Session 54

Dean Perkins

FL. Dept. of Transportation CO

Condensed Version of ADA for Structures Design BT-05-0093

Topic Description

This session covers how the requirements of the Americans with Disabilities Act (ADA) apply to structures design projects. The discussion includes the impact of these regulations on pedestrian facilities within structures design and construction projects and the responsibilities of structures design and construction personnel in providing access to persons with disabilities. Specific examples of projects are illustrated.

Speaker Biography

An architect since 1984, Dean Perkins joined FDOT in 1988. He was appointed as the FDOT's statewide ADA Coordinator in January 1992. As such, Dean was principle in initiating changes to Department policies and practices relating to accessibility for persons with disabilities in agency building facilities and on the state road system. Currently working in the Structures Design Office, Dean is responsible for assuring Department compliance with state and federal accessibility regulations. He has helped develop accessibility standards for building, roadway and bridge projects, and conducts training in accessibility requirements for persons with disabilities.

Americans with ADA Disabilities Act

and Florida Accessibility Code

Application for Structures Design

Introduction

- What is ADA?
- Features of Accessibility
- How ADA impacts Bridge Structures
- Examples of FDOT structures projects
  - The Good, the Bad, the Ugly
- How you can help us comply

Background of the ADA

- ADA - Civil Rights Law
  - 1964 - 1990 Federal Laws
    - 1964 Civil Rights Act
    - 1968 Architectural Barriers Act (federal buildings)
    - 1973 Rehabilitation Act (s. 504 - federal programs)
      - If you receive federal funds – you're a federal program
      - Includes services, programs, activities, buildings, facilities, roads, bridges, etc.
    - 1990 Americans with Disabilities Act
      - July 26,1990 - signed
      - July 26, 1991 - implemented (ADAAG)
      - January 26, 1992 – effective date
      - January 26, 1995 – deadline
      - **July 1, 1994 – new final rule – enforceable stds.**
      - **July 26, 2004 – new guidance**
      - **Nov. 23, 2005 – new PROW guidance**

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Mobility Aids

- White Cane
- Walker
- Crutches
- Wheelchair
  - Powered
  - Non-powered
- Scooter
- Service animal

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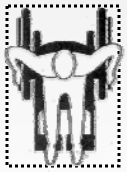
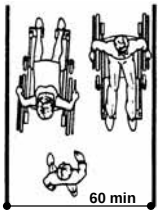
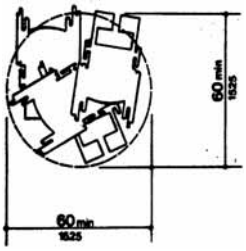
Wheelchair & Scooter

- Space needed
  - 30″ x 48″ min. maneuvering space
  - 60″ turning diameter
  - 60″ to pass another wheelchair
  - 48″ to pass a pedestrian







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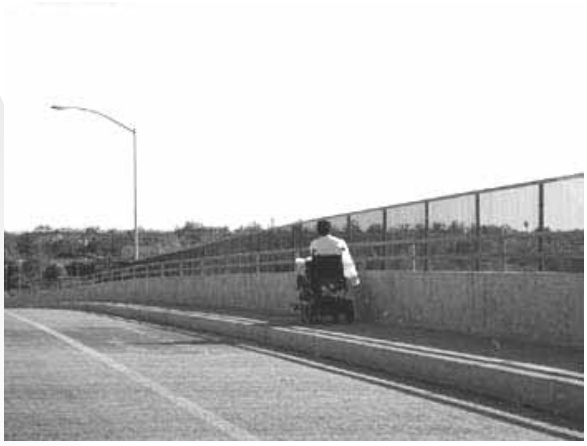
Transportation…….



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Components of Accessibility

- **Accessible Routes**
- Surfaces
- Sidewalks
- Protruding Objects
- **Ramps** / Stairs
- Curb Ramps

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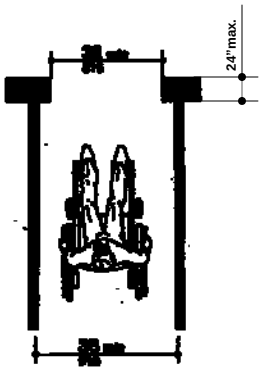
Accessible Routes

