.
- PAR is a 4 foot “MINIMUM” wide “CLEAN” path that is **continuous** through side streets, driveways, medians, curbs, grass, roadways, etc.



- Does This Make Sense?



- Then How Can This?



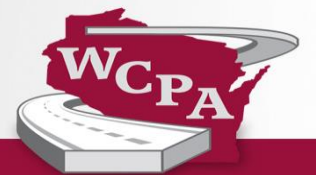
# Pedestrian Access Route (PAR) Requirements

- Min 4 ft. wide Pedestrian Access Route (PAR)
- 5 ft. typical
- If 4 ft PAR then 5 ft x 5 ft passing spaces required at a max. spacing of 200'
- Cross Slope: Max. 2%. Typ. 1.5%. Min. 1% for drainage
- Vertical discontinuities less than ¼ inch
- All grade breaks constructed perpendicular to path of travel



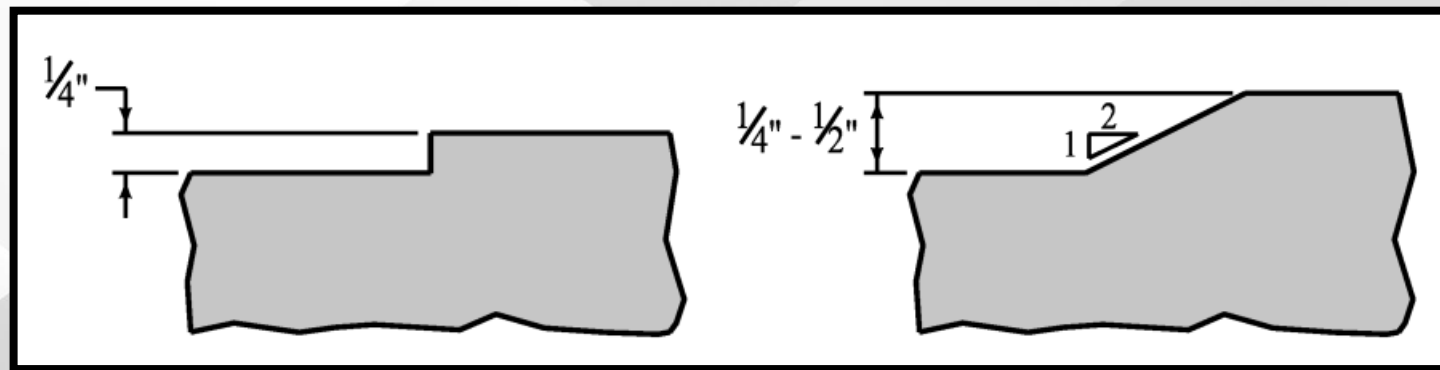
# Changes in Level

- The Board updated the language to address **“changes in level.”**
  - The term “surface discontinuities” has been eliminated from the guidelines.
- The requirements state changes in level:
  - Up to 1/4 inch (6.4 mm) may be vertical.
  - Changes in level between 1/4-inch (6.4 mm) high and 1/2-inch (13 mm) high must be beveled.
- Changes in level:
  - Greater than 1/2 inch (13 mm) up to 6 inches (150 mm) must have a slope no greater than 1:12 (8.3%)
  - Greater than 6 inches (150 mm) must comply with the requirements for ramps at R407.



# General Requirements

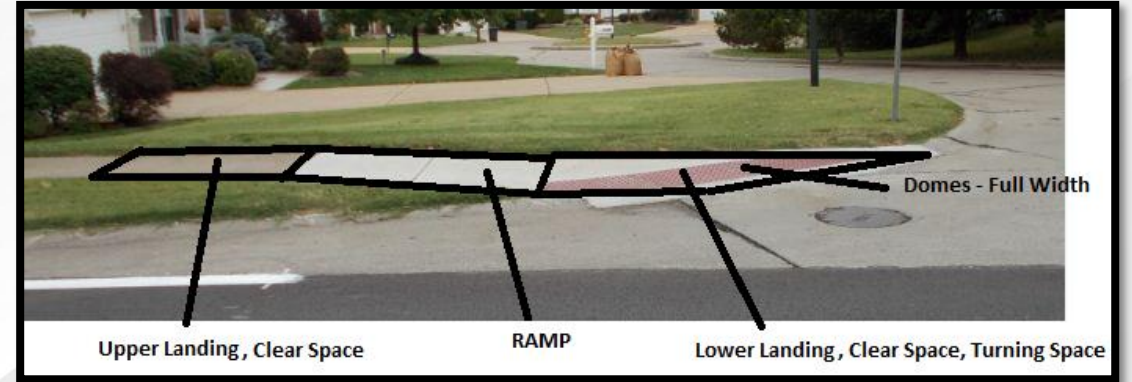
- Surfacing: PROWAG requires all surfaces to be firm, stable, and slip resistant (R302.7)
- Changes in Level: Changes in level, including bumps, utility castings, expansion joints, etc. shall be a maximum of 1/4 inch without a bevel or up to 1/2 inch with a 2:1 bevel. Where a bevel is provided, the entire vertical surface of the discontinuity shall be beveled (R302.7.2)



# Curb Ramp Anatomy

Curb Ramps include the following parts:

- Landings?
  - Perpendicular Ramps = Landing at Top
  - Parallel Ramps = Landing at Bottom
- Clear Spaces (4' x 4' Minimum)
- Domes (2' Deep, Entire Width of the Opening)
- Ramp (8.3% Maximum Running Slope “unless” greater than 15 feet)
- Grade Break (one at the top and one at the bottom of every ramp)
- Turning Spaces (2% x 2% - if Turning Movements are Required)
- Sometimes Flares (10% maximum – if needed)
- Sometimes Curbs (To Help with Direction or Hold Grade)



# Curb Ramps – Technical Requirements (WisDOT)

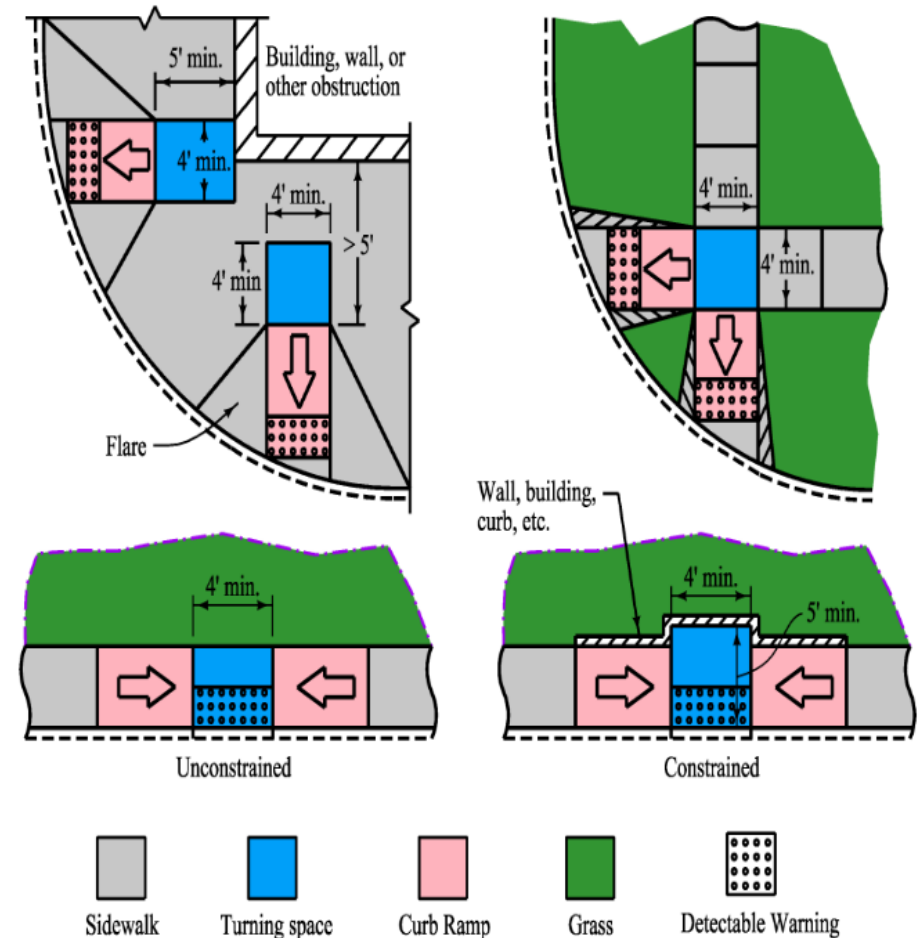
- **Cross Slope:** The maximum cross slope is 2.0% with a target value of 1.5%; however, for intersection legs that do not have full stop or yield control (i.e. uncontrolled or signalized) and at mid-block crossings, the curb ramp cross slope is allowed to match the cross slope in the pedestrian street crossing section. See “pedestrian street crossings” for additional details. (R304.5.3)
- **Running Slope:** Provide curb ramps with a target running slope of 6.25% and a maximum slope of 8.3%; however, curb ramps are not required to be longer than 15 feet, regardless of the resulting slope. (R304.2.2 and R304.3.2)
- **Width:** The minimum width of a curb ramp is 4 feet, excluding curbs and flares. If the sidewalk facility is wider than 4 feet, the target value for the curb ramp is equal to the width of the sidewalk. (R304.5.1)
- **Grade Breaks:** Grade breaks at the top and bottom of curb ramps must be perpendicular to the direction of the curb ramp run. Grade breaks are not allowed on the surface of curb ramp runs and turning spaces. (R304.5.2)

**R302.5.1 Pedestrian Street Crossings.** Where pedestrian access routes are contained within pedestrian street crossings, the grade of the pedestrian access route shall be 5 percent maximum.

**R302.6 Cross Slope.** Except as provided in R302.6.1 and R302.6.2, the cross slope of pedestrian access routes shall be 2 percent maximum.

**R302.6.1 Pedestrian Street Crossings Without Yield or Stop Control.** Where pedestrian access routes are contained within pedestrian street crossings without yield or stop control, the cross slope of the pedestrian access route shall be 5 percent maximum.

**R302.6.2 Midblock Pedestrian Street Crossings.** Where pedestrian access routes are contained within midblock pedestrian street crossings, the cross slope of the pedestrian access route shall be permitted to equal the street or highway grade.





# Landings

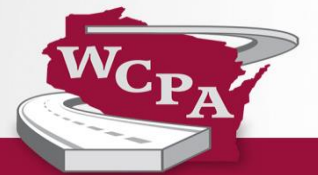
- Landings are part of the PAR
- Required at all locations where the PAR changes directions
- Max slope of 2% in all directions
- Min 4 feet by 4 feet





# Grade Break(s)

- A Construction Joint, Perpendicular to the Pedestrian Path of Travel, that signifies the beginning and ending of the ramp slabs.



# Running Slope



- The slope or grade parallel to the direction of pedestrian travel
- When building in the R/W, Grade of Pedestrian Access Route can equal the General Grade of the Adjacent Roadway
- On Ramps, the Running Slope is between 5% and 8.333% maximum, unless you are chasing grade, in which the ramp only needs to be 15+ Feet and the grade can then exceed 8.333%



# Sidewalk Running Slope

- Max 5% where terrain conditions permit
- Level landings may be required as follows:
  - Sidewalk running slope from 0% to 5% - no level landing is required.
  - Sidewalk running slope greater than 5% to 8.3% - provide a 5-foot by 5-foot level landing at each 2.5 feet of vertical change.
  - When street grade exceeds 8.3%, the sidewalk running slope should match the street grade with no level landings. Consider providing flat landing/rest strips at regular intervals.



# Cross Slope

- The Slope or Grade perpendicular to pedestrian travel.
- 2% or less everywhere except:
  - Allowable 5% cross slope at street crossings without yield or stop control.
  - At Midblock Crossings Only – Cross slope of Ramp can equal Grade of road.

