INDOT ADA TAC Technical Inquires for Curb ramps and MOT for Pedestrians

Herbert Davis PE
Sr. ADA Review Engineer
A Technical Inquiry is needed when an element of a proposed curb ramp does not meet ADA requirements

See list (a thru h) in IDM chpt. 40-8.04(01) item 3b what should be submitted

Most important things to submit
1.) Proposed curb ramp design showing slopes, elevations, lengths, and ADA elements that do not meet ADA guidelines. Also provide counter slopes and existing profile of streets that surround ramp
2.) Existing plan drawing showing existing slopes and lengths of existing curb ramp
3.) Reason why curb ramp can’t be designed so that ADA element will meet requirement
Designer submitted Technical Inquiry

TI for 10% running/cross slope and 2% top of ramp cross slope that exceeds INDOT preferred.

Existing building Concrete Column

Designer states running/cross slope made +10% due to Existing column and desire to Provide level TS
ADA TAC reply back to designer

Proposed design calls for removal of existing crossing and removal of non-ADA compliant ramps in NE and SE quadrants.

ADA TAC response to designer was to provide Design which provides crossing of Main St. and a ADA compliant receiving ramp in the SE quadrant. Also can’t impede pedestrians in order to improve Turning radius for vehicles.
ADA TAC denied ramp design in NE quadrant
Due to 19.7% slope.
Designer 2nd response and ADA TAC response

ADA TAC response that this actually a diagonal ramp
And there is no give in radius which was discussed
With designer previous meeting

ADA TAC would accept if +8% slopes could be
Reduced to 5% or less. Also need to make sure
That turning movement that occurs at bottom of
Ramp is outside parallel vehicular traffic and is
Stripped correctly
Designer 3rd response and ADA TAC reply

Resubmitted design in response to ADA TAC

ADA TAC reply
Show break line at blended transition
See if two perpendicular design can work
If two elevations bottom ramp crossing Main
Can be verified
Designer 4th response and ADA TAC reply

Designers revised design
Approved ADA TAC for slopes of TS more
Them INDOT preferred
Examples Technical Inquiry not to submit
1st example Technical Inquiry not to be submitted

Do not submit Technical Inquiry for a running slope that exceeds 8.33% if the algebraic summation of the running slope and counter slope exceed 13.33%
Do not submit Technical Inquiry for a cross slope at a street crossing that exceeds INDOT preferred value for cross slope but is still less than maximum allowed.

Ex: If cross slope at street crossing ramp is 1.7% for a stop or yield control a technical inquiry is not needed since the maximum allowed is 2% to meet ADA requirement.
3rd example Technical Inquiry not to be submitted

Do not submit Technical inquiry if the transition cross slope to tie into existing walkway is > 2%
Pedestrian MOT

- Sidewalk Closed Ahead
- Cross Here
- Sidewalk Closed
- Sidewalk Closed Use Other Side
- Pedestrian Crosswalk
- Road Work Ahead
- Sidewalk Closed Cross Here

Temporary Curb Ramp - Parallel to Curb:
- 2 - 4 in. width edge marking
- 6 in. maximum height
- Protective edging

Temporary Curb Ramp - Perpendicular to Curb:
- 2 in. minimum edge treatment
- Protective edging
- Side街上

[Image of road works with signs and barricades]
When MOT for Pedestrians required

- PROWAG requires that when a pedestrian circulation path is temporarily closed by construction, alterations, maintenance operations, or other conditions, an alternate pedestrian access route complying with sections 6D.01, 6D.02, and 6G.05 of the MUTCD.

- MUTCD states that if the movement of pedestrians is affected then adequate pedestrian access and walkways shall be provided.

- MUTCD also states that extra distance and additional pedestrian street crossings of should be avoided when detouring pedestrians around a construction area.
Examples of MOT for Pedestrians

Pedestrian MOT Detour and Temporary Crossover

Pedestrian MOT Detour and Diversion Pedestrians to temporary PAR shared with traffic
Temporary Path MOT Pedestrians

Example Temporary Path that meets criteria to be firm, stable, and slip resistance. Also can be detected by visually-impaired pedestrians.

Example of dirt trail being used as a Temporary Path. Does not meet criteria of firm, stable, and slip resistance. It is also not easily detectable.
What to submit on plans when proposing a Temporary Path

- Lay out path on plan sheet showing where it begins and ends
- Provide USP which describes temporary path material and ramp and how it meets criteria to be firm stable and slip resistant
- If using crushed stone should include a maintenance schedule to keep loose stones or depressions forming in path
What to do if MOT for Pedestrians can’t be provided

• Submit Technical Inquiry for MOT
  Provide nature of project and all Pedestrian MOT applications tried and why they can’t work.