- 36″ continuous unobstructed path
  - 48″ proposed
- 32″ min. at a ‘point’ (24″ max.)
  - 48″ proposed
- 60″ x 60″ passing space @ 200′
- Slopes:
  - ≤1:20 is not ramp
  - >1:20 is ramp
  - 1:12 max. allowed
- Cross-slope
  - 1:50 max. allowed



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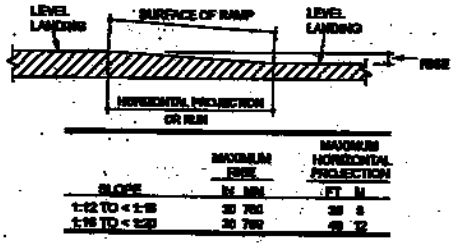
Ramps – Slopes, etc.

- Ramp Slope - 1:12 (8.33%) max.
- Cross-slopes - 1:50 (2%) max.
- Level Landings – every 30-40 feet
  - A place to rest
- 2″ curb/bottom rail



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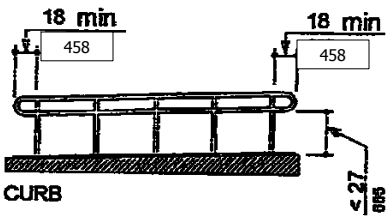
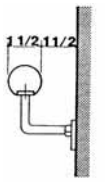
Ramps - Handrails

- 1¼″-1½″ o.d. pipe *(2″ proposed)*
- 34″ - 38″ high to top of pipe
- 18″ horizontal extension top & bottom





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July 06 ADA & Structures Design 11

Features Effecting Accessibility on Bridges

- Ramp Landings
- Sidewalks
- Barriers / Parapets
- Railings
- Stairs / Steps
- Overlooks
- Expansion Joints
- Drainage Grates
- Scuppers
- Gates

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Ramp Landings (on bridges)

- USDOT/FHWA statement:

  (regarding pedestrian facilities on bridges – approach & structure)

  "...a bridge would fall under the provisions of ADAAG 4.8 RAMPS.

  4.8.2 SLOPE AND RISE states:

  - *The **least possible slope shall be used** for any ramp.*
  - *The **maximum slope** of a ramp in new construction shall be **1:12**.(8.33%)*
  - *The **maximum rise** for any run shall be **30 in.***
  - *Ramps between **1:12 to 1:16**, the maximum allowable distance is **30 ft.***
  - *Ramps between **1:16 to 1:20**, the maximum allowable distance is **40 ft.**"*

  Barbara McMillen
  Federal Highway Administration
  Washington, DC

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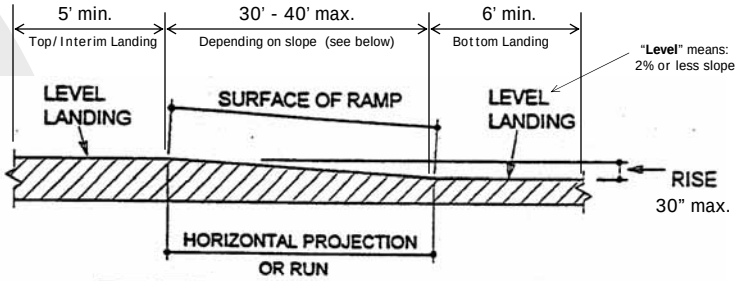
Ramp Landings



SLOPE	MAXIMUM RISE IN	MAXIMUM RISE MM	MAXIMUM HORIZONTAL PROJECTION FT	MAXIMUM HORIZONTAL PROJECTION M
1:12 TO < 1:16	30	760	30	9
1:16 TO < 1:20	30	760	40	12

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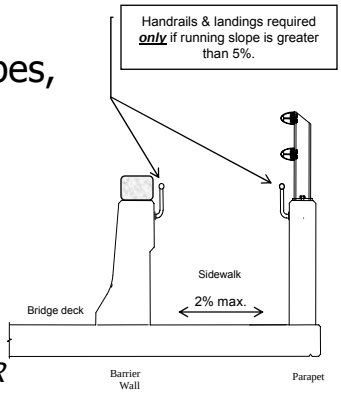
Sidewalks – Flush

- Match bridge grades, slopes, cross-slopes, etc.
- Issues for accessibility
  - **OK**
    - if 5% or less grade *AND*
    - if 2% or less cross-slope
  - **ADA violation**
    - if greater than 5% grade *OR*
    - If greater than 2% cross-slope