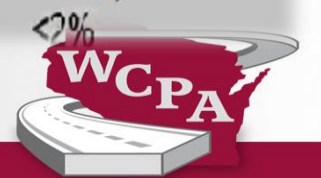
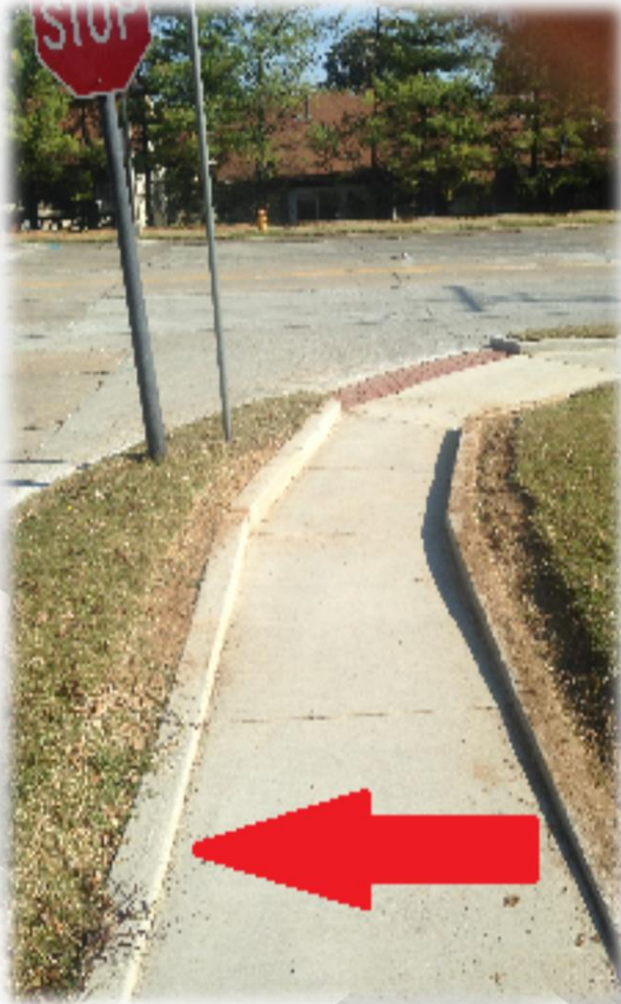
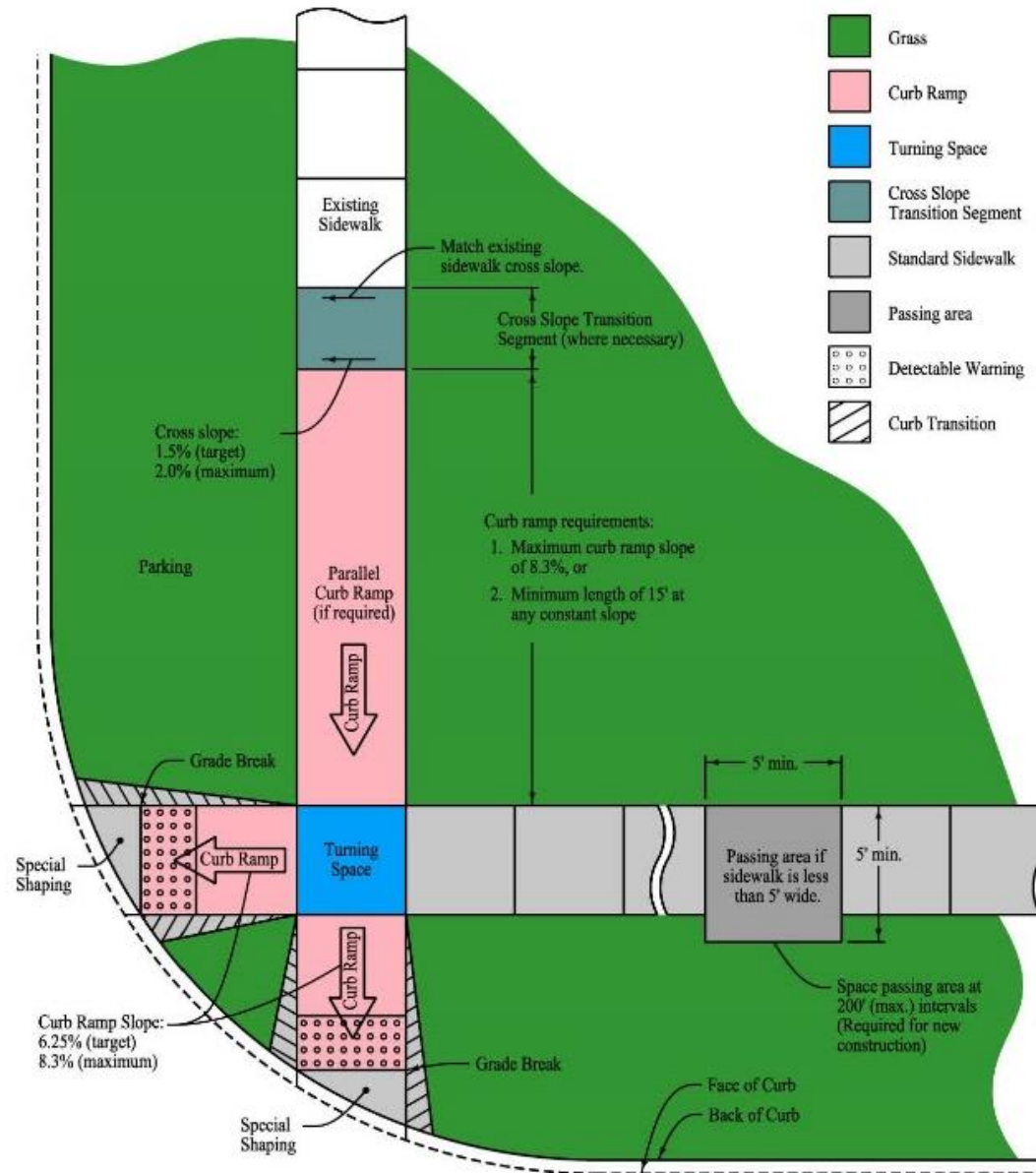


Figure 12A-2.03: Standard Sidewalk and Curb Ramp Elements



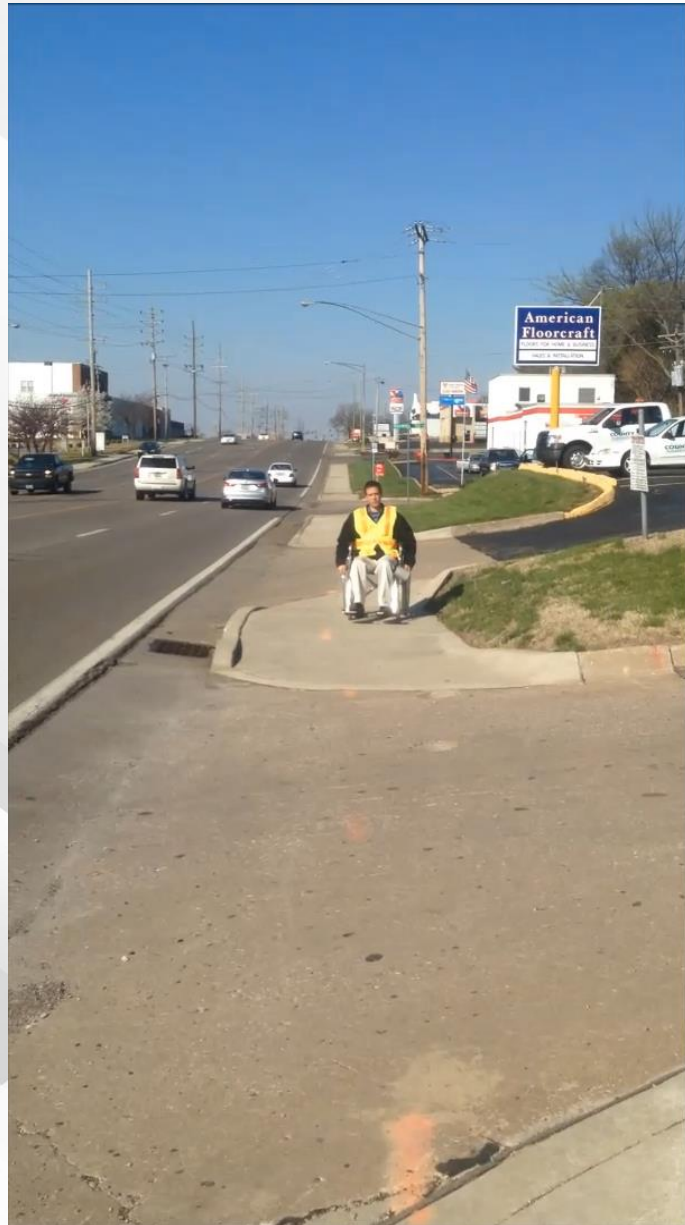
# Sidewalk & Curb Ramp Elements

- Curb ramp type selection
- Grades in wheelchair path
- **WisDOT 1.5% sidewalk cross slope**
- 12:1 (8.3%) absolute max curb ramp slope per ADA - **WisDOT max 7% at curb opening**
- **11% max slope differential between ramp and gutter**
- Application of curb behind sidewalk
- 12:1 (8.3%) max flare slopes for Type 1-A Ramp types and effect to curb tapers

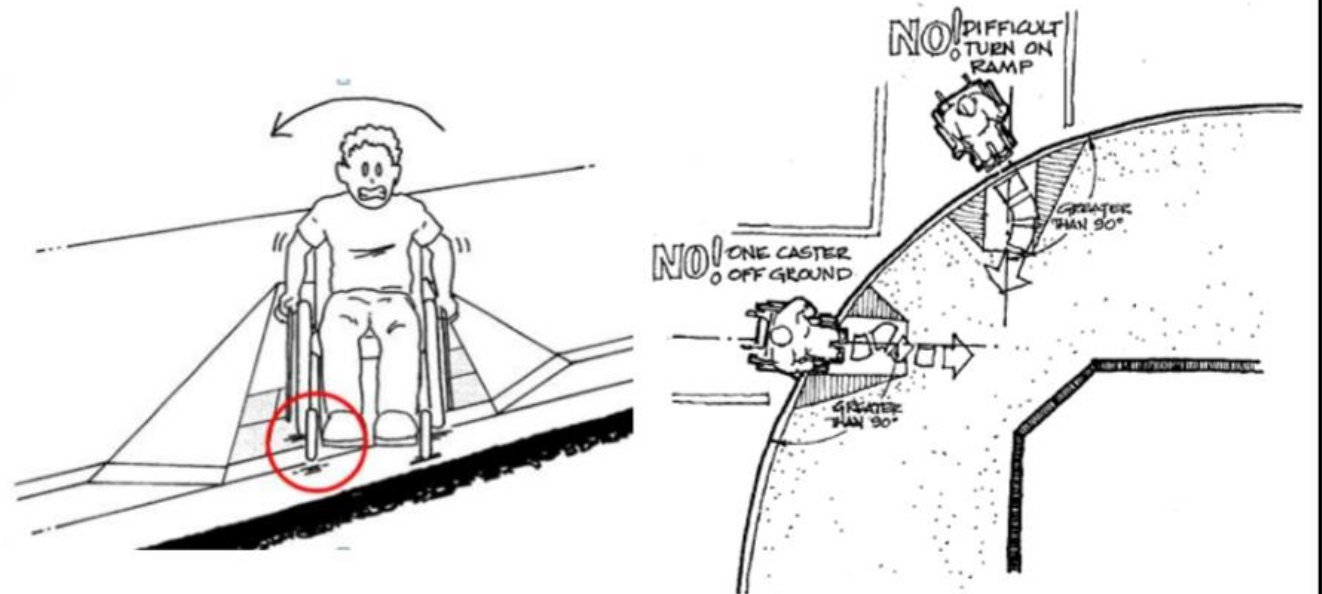
A blurred background image of a city street. In the center, a blue van is driving away. To the right, a person in a wheelchair is visible, moving along the sidewalk. The overall scene is out of focus, emphasizing the text overlay.

Every weekday Amanda Parezo commutes about a mile to work using her wheelchair.

Here is why you don't see more wheelchair users on the sidewalk



## Perpendicular Grade Breaks



- ❑ Both wheels must hit the break at the same time for stability (especially manual wheelchairs)

UNITED STATES ACCESS BOARD

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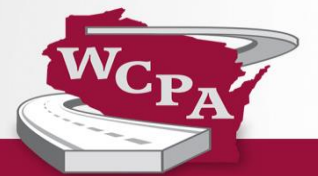




# Getting on the Same Page

Sometimes 95% right is *'technically speaking'* way wrong?