• Also submit Technical Inquiry if detour provided exceeds length shown Fig 6H-29 MUTCD for a detour of a pedestrians by crossing them over to a parallel sidewalk
MOT for Pedestrian Case Studies
Technical Inquiry request to not provide pedestrian detour along portion of SR 14 during a small structure replacement project.
Designer states that an alternate pedestrian path can't be designed to maintain PAR across Elm Street on south side SR 14.
Proposed plans

Existing sidewalk closed during project duration.
Reply back to designer after ADA TAC meeting is to leave the existing sidewalk and stairs in place while new sidewalk is constructed.
Designers reply

Portions of proposed sidewalk are directly above existing sidewalk therefore preventing maintaining pedestrian flow on existing path during construction of project.
TAC reply to designer

Provide temporary crossing along with temporary surface west of structure (would require temporary r/w)

Provide temporary surface from existing sidewalk to Elm St. and from Elm St. to existing sidewalk

Construct south side of project. Then construct north side of project.
Designer reply to TAC recommendation

Designer proposed similar north side south side construction but no temporary R/W needed

Construct temporary sidewalk on south side of SR 14.

After temporary sidewalk is constructed complete road work and grading on north side SR 14 and install entire structure
Designers reply continued

After north side is constructed detour pedestrians to walk on completed north side of SR 14 while road work and grading is constructed on south side SR 14

Designer noted this would add about 30 to 40 days to construction time

Area engineer did not like pedestrians on SR 14 in phase 2 of plans because of close proximity to Crane and its counterbalance needed to install piles which would be on SR 14
Phase 1: Construct north side structure replacement and maintain pedestrian traffic on existing sidewalk south of SR 14.

Phase 2: Construct a portion of new sidewalk on south side of SR 14. Construct temporary walkways from existing sidewalk on north side and portion of new sidewalk recently constructed on south side. Also provide temporary walkway surface from Elm St. to existing walkway. Then finish constructing south side of structure replacement.

Note: This phase construction will add 20 to 30 days to the construction time for this project which ADA TAC feels is in the best interest for the pedestrians of the city.
Case Study No. 2

Project
Intersection improvement project at intersection of N. Smith Pike Rd./W. Woodyard Rd and intersection of N. Curry Pike Rd./W. Woodyard Rd.

Proposed Design
Construct roundabouts at intersections N. Smith Pike Rd./W. Woodyard Rd. and N. Curry Pike Rd./W. Woodyard Rd.
Proposed Roundabouts
Technical Inquiry submitted

Technical Inquiry: Request to not provide temporary pedestrian route during construction of roundabouts.
Reasons provided for TI request

- A detour route is infeasible due to lack of sidewalk on adjacent roadways.
  - Existing sidewalk does not continue north of SR 46 (no crossing)
  - Adjacent N/S running roadways do not have sidewalk
  - There is minimal pedestrian traffic currently due to low density and lack of major trip generation centers.
- Temporary sidewalk is infeasible due to amount needed and lack of survey
  - The first phase of construction requires the existing sidewalk within the project limits to be removed for construction.
  - There is no existing sidewalk on east side of Curry Pike.
  - Nearest intersections allowing safe pedestrian crossings are 0.75 and 0.60 miles away respectively (Vernal Pike, SR 46) and would require over a mile of “temporary” sidewalk to be constructed outside of the project limits.
  - This would require survey that the project does not have to ensure acceptable temporary sidewalk can even been installed.
Request denied not to provide pedestrian detour during construction. Suggest a temporary route be constructed, shown in red, inside R/W limits and outside construction limits.
Designers response

- The proposed temporary route would be on top of the proposed final sidewalk
- There is not sufficient space within the R/W to provide an adjacent path with appropriate setbacks from active construction
Proposed solution during meeting w/designer

Provide temporary path on existing Curry pike not under construction in phase 1 with barriers on both sides.
The recommendation to create a pedestrian path during phase 1 is possible. However, in phase 2 of construction a pinch point is created which narrows the width of traffic lanes to 10.5’ for 60’ at the beginning and 54’ at the end.
Conversation with designer if 2’ distance can be reduced to 1’ then pinch points would not occur. Subsequent conversation with INDOT work zone this can be done
ADA compliance vs. Historic/Cultural Impacts
Existing ramp location Rushville

Diagonal Ramp NE corner SR3/Main St. and SR 44/2nd St.