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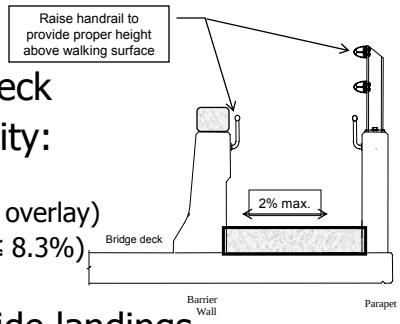
Sidewalks – Raised

- Overlay on bridge deck
- Issues for Accessibility:
  - Approach
  - Transition (from deck to overlay)
  - Running Slopes (> 5% ≤ 8.3%)
  - Cross-slopes (≤ 2%)
- Opportunity to provide landings
  - For bridges: ≤ 8.3% (ramp) = ≤ 7.1% (bridge deck)
- Added weight to bridge structure
  - Sidewalk Overlay
  - Raised Barrier Wall



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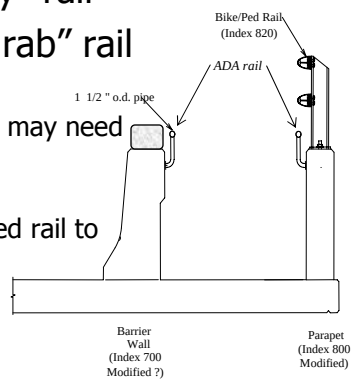
Railings

- Bike/Ped rail is a "safety" rail
- Also need ADA "hand/grab" rail
  - **Only** at 'ramp' areas (>5%)
  - Person with balance problem may need rail to stabilize him/herself
  - Person with difficulty climbing/descending may need rail to pull up, etc.



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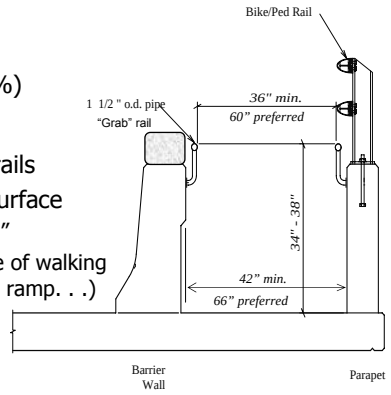
Railings

- Traffic barrier wall needs 'personalization' for pedestrian use
  - Only at ramp areas (>5%)
- Handrail / Grab rail
  - 36" min. clear between rails
  - 34"-38" above walking surface
    - Recommend hold @ 34"
    - Rail MUST follow profile of walking surface (ramp, landing, ramp. . .)



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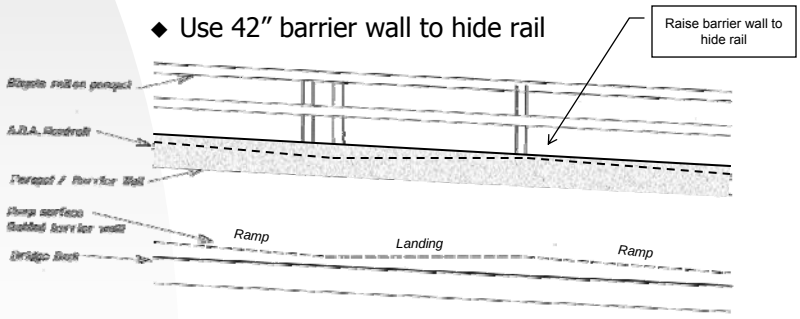
Railings

- Aesthetics / Looks / Safety
  - ADA 'hand' rail behind barrier wall
  - Not crash-tested
  - Use 42" barrier wall to hide rail



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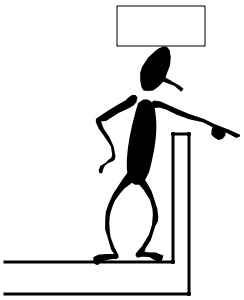
Overlooks



- Level area to rest or pause and look at scenic view
  - Maneuvering area
  - Seating(?)
  - Passing space opportunity
    - If sidewalk < 5'-0"
      - 5'-0" x 5'-0" min.
      - 200' max. separation