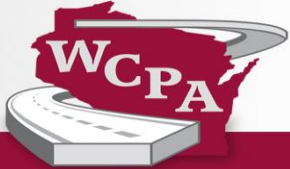
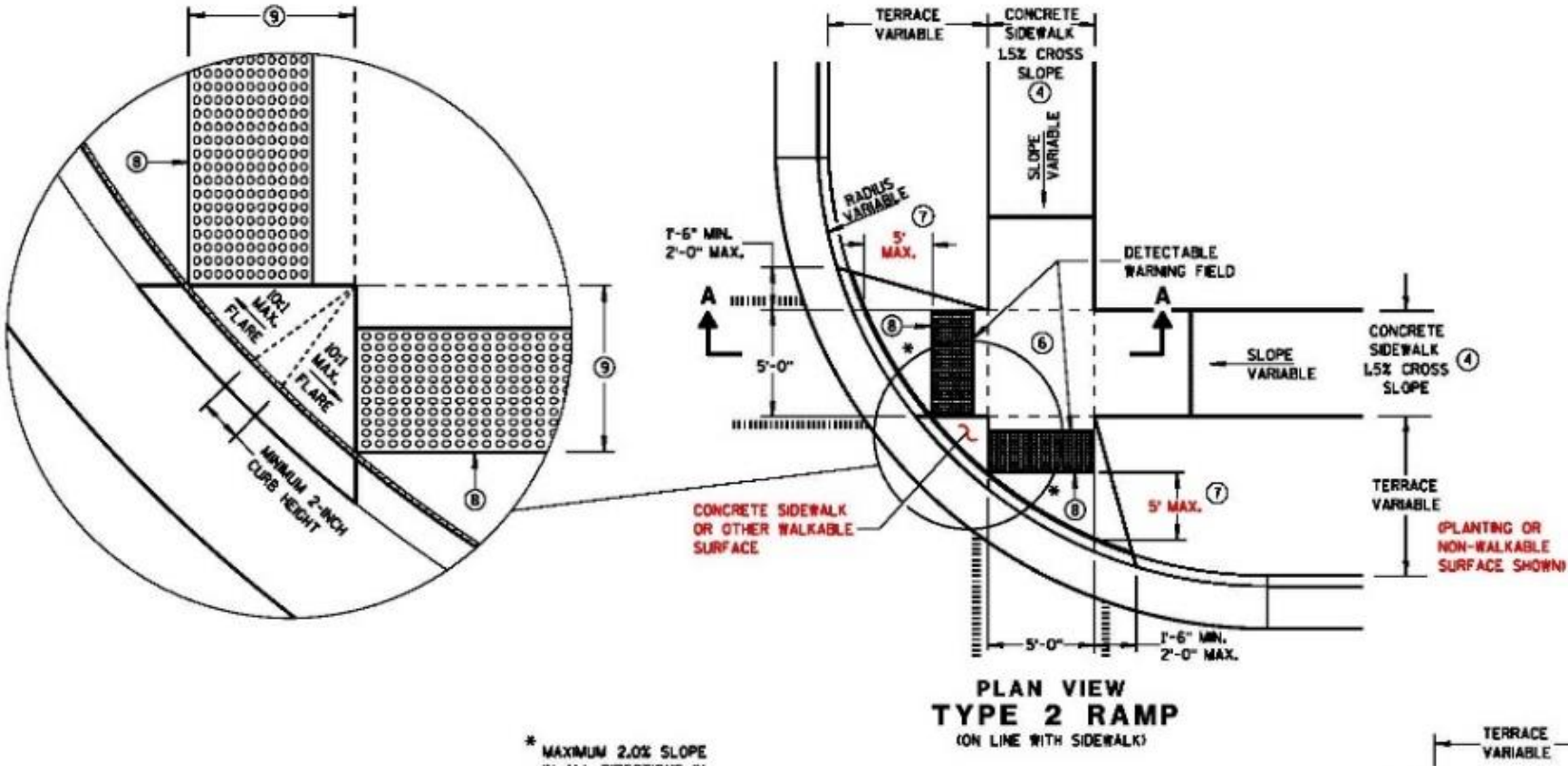
# Current Curb Ramp SDDs (8D5 Series)



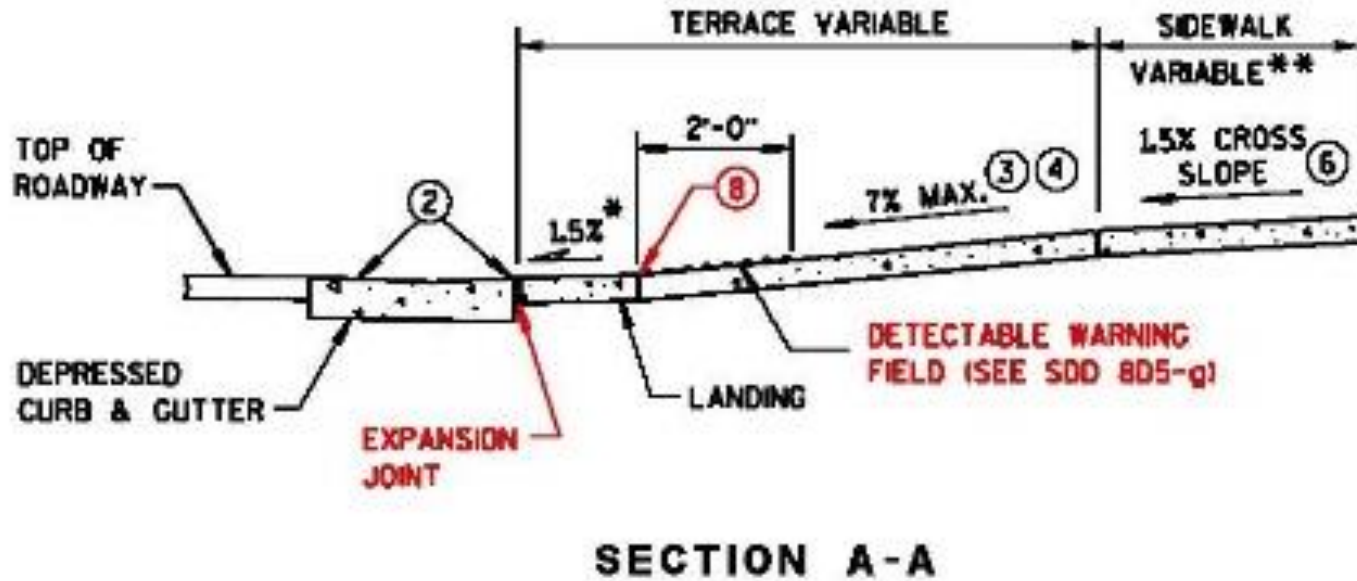
# Type 2 Ramp SDD

## 8D5 sheet b: Curb Ramps Types 2 and 3

- Max 10:1 Flare
- Minimum 2-inch Curb Height Between Ramps

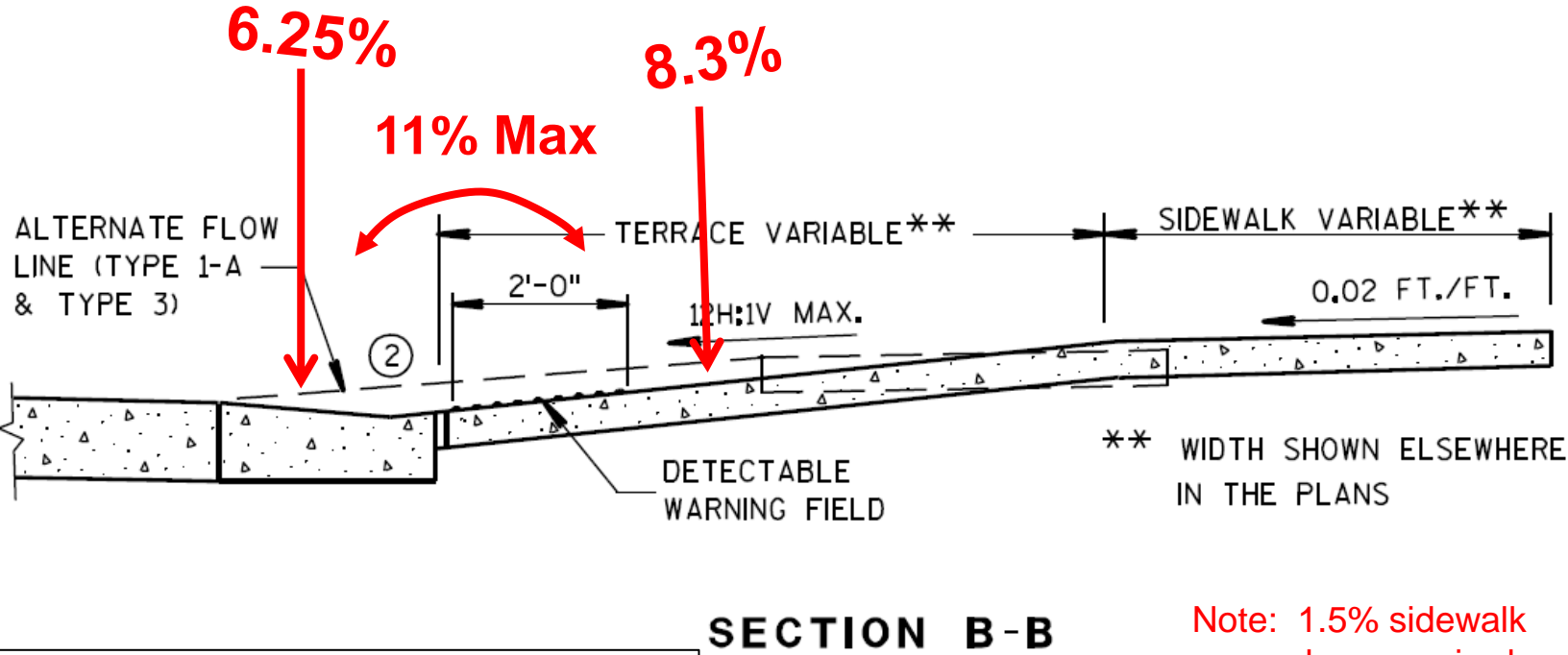


# Type 2 Ramp SDD



- Max 5-foot grade break distance
- Max 2% slope in all directions in grade break area

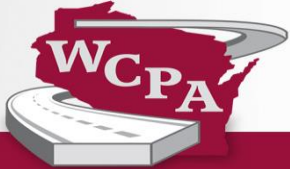
# OLD: Curb Ramp Slope



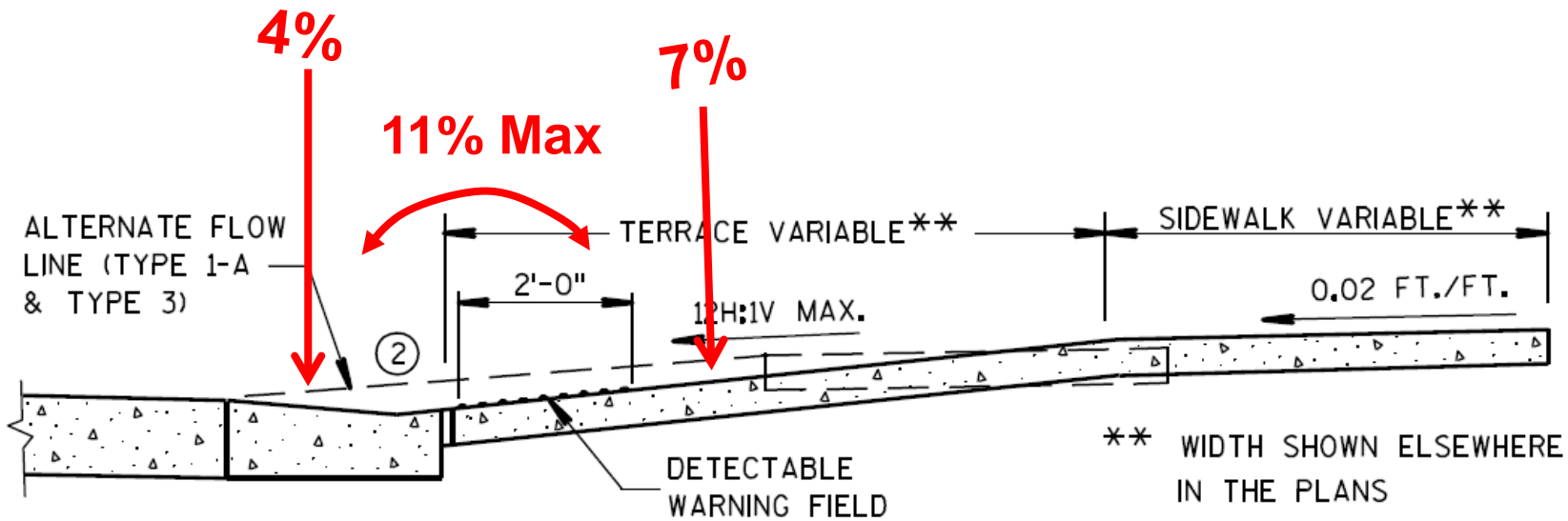
**But  $6.25\% + 8.3\% = 14.55\% > 11\%$**