Serves two directions of crossing with pedestrian pushbutton.
Existing slopes current curb ramp

ADA Non-compliant issues
No ADA Turn Space behind ramp
No Pedestrian Pushbutton clear Space for existing pushbutton
Proposed Design No. 1

Designer proposed ADA compliant Blended transition and Pedestrian Pushbutton Clear space for existing Pushbutton

Technical Inquiry submitted for Casting in Pedestrian Access Route

Design lowers sidewalk in front of Historic Building which is not ADA issue but could Alter character of building

Submitted design to INDOT Cultural Resource Office for input into design
Cultural Resources Form

Cultural Resources Office Review Form
General Project Information

Date of submission:

Project Designation Number (Dec. No.).

Killed Projects (Dec. No. & Contract No.)

INDOT Project Manager Name:

Consultant Project Manager:

Project Designer(s) Name:

Technical Advisory Committee Contact Person: Herbert Davis

Route Number (if applicable):

Civil Township/City/County:

Project Description:

Specific location(s) of curb, curb ramp, or sidewalk work inquiry is about:

Will there be permanent or temporary right-of-way acquisition as a result of the proposed work?

☐ Yes  ☐ No  ☐ Don’t know  ☐ If yes, how much? _____________

Please attach the following to this form:
1. General Location Map. This map should allow the CBO reviewer to quickly locate the curb ramp(s) in question.
2. Photographs of curb ramp(s) in question and adjacent structure(s)
3. Proposed Plan drawing(s)

Form to be found INDOT editable documents and submitted to either:

Anuradha V. Kumar
Manager, Cultural Resources Office
Environmental Services
Indiana Department of Transportation
100 N. Senate Ave., Rm. N642-ES
Indianapolis, IN 46204
Office: 317-234-5168
Cell: 317-703-9996
Email: akumar@indot.in.gov

Susan R. Branigin
History Team Lead, Cultural Resources Office
Environmental Services
Indiana Department of Transportation
100 N. Senate Ave., Rm. N642-ES
Indianapolis IN 46204
Office: (317) 232-2969
Email: sbranigin@indot.in.gov
Recommendations Cultural Resources on Design

- Invite CRO staff member Clint Kelly to the project Pre-Construction Meeting.
- Photograph existing conditions of buildings and adjacent structures and supply to Engineer.
- **Saw cut one (1) foot away from building.**
- No high impact or machinery with excessive vibration within one (1) foot of the buildings.
- During the breaking of concrete, regardless of distance” plywood should be held against breaker to shield building from debris.
- Remove broken pieces by hand near building.
- If any damage to the building is detected, work adjacent to the building should cease immediately and INDOT-CRO shall be notified. INDOT-CRO will coordinate as appropriate with SHPO and FHWA to determine an appropriate treatment plan. Notification must be sent to Anuradha Kumar, Manager INDOT-CRO, both via phone at 317-296-0799 and via email at akumar@indot.IN.gov.
- Ready for new concrete
Proposed New Design

If reconstruction of this ramp is desired, a Determination of Technical Infeasibility will be required for the 2.56% cross slope of the turning space and ramp.

Proposed ADA-compliant casting

Depressed corner curb ramp submitted with 1’ offset from building

Technical Inquiry submitted for cross slope TS

Push Button height to be adjusted to 42”-48”
The End

For questions contact
Herbert Davis
317-232-530
hdavis@indot.in.gov
Trails

... or, define “accessible”.
Standards apply to facilities “designed, built, altered or leased with Federal funds”

• “with Federal grants or loans” (ABA)
• covered by Title II or III of the ADA
ABA Chapter 2: Scoping Requirements

- F244 Camping Facilities
- F245 Picnic Facilities
- F246 Viewing Areas
- F247 Trails
- F248 Beach Access Routes
ABA Chapter 10: Recreation Facilities

- 1011 Outdoor Constructed Features
- 1012 Parking Spaces within Camping Units and Picnic Units and Pull-up Spaces at Dump Stations
- 1013 Tent Pads and Tent Platforms
- 1014 Camp Shelters
- 1015 Viewing Areas
- 1016 Outdoor Recreation Access Routes
- 1017 Trails
- 1018 Beach Access Routes
- 1019 Conditions for Exceptions
Outdoor Recreation Access Routes (1016)

- **Surface** – firm and stable
- **Clear width** – 36 inches minimum
- **Passing space** – required where width is less than 60 inches
- **Obstacles** – 1 inch maximum, except concrete, asphalt, or boards = ½ inch
- **Openings** – ½ inch maximum
### Outdoor Recreation Access Routes (1016)

<table>
<thead>
<tr>
<th>Running Slope of Outdoor Recreation Access Route Segment</th>
<th>Maximum Length of Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steeper than 1:20 (5%) But not Steeper than 1:12 (8.33%)</td>
<td>50 feet (15 m)</td>
</tr>
<tr>
<td>1:12 (8.33%) But not Steeper than 1:10 (10%)</td>
<td>30 feet (9 m)</td>
</tr>
</tbody>
</table>
Outdoor Recreation Access Routes (1016)