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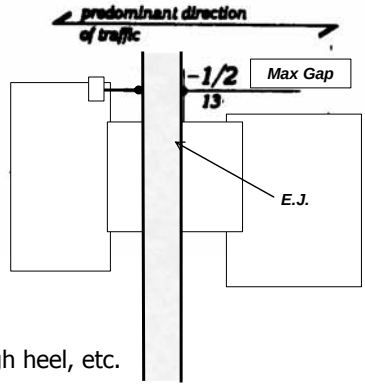
Deck Joints & Gaps



- Similar to gratings
  - ½" Max. gap
  - Unless "*technically infeasible*"
    - Up to 1 ¼" single gap
- May be snagging hazard
  - Wheelchair
  - Crutch, walker
  - 'dragged' foot
  - Roller blade, baby stroller, high heel, etc.
- Overlay joint with 'sliding plate'

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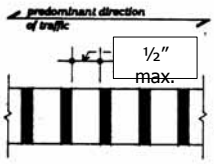
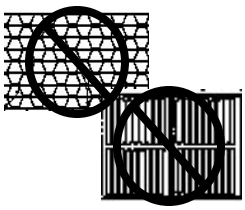
Drainage Grates





- Generally grates need to be out of pedestrian path
- If in pedestrian path, ***must*** meet grating limitations of ADA
  - Maximum of ½" openings between grating members, perpendicular to direction of ped traffic
  - *Neither steel (reticuline) nor cast iron (slotted) grate meets ADA!?!*
- Overlay expanded mesh on grate?

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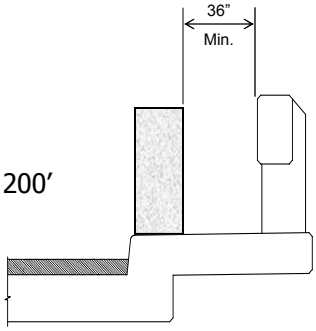
Safety Retrofits

- When adding new barrier wall to existing bridge. . .
  - This is an "alteration"
  - MUST maintain/provide accessibility
    - 36" min. path
    - 5'x5' passing space @ 200'



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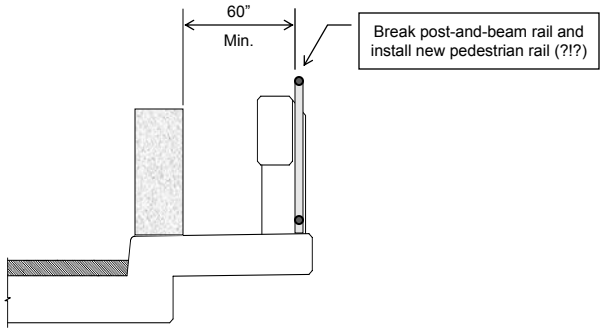
Safety Retrofits

5'x5' Passing space @ 200'



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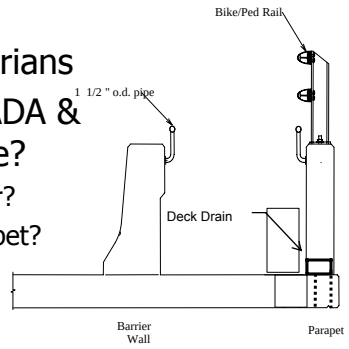
Scuppers

- Issues for Accessibility:
  - Open hole in deck
  - Warnings for pedestrians
  - What will work for ADA & still provide drainage?
    - Make the holes smaller?
    - Hide them under parapet?
    - Shield them with…?



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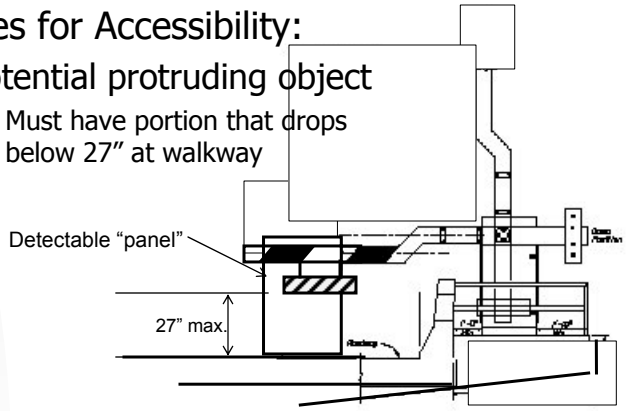
Gates

- Issues for Accessibility:
  - Potential protruding object
    - Must have portion that drops below 27" at walkway



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Actual Examples

- the Good,
- the Bad,
- the Ugly……

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Uuuugly Examples

- Non-compliant
  - Design errors(?)
  - Construction errors(?)