**11% Max Slope Differential Between Ramp and Gutter**

**Note: 1.5% sidewalk cross slope required**



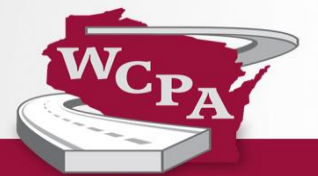
# NEW: Curb Ramp Slope



**SECTION B-B**

Note: 1.5% sidewalk cross slope required

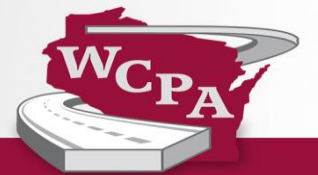
# Detectable Warning Fields





# Detectable Warning

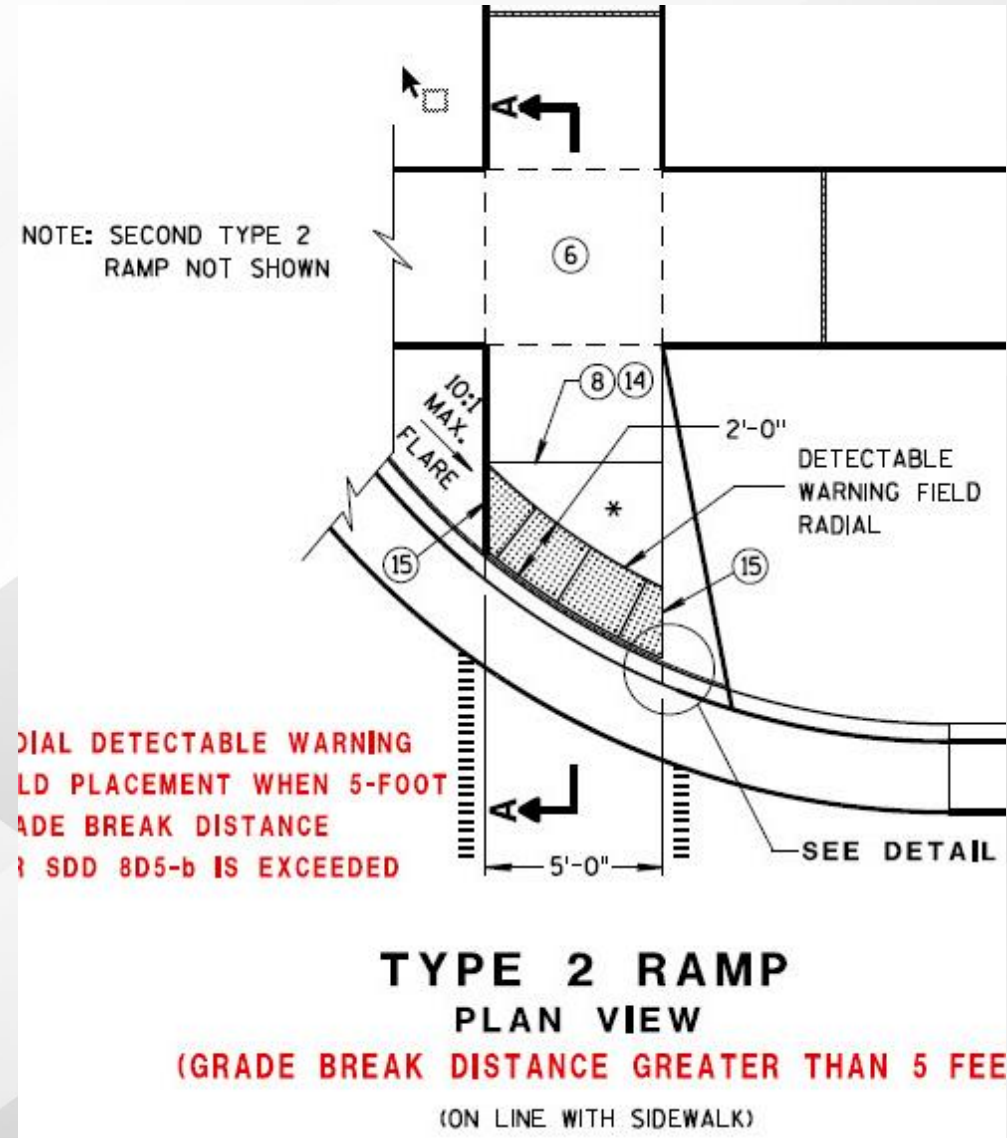
- Color of Mat Must Contrast to Surroundings
- Must Cover Entire Width of Opening (2" boarder allowance)
- Placed at back of curb when on radius, a face of curb when in a cut through median
- Must be 2 Feet Deep Across "Entire" Opening





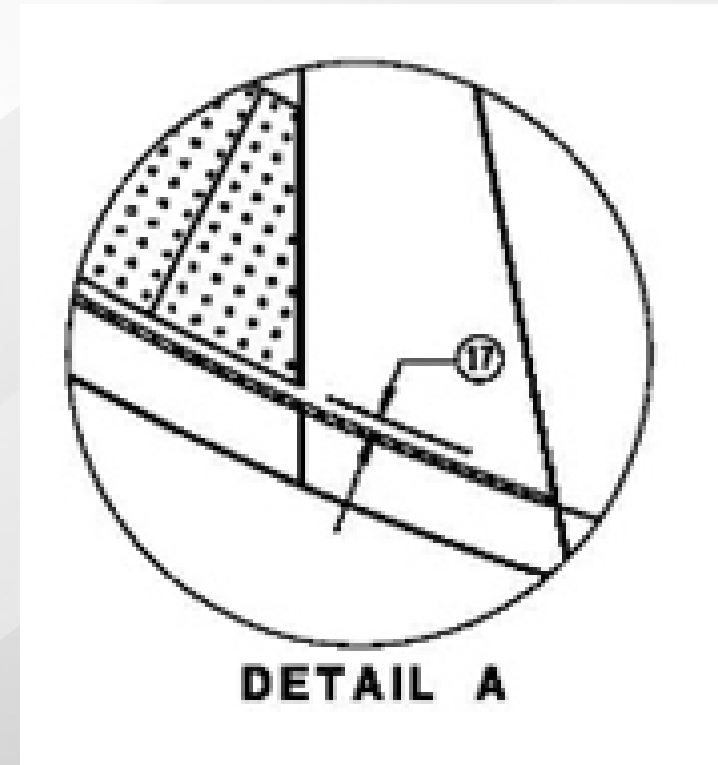
# Radial DWF Panels

- Radial plates per manufacturer's recommendations (WisDOT approved list)
- Field cutting outside edges will be necessary.
- Avoid cutting through domes. Cut true to line +/- 1/8 inch.
- Intermediate joints within warning field must not be field cut.



# Radial DWF Panels

- Plan to provide curb radius, panel long chord and area.
- Final DWF layout determined by contractor
- Max 3-inch concrete border is allowable between BOC and radial DWF for constructability purposes, with the concrete border width variable up to 1 inch





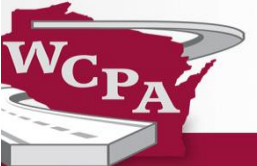
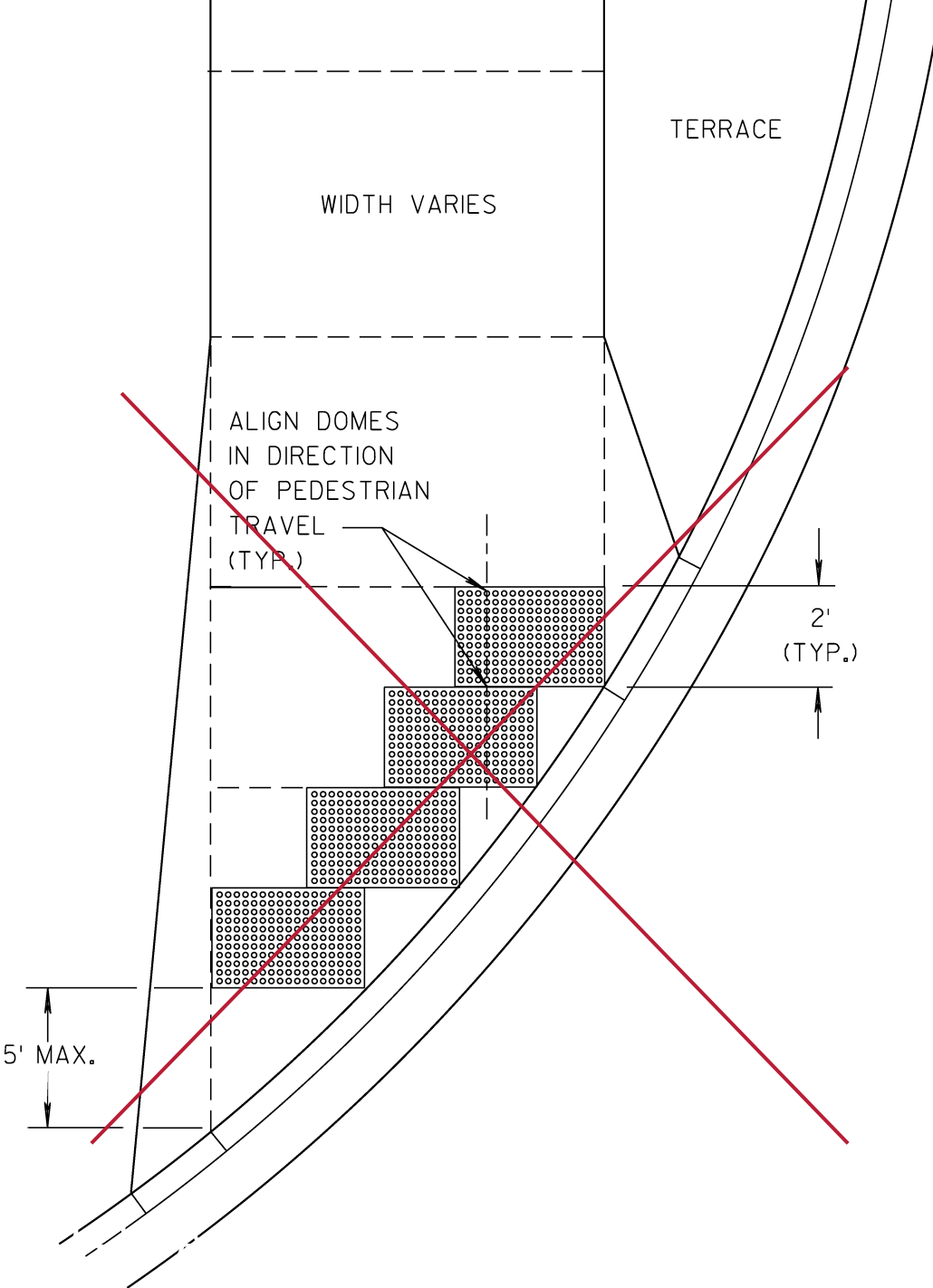
## Installation Steps

- 1 If necessary, connect multiple plates together.
- 2 Pour concrete.
- 3 Use supplied lifting springs and a construction 2x4 or pipe to lift plates into position.
- 4 Set plates in wet concrete at final position.
5. Remove lifting springs.
- 6 Press assembly into wet concrete to final elevation.
7. Finish concrete around assembly.
8. Remove any wet concrete that may have spilled on to the plate surface.

# Manufacturers Websites Example

# Staggered Row DWF Application – Not Acceptable

Wisconsin is no longer allowing this staggered practice – WisDOT went to Radial Plates



# SDD - Key Items

- Grade change between gutter flag slope and the curb ramp slope shall not exceed 11%.
- Maximum gutter flag slope is 4%.
- Provide longitudinal drainage around curb and away from curb ramp.
- No vertical lips or discontinuities greater than ¼-inch are allowed
- Slope of curb head opening shall not exceed 7% (Also, ramp running slope max of 7% per SDD).

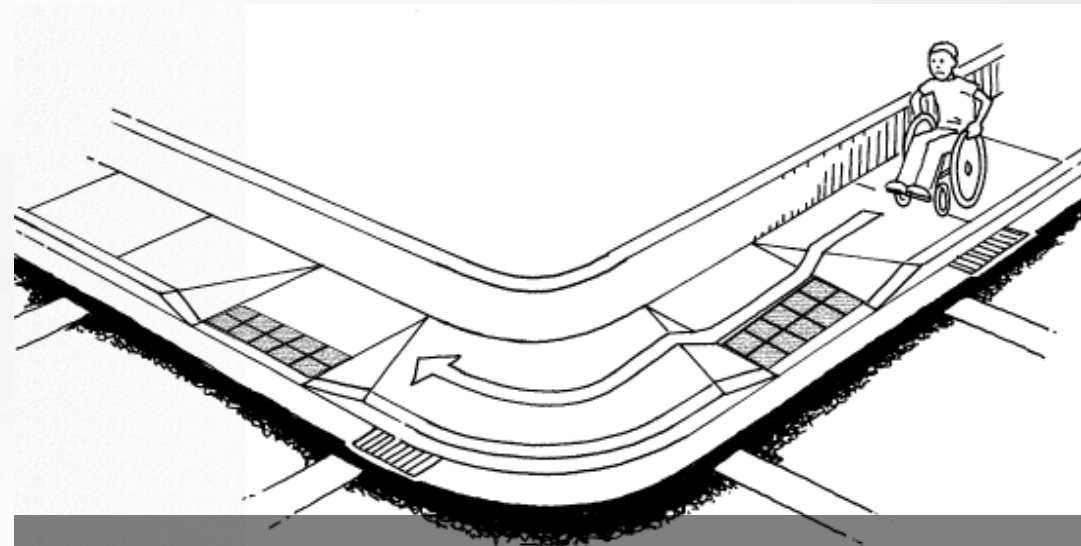


# SDD – Key Items (cont.)

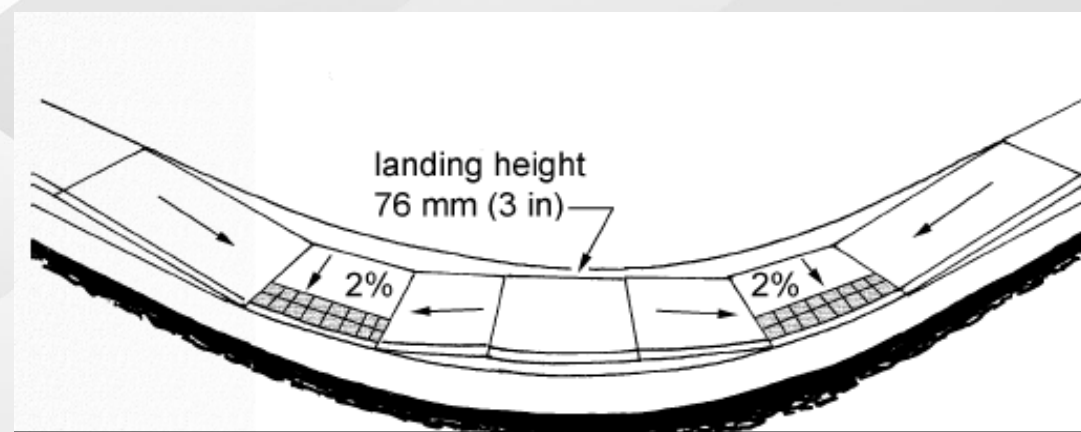
- Max 10:1 flares adjacent to walkable surface
- Minimum 2-inch curb head height between Type 2 ramps
- Detectable warning field (DWF) placement
  - Plates across entire curb ramp
  - Staggered plate application when grade break distance greater than 5 feet—  
General Note 7
  - DWF standards changes forthcoming