- **Cross slope** – 1:20 maximum, except concrete, asphalt, or boards = 1:48

- **Resting intervals** – 60 inches in length minimum, adjacent to ORAR - turning space

- **Protruding object** – constructed elements
Beach access routes (1018)

- **Surface** – firm and stable
- **Width** – 60 inches minimum (Exception 48 min)
- **Obstacles** – 1 inch maximum, (except concrete, asphalt, or boards - ½ inch)
- **Openings** – ½ inch maximum
Trails (1017)

- Pedestrian route developed primarily for outdoor recreational purposes
- (A pedestrian route developed primarily to connect elements, spaces, or facilities within a site is not a trail.)
- Newly constructed/alterd trail directly connected to a trailhead or another trail complying with guidelines
- Conditional exceptions permitted – new and altered
- Shared use paths addressed in separate rulemaking for public rights of way
Trails Surface (1017.2)

“firm and stable”
Research Projects

National Trails Surface Study

https://ncaonline.org
Trails

- **Width** - 36 inches minimum. Passing spaces – every 1,000 feet where less than 60 inches in width.

- **Tread obstacles** – 2 inches maximum, except concrete, asphalt, or board = ½ inch

- **Openings** – ½ inch maximum
### Table 1017.7.1

<table>
<thead>
<tr>
<th>Maximum Running Slope and Segment Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running Slope of Trail Segment</td>
</tr>
<tr>
<td>Steeper than 1:20 (5%)</td>
</tr>
<tr>
<td>1:12 (8.33%)</td>
</tr>
<tr>
<td>1:10 (10%)</td>
</tr>
</tbody>
</table>
Trails

- **Cross slope** – 1:20 (5%) max, except concrete, asphalt, or boards = 1:48 (2.1%)

- **Resting intervals** – 60 in. long, alongside trail - turning space, slope 1:20 max, except concrete, asphalt, or boards = 1:48

- **Gates and barriers** – clear width, gate hardware

- **Protruding objects** – “constructed features”
Protruding Objects

**Constructed** elements on trails, resting intervals, and passing spaces

Compliance with 307
Trailheads

• An access point to the trail.

• The junction of two or more trails or the undeveloped junction of a trail and a road is not a trailhead.

• 20% of each type of outdoor constructed feature provided within trailhead to be accessible.
Trail signs (1017.10)

- New signs provided at trailheads on newly constructed or altered trails

- Required information
  - Length of the trail or trail segment
  - Running slope (typical/maximum)
  - Cross slope (typical/maximum)
  - Tread width (typical/minimum)
  - Surface type
Conditional exceptions (1019)

- Compliance is not feasible due to terrain
- Compliance cannot be accomplished with the prevailing construction practices
• Apply on a provision-by-provision basis

• Where full compliance with a technical provision is not possible because of the limitations and constraints included in the conditional exceptions...

• “extent practicable”
• Compliance would fundamentally alter the function or purpose of the facility or the setting

• Compliance is precluded by the:
  • Endangered Species Act;
  • National Environmental Policy Act;
  • National Historic Preservation Act;
  • Wilderness Act; or
  • Other Federal, State or local laws.
When applying conditional exceptions to portions of the trail results in exempting the entire trail or beach access route from the technical provisions...

- Notify US Access Board where an entire trail or beach access route is exempted

- Technical assistance available
• Picnic tables
• Fire rings
• Grills
• Fireplaces and woodstoves
• Trash and recycling containers
• Water hydrants
• Utility and sewage hookups
• Outdoor rinsing showers
• Benches
• Telescopes
Outdoor constructed features (1011)

- **Scoping** - Camping facilities, Picnic facilities; Viewing areas, Trailheads, and Trails

- Outdoor constructed features are not scoped at beaches
Where to direct questions

U.S. Department of Justice
- Implementing regulation and additional requirements
- Requirements for existing facilities – title II & III
  (800) 514-0301 (voice)
  (800) 514-0383 (TTY)
www.ada.gov

U.S. Access Board
- 2010 Accessibility Standards for new construction and alterations
  (800) 872-2253 (voice)
  (800) 993-2822 (TTY)
  (202) 272-0081 (FAX)
ta@access-board.gov
www.access-board.gov
Resources

U.S. Access Board
(800) 872-2253
or (202) 272-0080
www.access-board.gov

Great Lakes ADA Center
(800) 949-4232
http://www.adagreatlakes.org/

Ric Edwards
Indiana Department of Natural Resources
(317) 232-4145
Cell - (317) 979-8893
http://www.in.gov/dnr/