July 06 ADA & Structures Design 28

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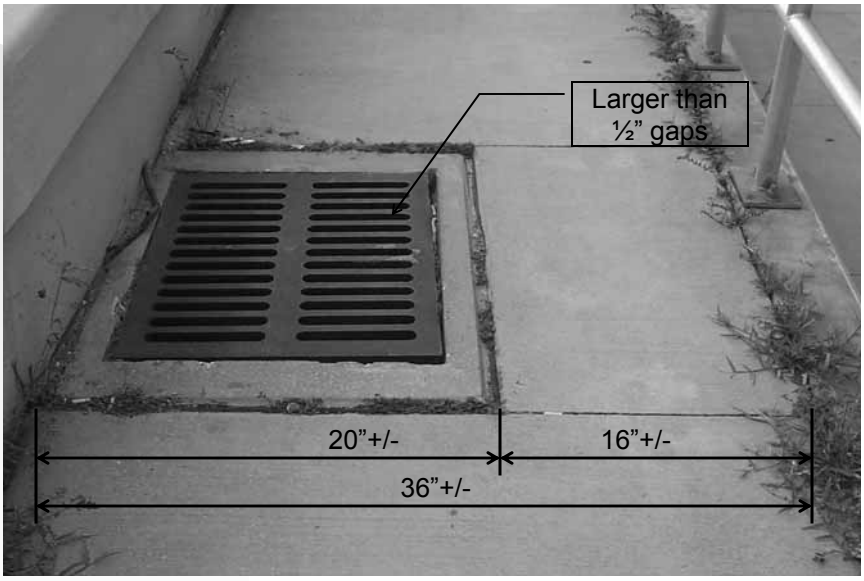
July 06 ADA & Structures Design 30

July 06 ADA & Structures Design 31



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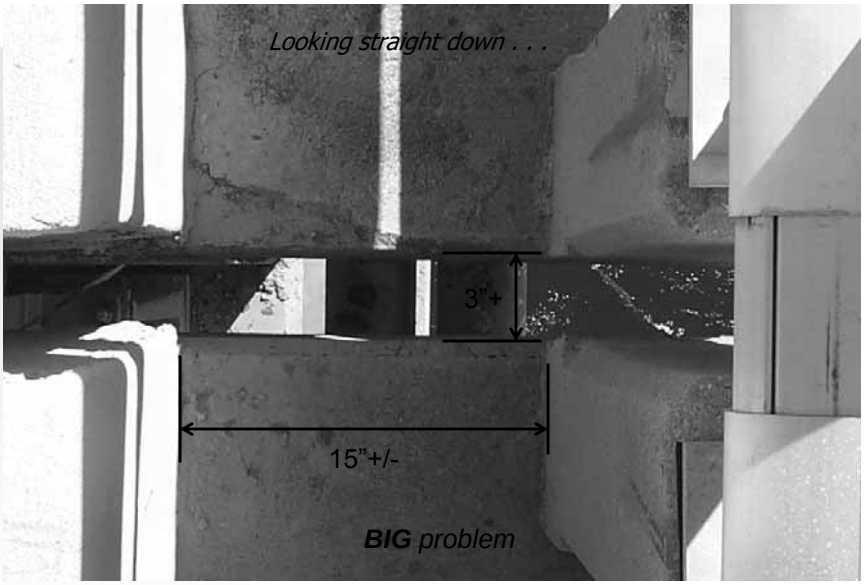

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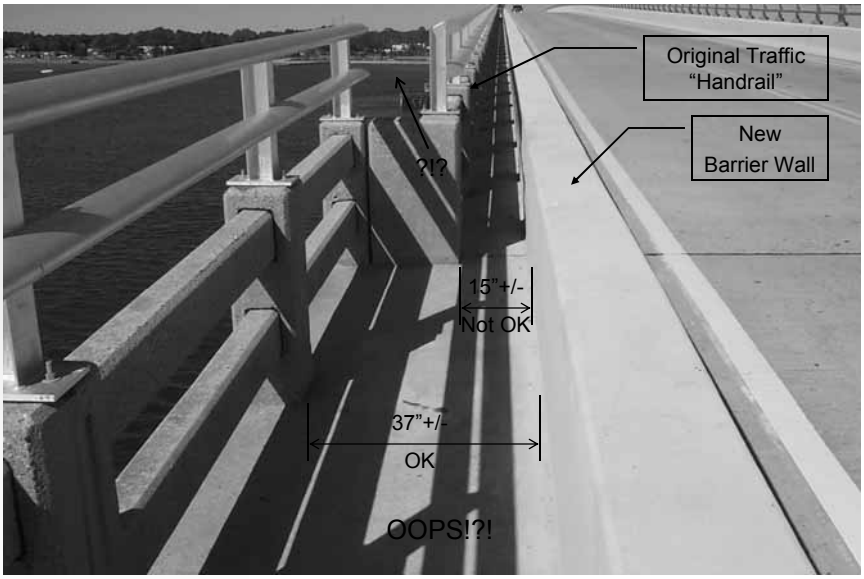