# Grades in Wheelchair Path



Not Acceptable



Acceptable

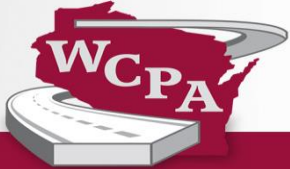
# Max Curb Ramp Slope

7% max. slope

< 6'

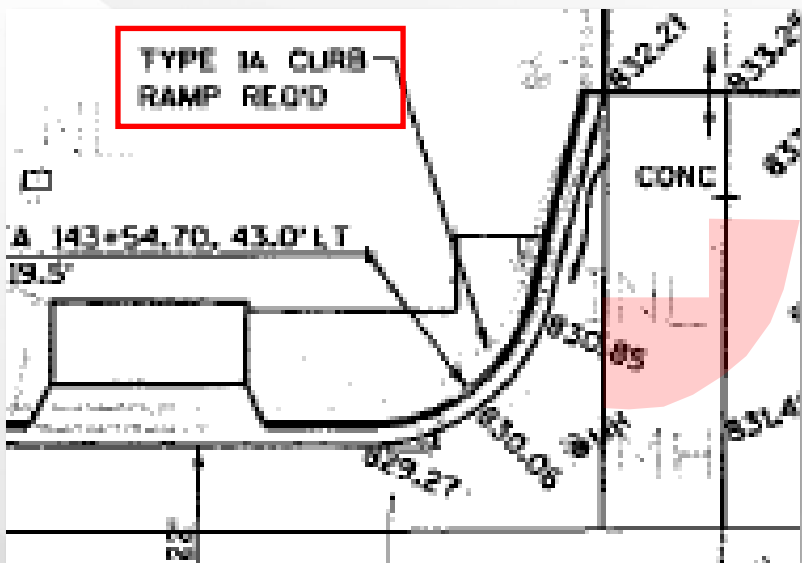


- If the terrace is less than 6 feet wide, then it is likely that the ramp slope will exceed 7% unless the sidewalk is lowered





# Curb Ramp Design and Construction



Curb Ramp Type Identified on Plans



Doesn't Work in the Field



Field Adjustments often required to bridge the gap

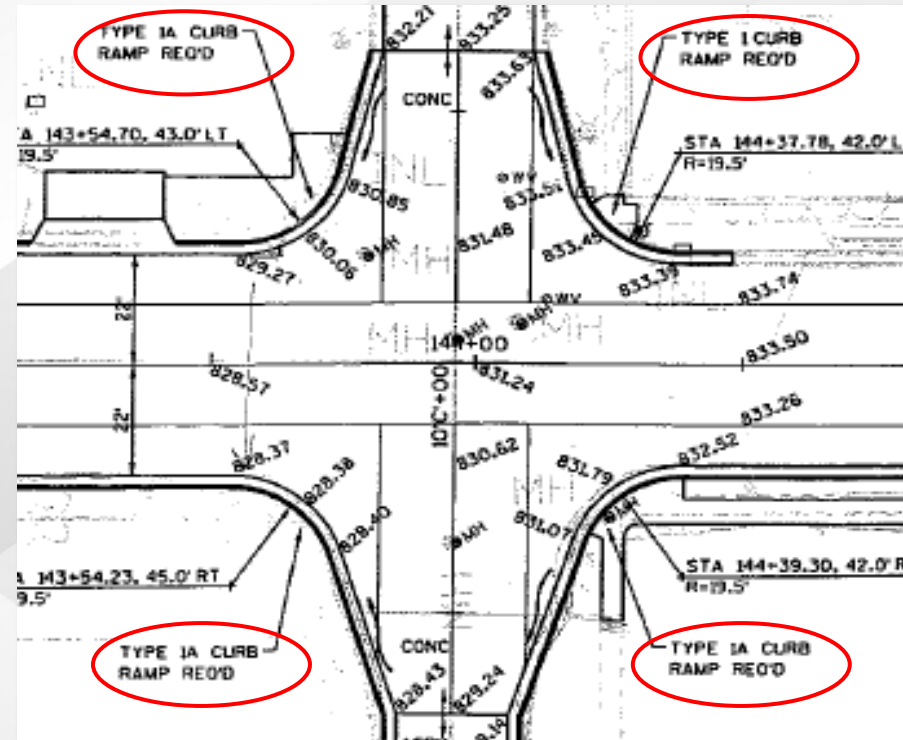
# Design Details – Curb Ramps

- Often rely only on the SDD's instead of actual field conditions
  - May lead to non-ADA-compliance in constrained urban environments
- Need to design curb ramps
  - More emphasis in design
  - Detail sufficiently to construct

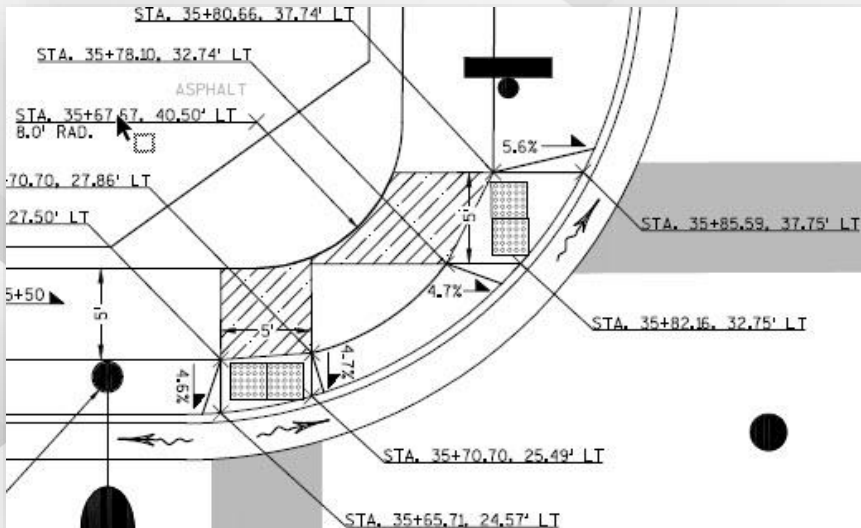


# Construction Plans Insufficient Layout Example

- Shifts design work onto contractor and field engineer
- Inefficient
- Increase risk of being improperly constructed
- Additional construction staff time



# Curb Ramp Staking Bid Item



Effective December  
2017 lets



Paid as EACH per curb  
ramp

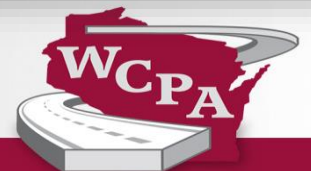
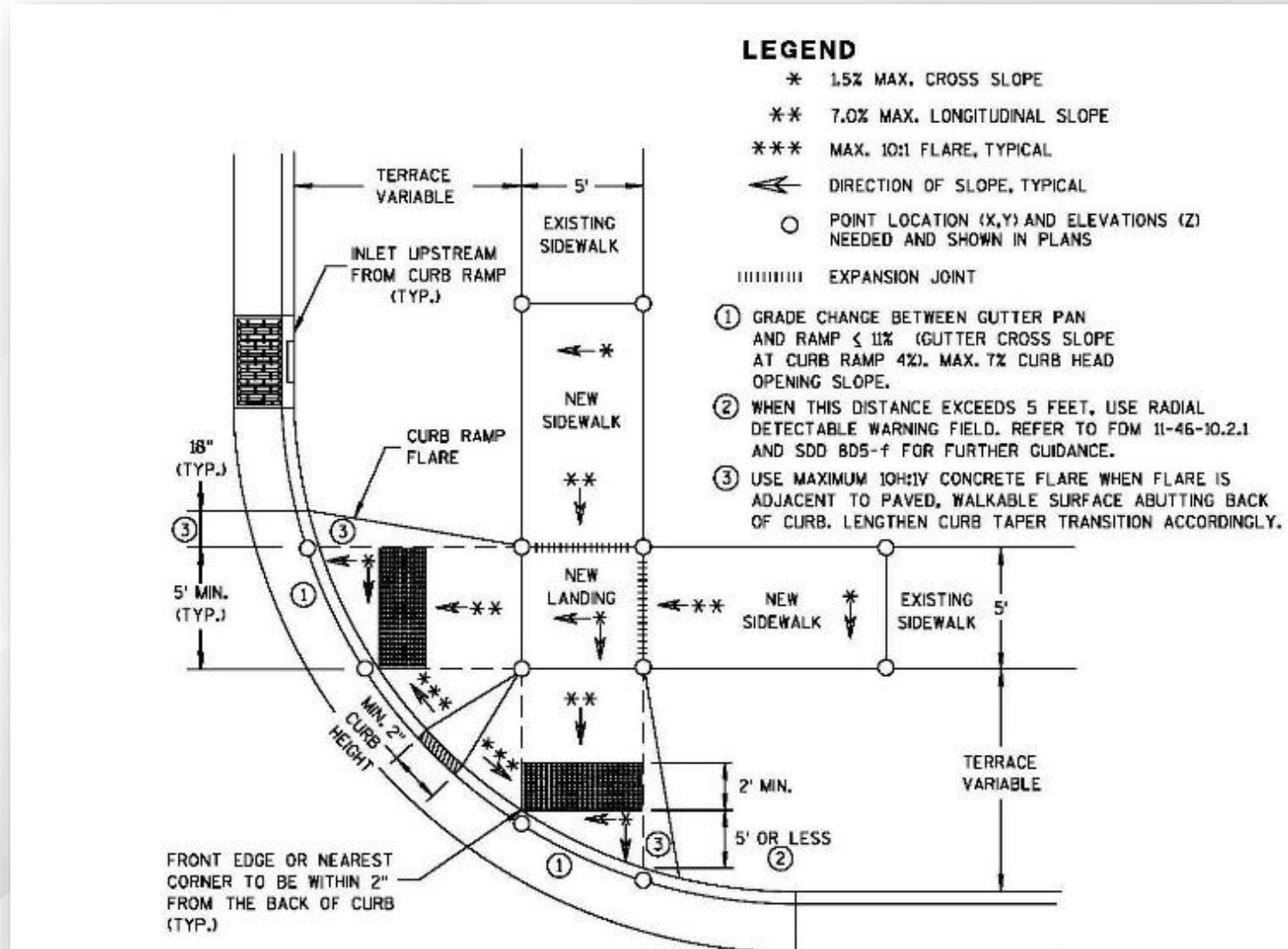
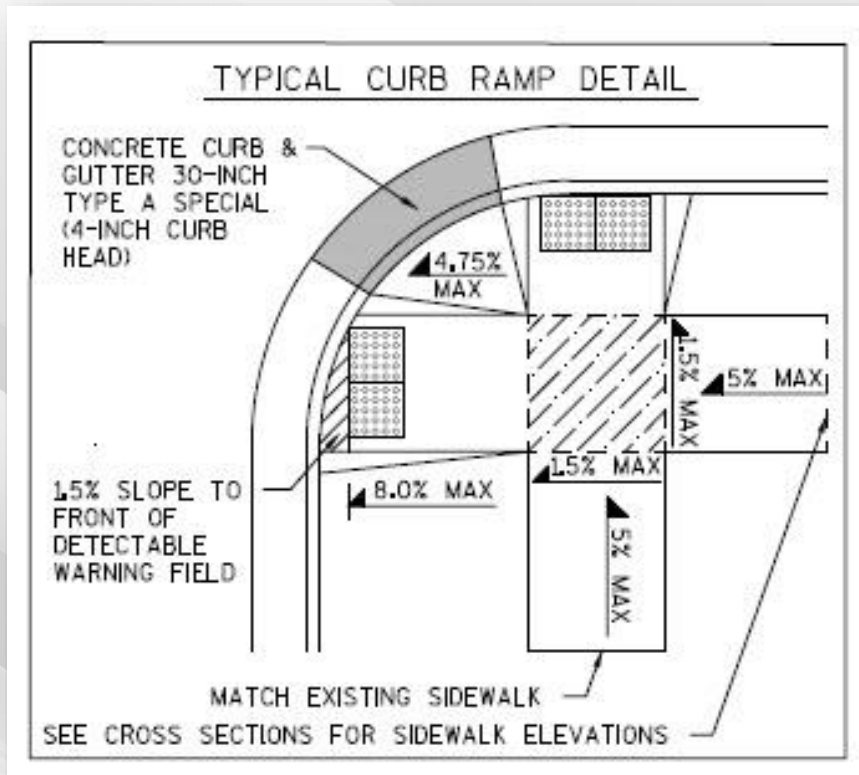


Set and maintain  
stakes as necessary



Staking for curb ramp  
and adjacent sidewalk

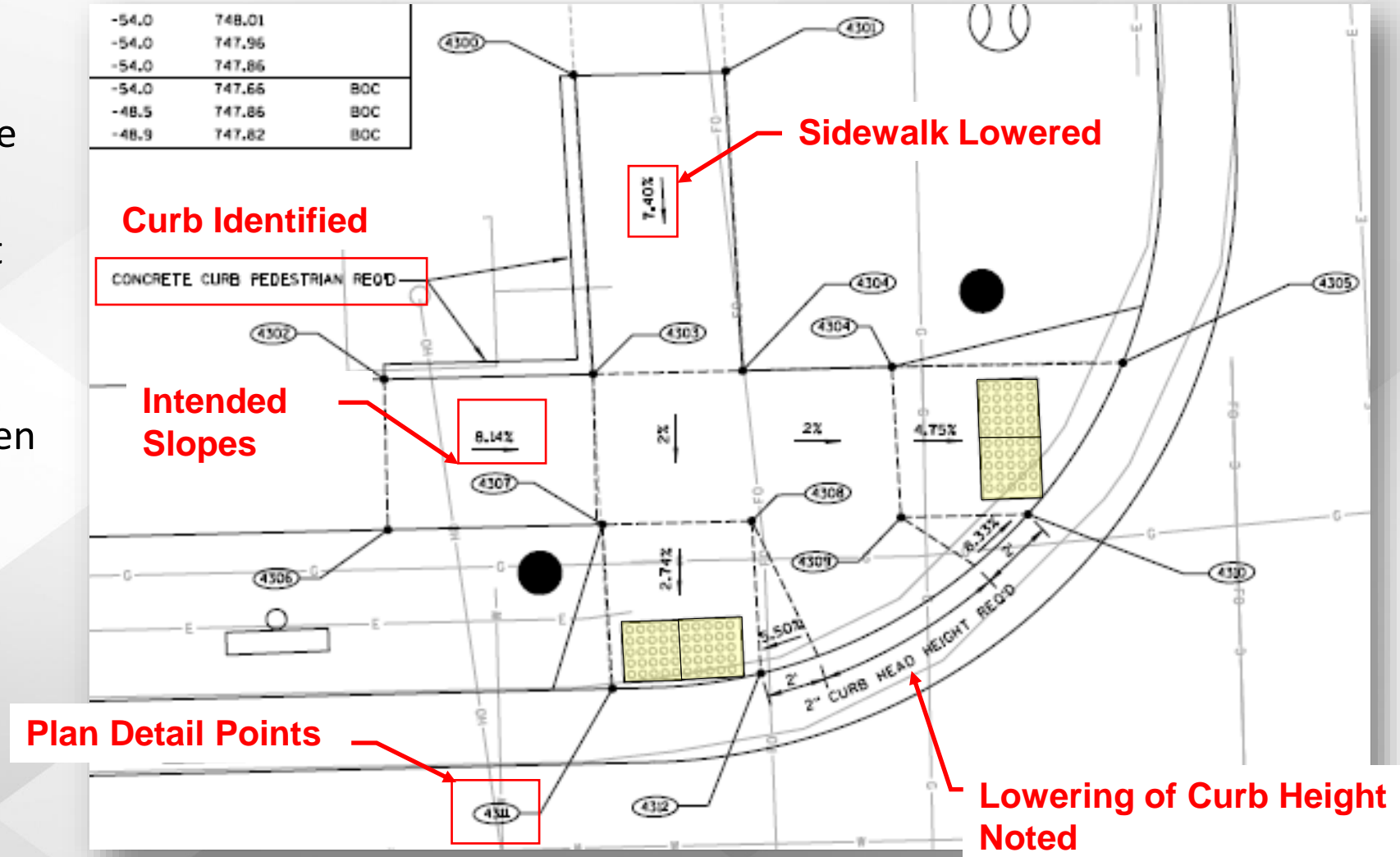
# Recommended Plan Details



# Design Details – Curb Ramps

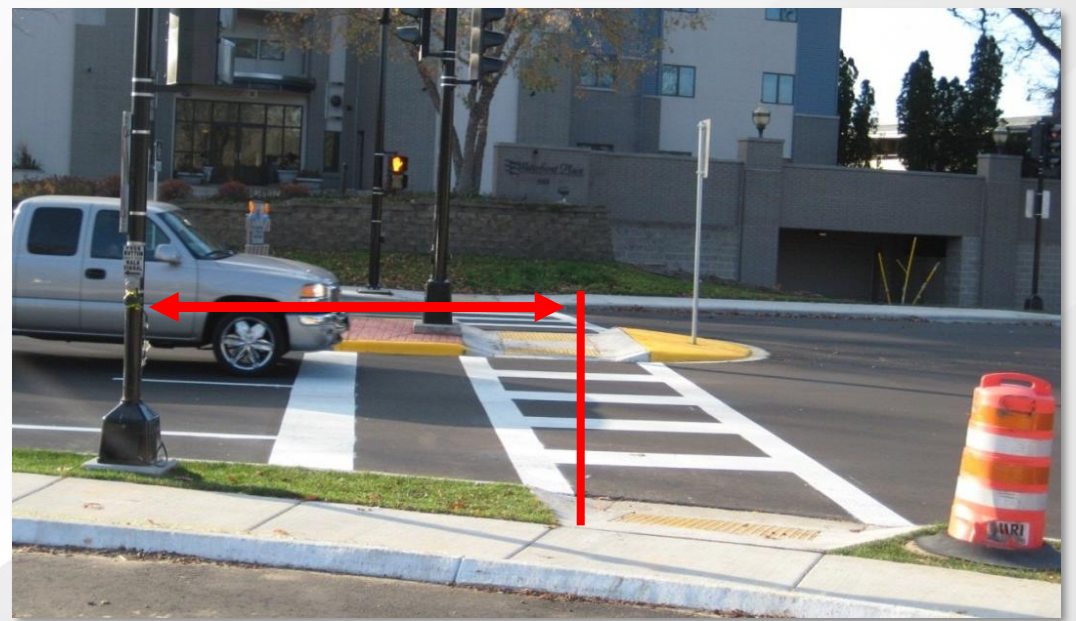
Included in construction plans:

- Curb ramp layout type for reference (i.e., Type 2, Type 1)
- Detectable warning field alignment
- Intended ADA slopes not to be exceeded (i.e., 2%, 5%, 8.33%)
- Curb head height variations between curb ramps
- Intended direction for drainage
- Low points identified
- Layout (Station, Offset, Elev.)

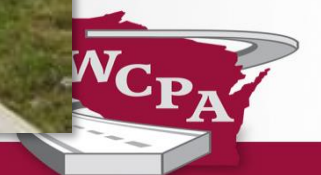


# Locating Push Buttons

- Locate Push Button adjacent to landing.
- Mount control face parallel to crosswalk and no closer than 2.5 ft to the curb.
- Height - 3.5 ft above the sidewalk.
- Close to crosswalk - locate no further than 5 ft from the extension of the crosswalk lines and within 10 ft of the curb line and accessible from a wheelchair.
- Proximity to ramp – locate the push button within 2 ft horizontally of the top corner of the ramp.
- Separation - where there are two accessible pedestrian signals at the same corner, mount the push buttons on poles separated by at least 10 ft.



Improper Placement



# Construction Examples





# Application of Cross Slopes



Ramp

Min. 0.5%

Max. 2.0%

Preferred 1%

Gutter Flow lines

Min. positive flow

Max. 2%

Preferred 1%

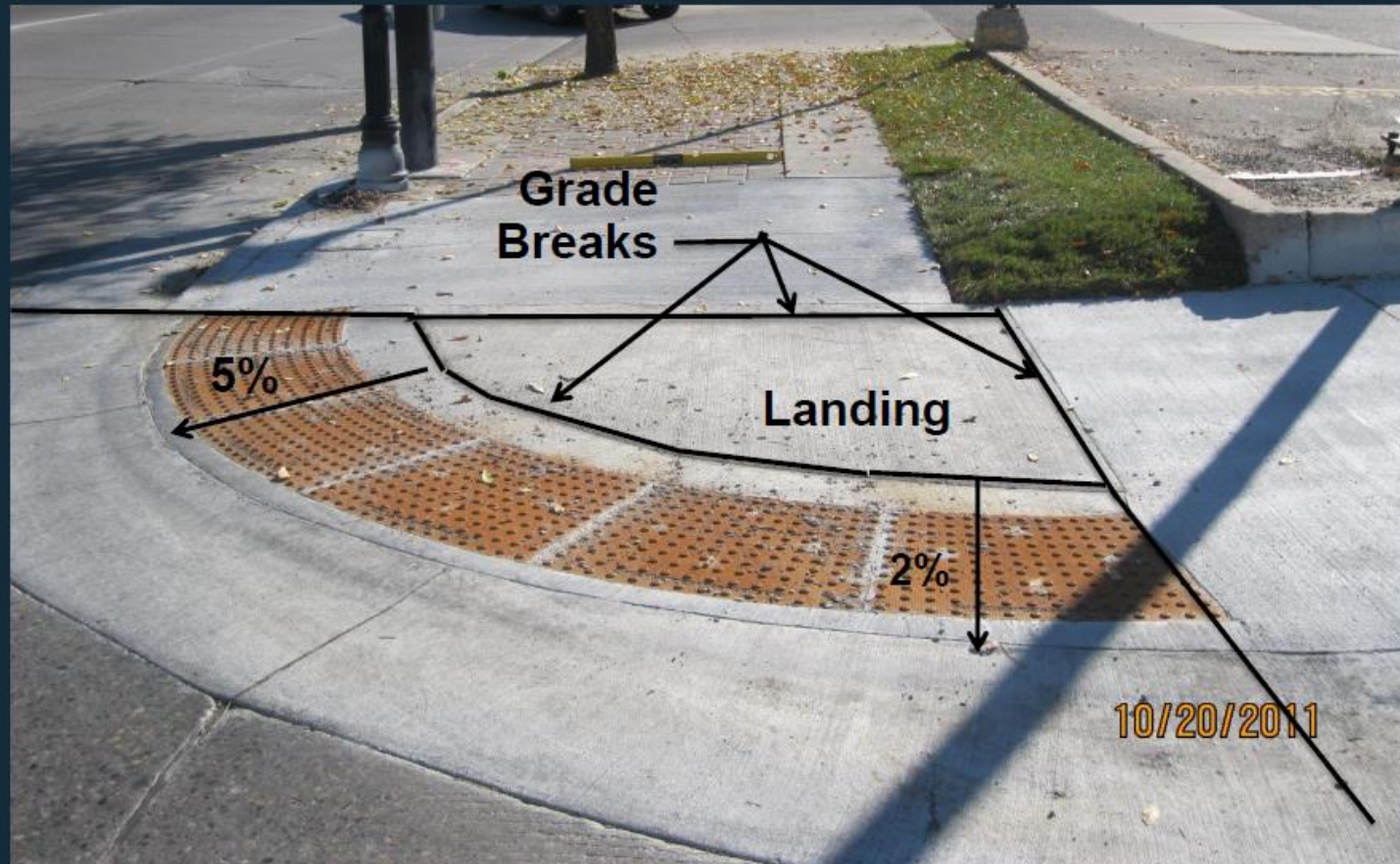
# Application of Curb Ramp

Ramp adjacent to concrete pavement with gutter flow line that exceeds 2%. Make correction over the entire length of the ramp.



# Application of Fan Design

Fan Design with greater than 2% flow line adjacent to concrete pavement.



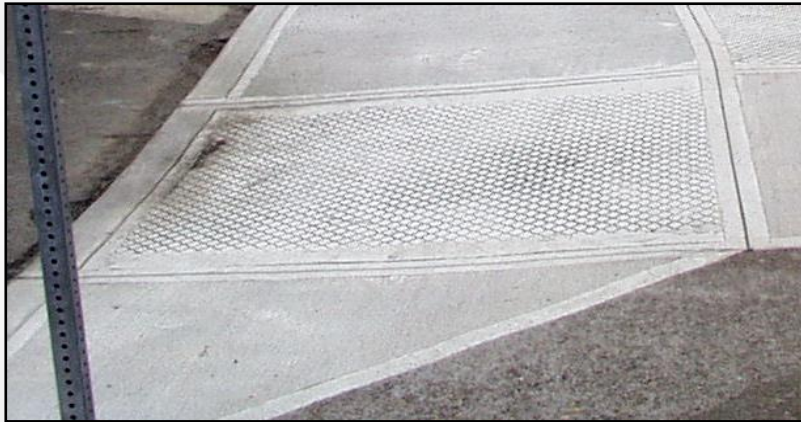
# Application of Curb Behind Sidewalk

Lowering of sidewalk near curb ramp may require curb behind sidewalk

- Good application of 12:1 (8.3%) max flare slopes with walkable surface abutting back of curb



# Curb Ramp DWF Placement Examples



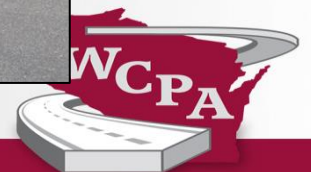
**INCORRECT**



# Curb Ramp DWF Placement Examples



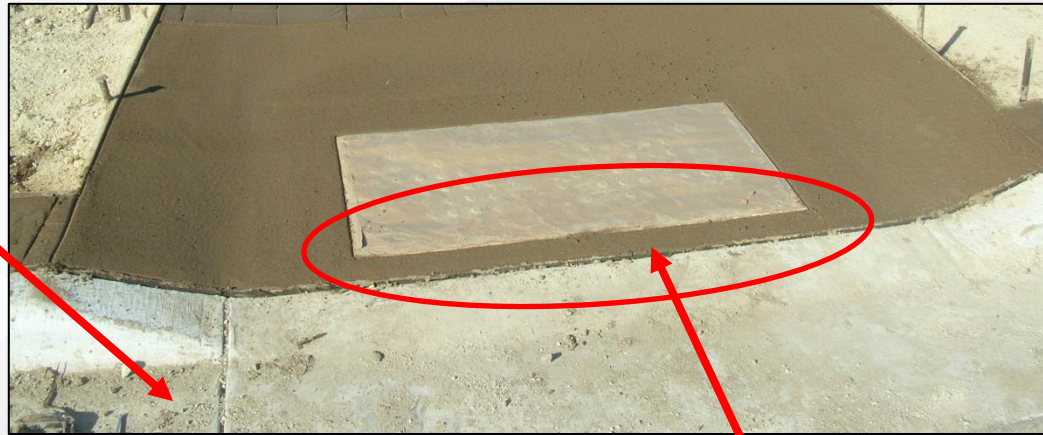
**CORRECT**



# Lay Out Curb Ramp Cuts Prior to Ramp Installation

- The curb ramp layout must occur prior to curb installation.