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Bad **(so-so?)** Examples

- Non-compliant? / Compliant?
  - Some are hard to tell
  - Design Errors(?)
  - Construction Errors(?)

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Approach, Handrails, Cross-slope, etc.

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Steeper than 5% -- Handrail too low or missing.

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Drainage Grate in Structure

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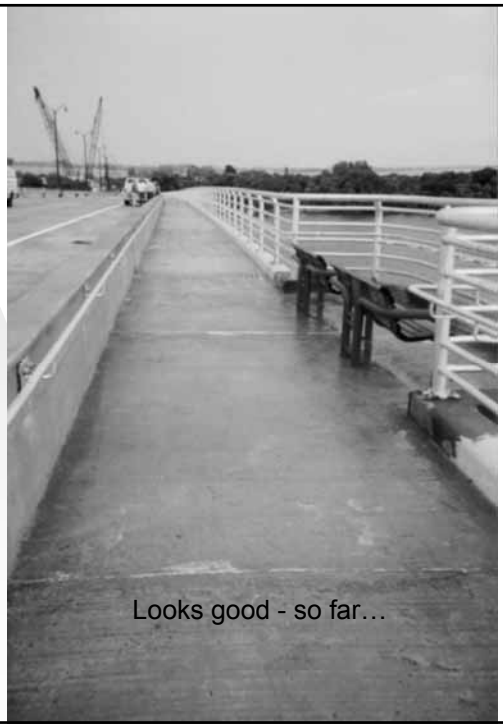
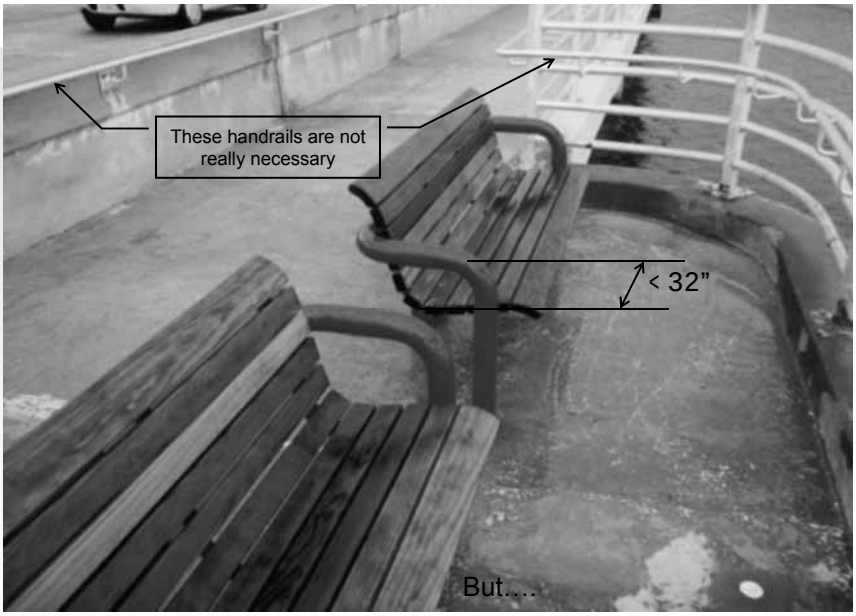
July 06 ADA & Structures Design 39