Curb was installed prior to curb ramp installation



Note: Place DWF panel at back of curb per SDD

# Landing with no more than 2% slope

Provide 5' x 5' flat landing at top of the ramps

- Construct max 1.5% cross slope at intersecting sidewalks



Landing with less than 2% slope in any direction

Lower curb head



# Median/Pork-chop Island Pedestrian Refuge



Desirable – vertical edge



Undesirable – sloped edge

# What about Trails.....?



Yup! ADA Compliance Matters Here Too

# Helpful Tools and Lessons Learned

- Always double check the setting on your smart level
- Some default to degrees instead of percent.....expensive mistake
- **MUST BE SET TO “PERCENT”**

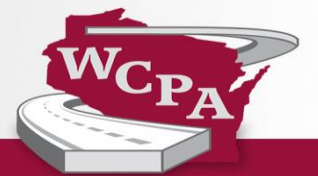
Good



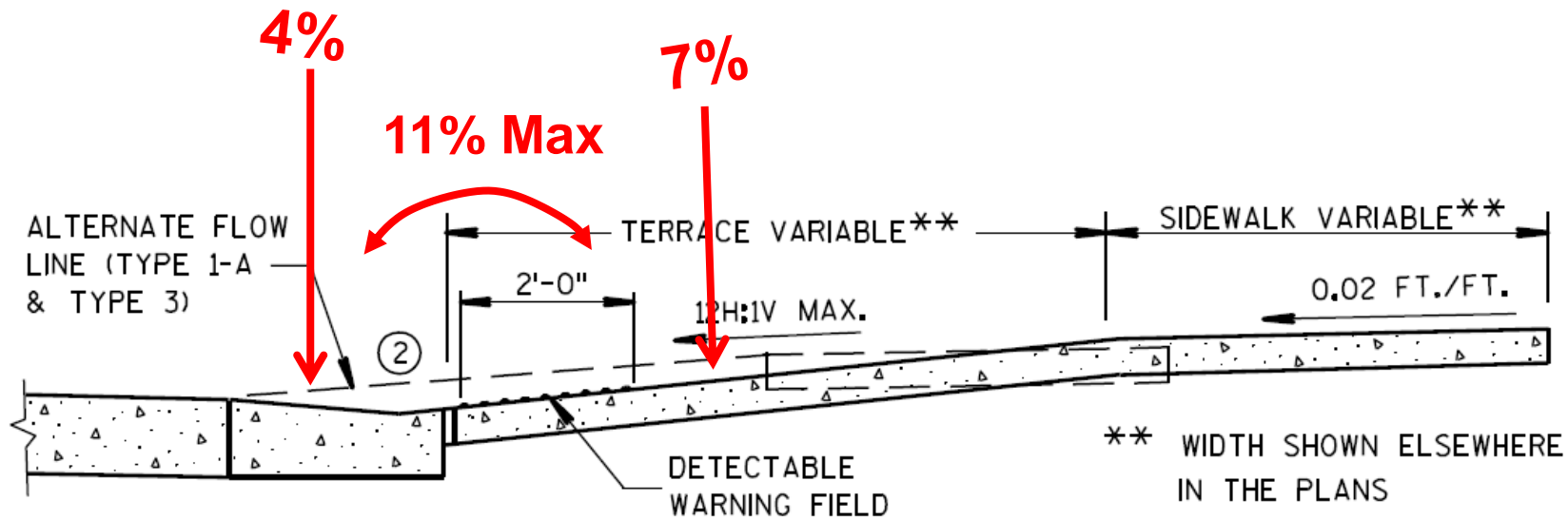
Bad



# Curb and Gutter



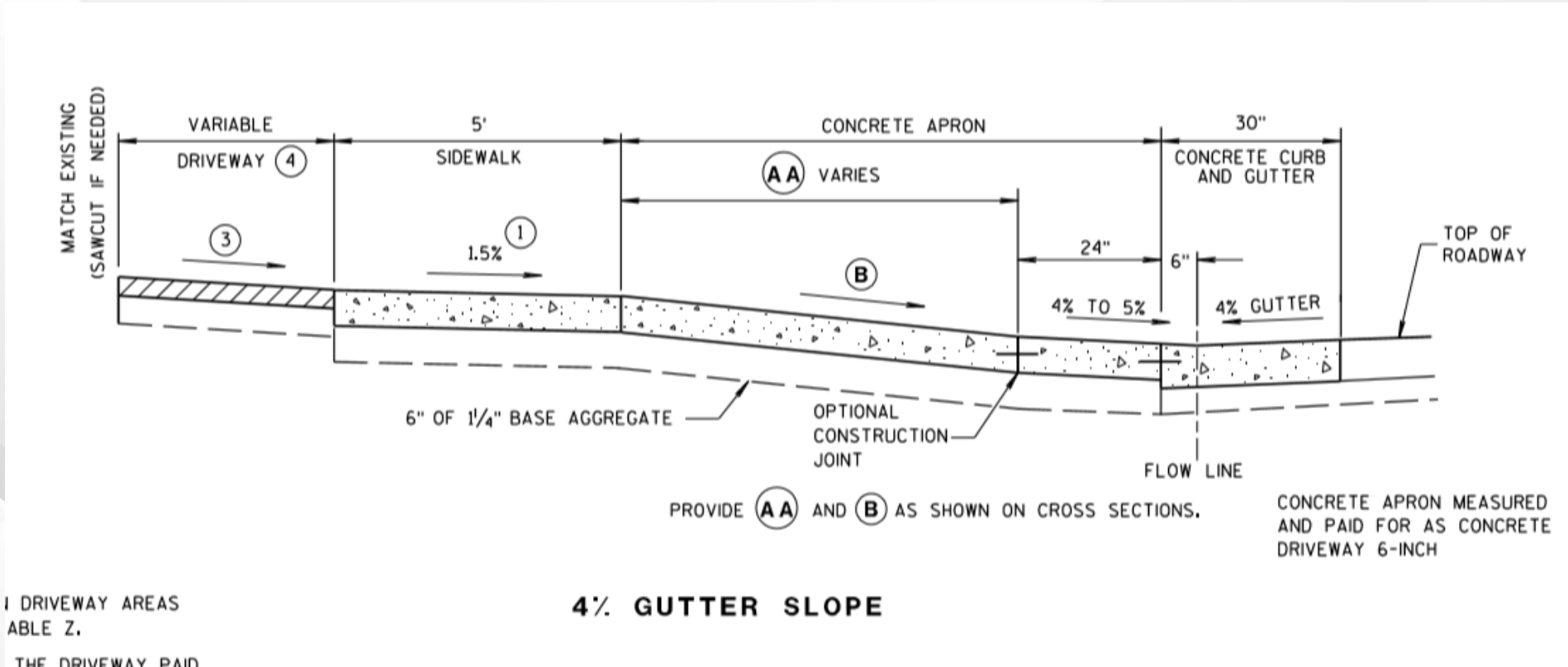
# NEW: Curb Ramp Slope



SECTION B-B

Note: 1.5% sidewalk cross slope required

# Driveway Cross Section (Type Z)

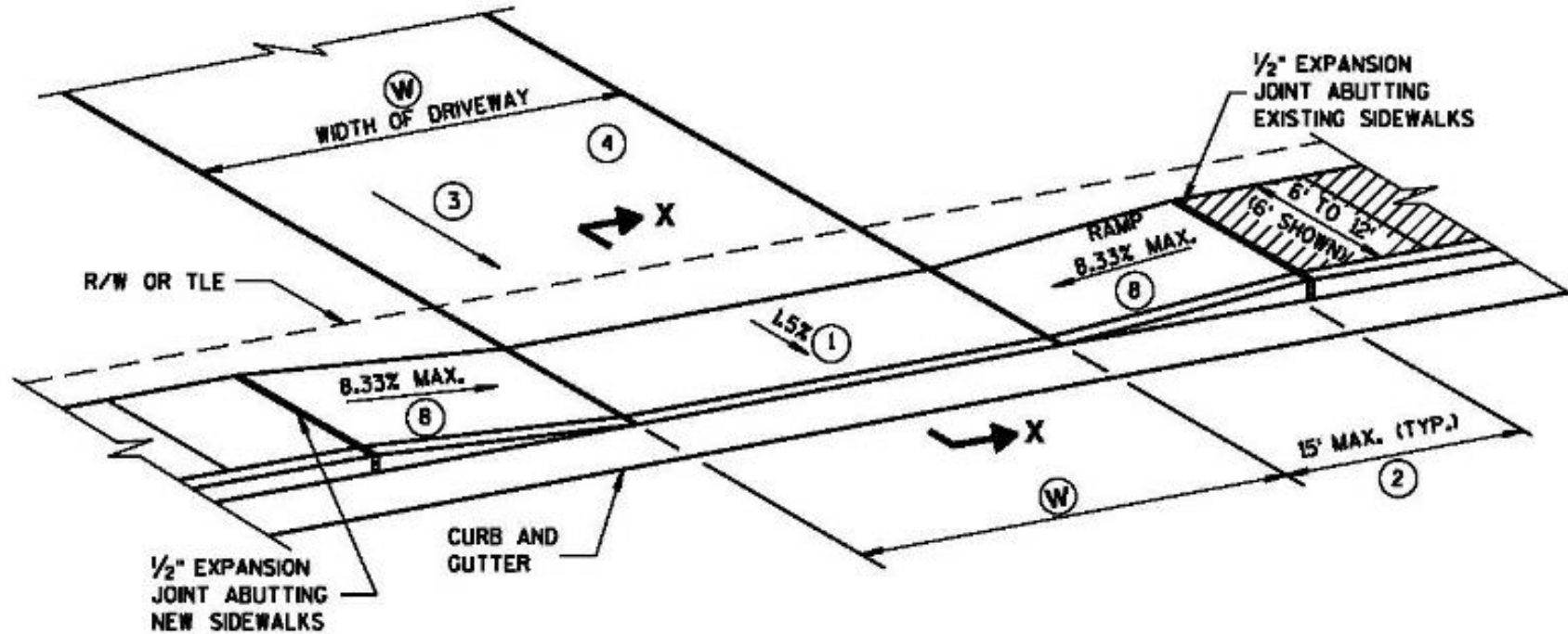


# ADA Requirements for Sidewalks at Driveways

- 1.5 % Cross Slopes on Sidewalk
  - (2 % Absolute Max)
- 7 % Max on Sidewalk Ramps
- 15-Foot Max Length to Match in on Sidewalk Ramps



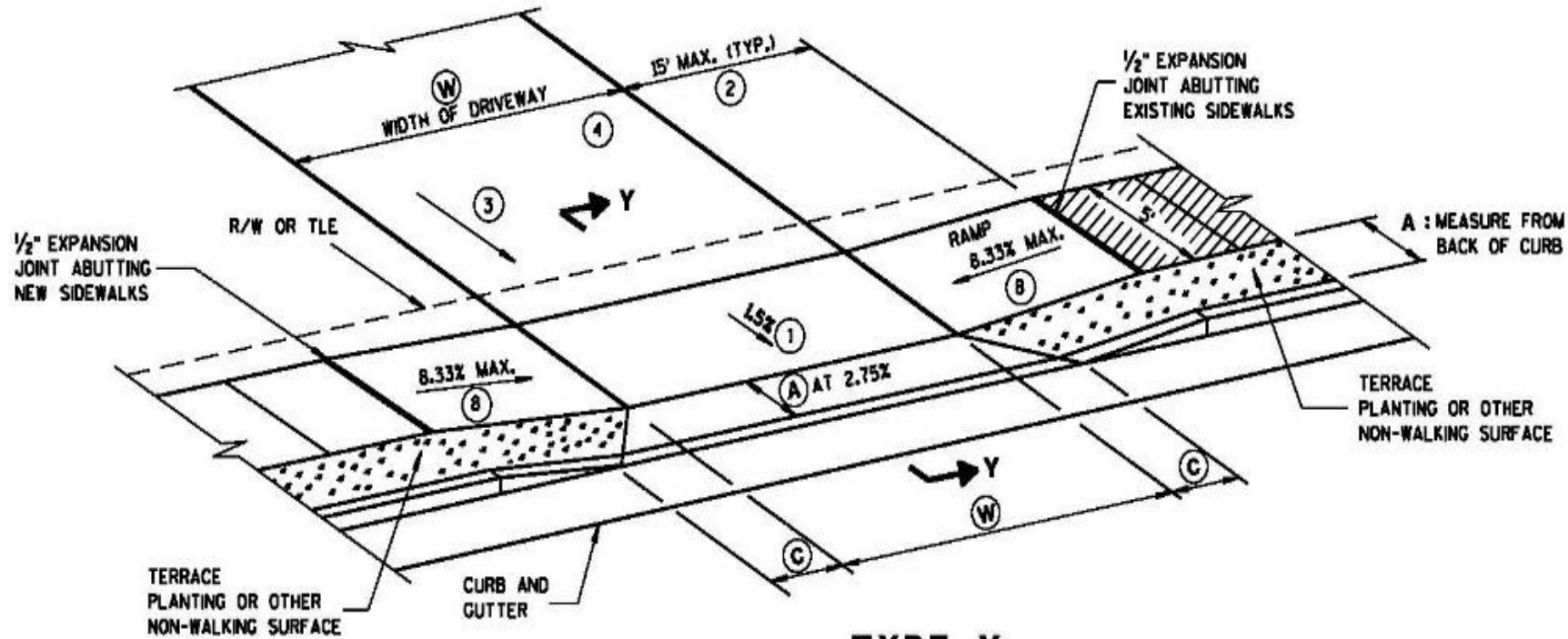
# Type X Driveway—Typical Layout



**TYPE X**  
SIDEWALK ABUTS CURB & GUTTER  
TERRACE VARIES 0 TO 3 FEET

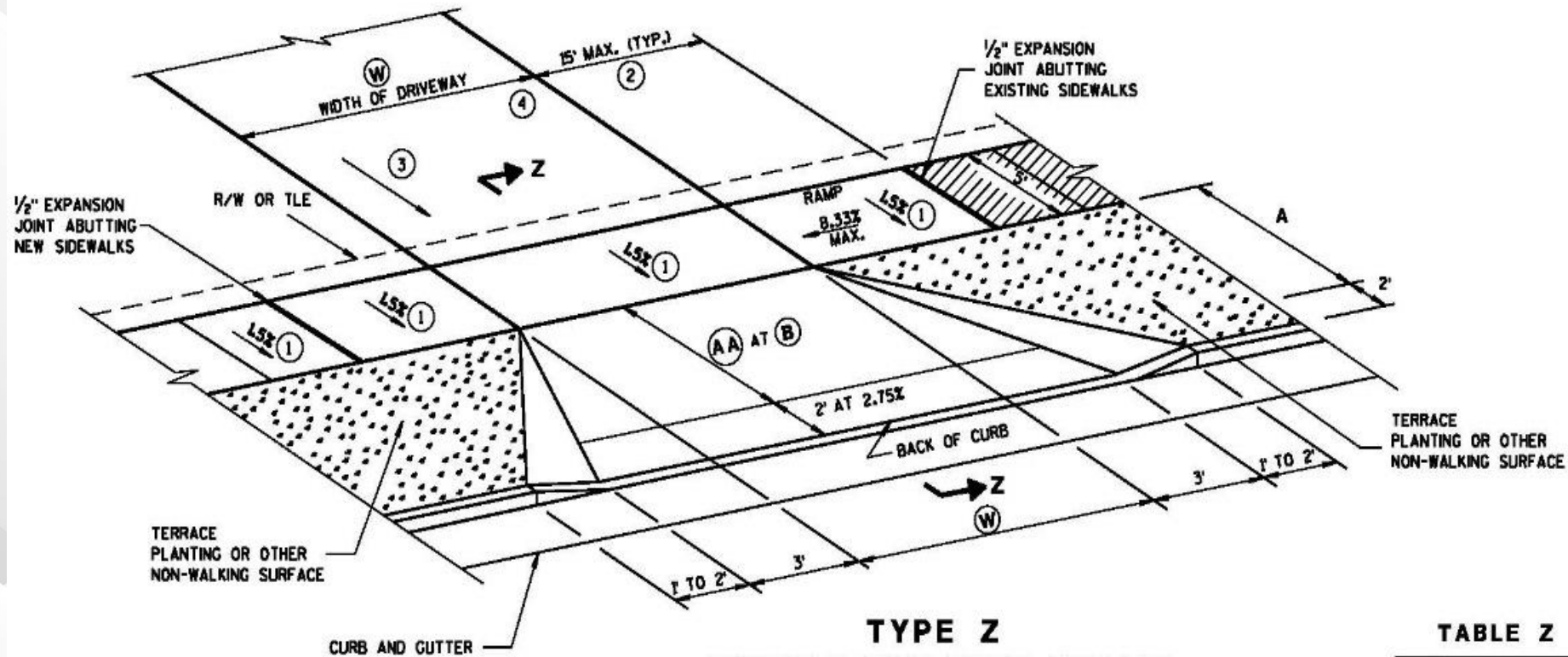


# Type Y Driveway—Typical Layout



**TYPE Y**  
**SIDEWALK WITH NARROWER TERRACE**  
**TERRACE VARIES 4 TO 6 FEET**

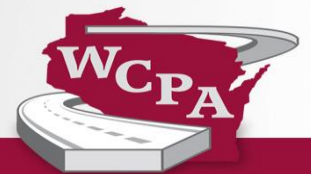
# Type Z Driveway—Typical Layout

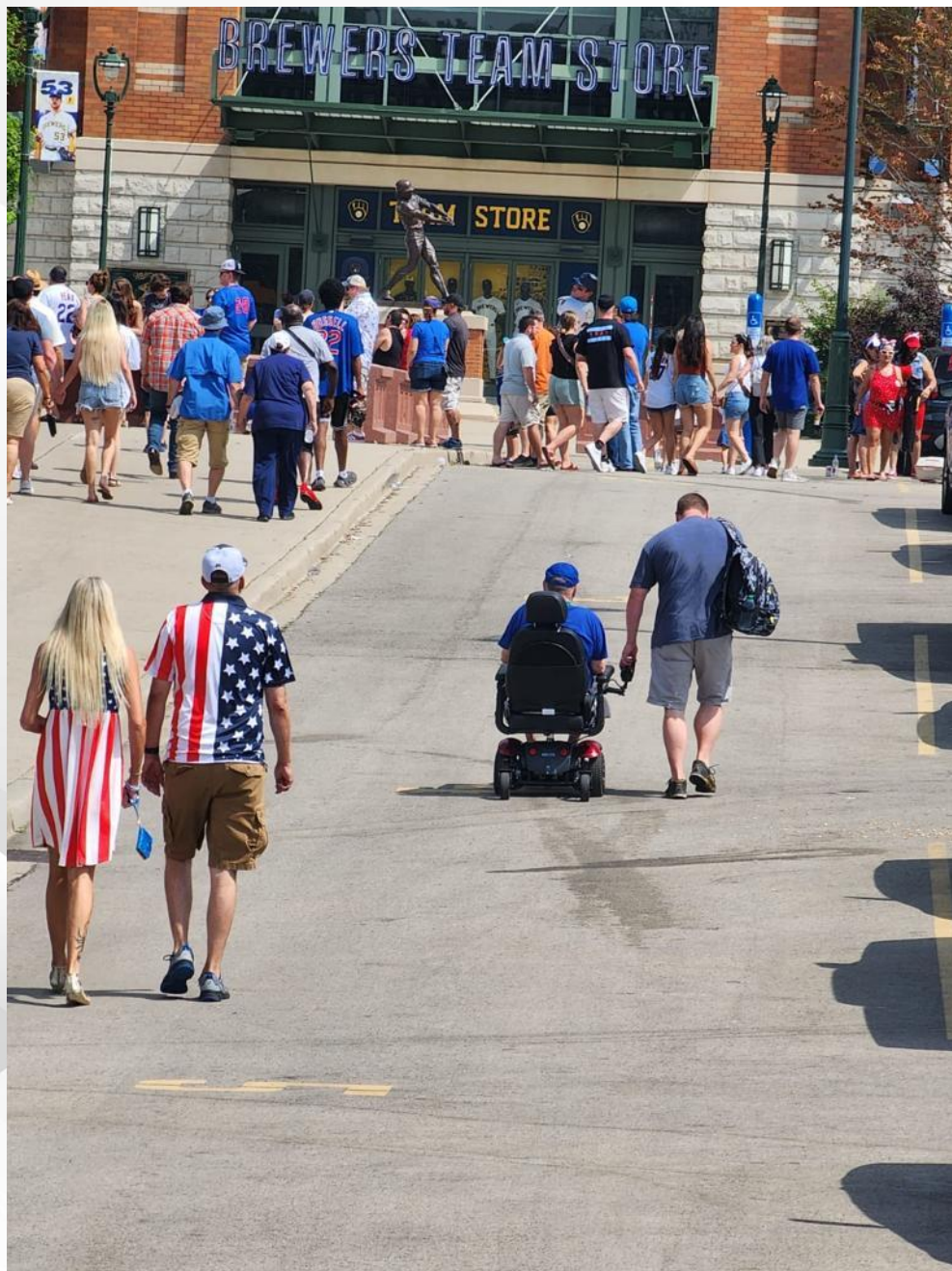


**TYPE Z**  
**SIDEWALK WITH WIDER TERRACE**  
**TERRACE VARIES 7 TO 12 FEET**

**TABLE Z**

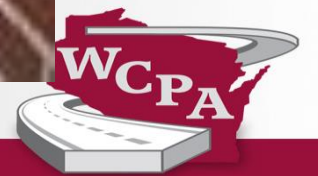
AA FEET	B %
4.5'	1.5%





## The Good, The Bad & The Ugly

# Can a Wheelchair Fit Through?



# Because Access is a Utility!



Because Access is a no-go!



# Because Access is a Refuge?



# Excessive overlays Leaves us Swimming in Noncompliance.....!





# Because We Are Better Than A Path to Nowhere!



# Pedestrian Access During Construction



# Why is it important?

- It's the Law
  - ADA standards
  - MUTCD
- Transportation benefits
- Economic benefits
- Safety benefits



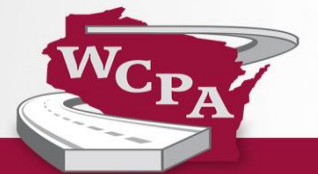
**Not Acceptable**

# Pedestrian Planning Considerations and Accommodation Options

- Affected sidewalks maintain characteristics of existing sidewalks
  - Alternate route if necessary
- Avoid conflicts with construction operations
- Avoid conflicts with mainline traffic
- SDD 15D30
  - Staged sidewalk repair with sidewalk detour
  - Sidewalk detour on parallel route
  - Sidewalk diversion
  - Construct temporary ramps and surfaces



**Not Acceptable**



# Maintaining Accessibility



**Not acceptable**



**Acceptable – If proper width is achieved**

# Avoiding Conflicts with Construction



Not Acceptable



Acceptable

# Avoiding Conflict with Traffic



Not Acceptable



Acceptable

# Pedestrian Channelizing

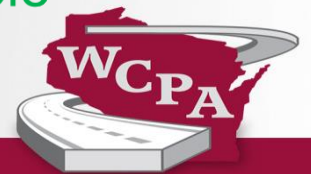
- Provide continuous positive guidance
- Detectable bottom 2" max above walkway, top surface 32" min
- Smooth top surface for hand-trailing
- Close entire width of sidewalk



Not Acceptable



Acceptable





# Temporary Curb Ramps

- Provide continuous positive guidance
- Detectable bottom 2" max above walkway, top surface 32" min
- Smooth top surface for hand-trailing
- Close entire width of sidewalk



# Detectable Warning Field



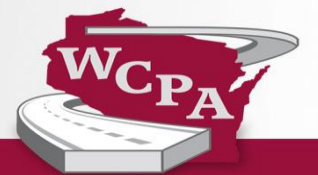
**Acceptable**



**Acceptable**

# Temporary Surfaces

- Provide a smooth, firm, stable, slip-resistant and continuous hard surface
  - Vertical joints no greater than  $\frac{1}{4}$ "
  - Horizontal gaps no greater than  $\frac{1}{2}$ "
  - Maintain 4" min. clear width
- 3 Types
  - Asphalt
  - Wood
  - Metal/Manufactured
- Concrete not included because of issues with finished product



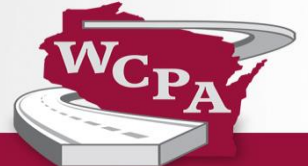
# Temporary Surfaces



Not Acceptable



Not Acceptable



# Temporary Surface



**Improve Edge - backfill**

# Temporary Pedestrian Crosswalk



**Acceptable**

# Drop-offs

- Greater than 6"
  - A barrier should be put up
  - Pedestrian Safety Fence
- Curb Ramps
  - Greater than 3"
  - Vertical panel is required
- Backfill material may be used to slope from the sidewalk



# Bus Stops

- Relocating
- Signed
- Access
  - Temporary crosswalk
- Clean





# Other Safety Considerations

- Impacts to properties fronting the work zone
- Consider the needs of children, particularly if schools or play areas are nearby
- Arrangements for those with restricted mobility and other special needs
- Consider those who undergo surgery or those who lose their mobility.



# Thank you!