July 06 ADA & Structures Design 40



July 06 41



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Good Examples

- Compliant
  - Good-looking
  - Design excellence
  - Construction excellence

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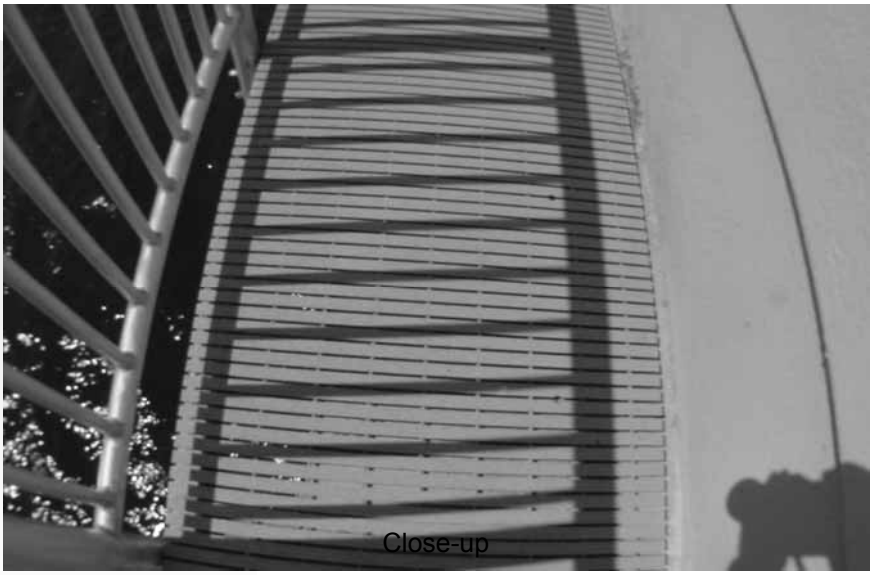
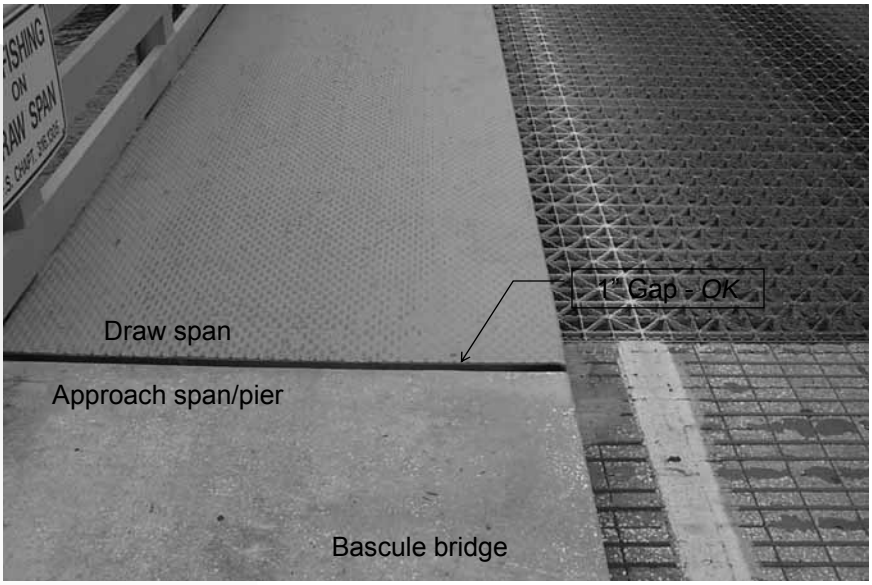
July 06 ADA & Structures Design 46



July 06 ADA & Structures Design 47

July 06 ADA & Structures Design 48

July 06 ADA & Structures Design 49



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Watch out for…

- Unforeseen conditions *(of course!)*
- Last minute changes (E&O?)
- Contractor change requests
- Value-engineering change proposals
- Hurried or sloppy work (E&O?)

- ***Unintentional violations of ADA***

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Help is available

- **State:**
  - FDOT District ADA Coordinator
  - FDOT ADA Coordinator

- **Federal:**
  - U.S. Architectural & Transportation Barriers Compliance Board (Access Board)
  - U.S. Department of Justice
  - U.S. DOT / FHWA

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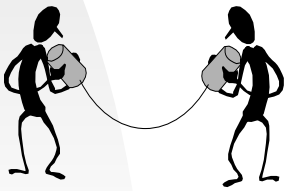
Contact us…



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or

Your District
ADA Coordinator(s)

Thank You!

Danke Schön!

Arigato!

Shokran!

Xie Xie!

Gracias!

Dhanya Vaad!

Merci!

Live long and prosper!

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