MICHIGAN ADA TRAINING
CONSTRUCTION

ADA Ramps
DETAILED GRADES?

- ARE THIS MANY STAKES HELPFUL AND USEFUL...
NO CONSTRUCTION TOLERANCE ON MAX OR MIN.

Allow for finishing inconsistencies.
2’ vs. 4’ level – measurement error

2% in 5’ = 0.10’ or 1-1/4”
2% in 4’ = 0.08 or 1”
2% in 2’ = 0.04 or 1/2”
Sum of the Parts

Approach

Turning Space

Approach

Flare

Ramp

Flare

Gutter
Step by Step Considerations

1. Site Assessment
2. Ramp Alignment
3. Level Turning Spaces
4. Ramp Length & Grade Breaks
5. Ramp Type
6. Gutter Pan Slope & Existing Road Profile
7. Detectable Warning Surface (DWS)
8. Removal Limits
9. Setting Forms & Concrete Placement
10. Non-typical Intersections???
Use ramp orientation for way finding
Landings/Turning Spaces

(Can be reduced to 4ft. x 4ft. if 5ft. is not feasible.)
Maximum ramp slope is 8.3%. However, it shall not require the ramp length to exceed 15 feet.

You may exceed 8.3% if it would otherwise take more than 15 ft. to match existing sidewalk.
Landing/Turning Space not counted in the 15 ft.

START AT THE GRADE BREAK

A + B = 15’
CHASING GRADES
Consider reasonable increases in distance to achieve a compliant running slope.
Sidewalk Grade

- Can match but not exceed the adjacent road profile.
- If you exceed 5% and the road profile grade, ramp rules apply.
  - 8.3% maximum slope
  - 30” maximum rise
  - 5’ X 5’ Landing

Example using 8.3% slope
Cross Slope

X%  2%
Running Slope & Counter Slope

8.33% MAXIMUM RUNNING SLOPE

5.0 % MAX. COUNTER SLOPE
<table>
<thead>
<tr>
<th></th>
<th>Vertical Rise, inches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 ft. level</td>
</tr>
<tr>
<td><strong>Convert % slope to Inches for manual measurement</strong></td>
<td></td>
</tr>
<tr>
<td>Cross Slope</td>
<td>2%</td>
</tr>
<tr>
<td>Counter Slope</td>
<td>5%</td>
</tr>
<tr>
<td>Running Slope</td>
<td>8.33%</td>
</tr>
<tr>
<td>Flare</td>
<td>10%</td>
</tr>
</tbody>
</table>
Flares

Detectable Warning Surface
24" across full width (see notes)

Sidewalk Ramp Type F
(FLARED SIDES, TWO RAMPS SHOWN)

Full curb height may be reduced to accommodate maximum side flare slope
Mixed Ramp Types & Hybrids

Non-walking surface

Reduce curb height to meet max. slope.

Walking Surface

ROLLED

FLARED

FLARED

FLARED
Directional Ramps
Preferred for Optimal Way finding
Rolled Curb

Non-walking surface

Permanent object
MDOT Depressed Corner (Type D)

Use when directional ramps don’t fit

Continuous Detectable Warning Coverage Where Curb is Removed
The Curb Opening
(Counter Slope)

*** Transition adjacent gutter pan cross section to provide 5.0% maximum counter slope across the ramp opening.

RAMP SLOPE

*** 5.0% MAX.

SECTION THROUGH CURB CUT
(TYPICAL ALL RAMP TYPES)

PAVEMENT SHALL END FLUSH WITH THE GUTTER PAN

RAMP SHALL END FLUSH WITH BACK OF CURB
Transition Gutter Slope

Steep gutter cross slope resumes beyond ramp
DETECTABLE WARNING PLACEMENT

WHERE’S THE GRADE BREAK?
GRADE BREAK 90° to ramp path of travel.

24" DEEP DETECTABLE WARNING, EXTENDING THE WIDTH OF THE RAMP. (NEAREST EDGE AT THE GRADE BREAK AT THE BACK OF CURB.)
SKEWED GRADE BREAKS ARE A PROBLEM
ACHIEVING 90° on A Radius

Move The Ramp

Move the Grade Break
Correct Placement if $X \leq 5$ feet

Correct Placement if $X > 5$ feet

Note: Indicate grade break
Back of Curb Offset

2 INCHES AT THE ENDS OF RADIUS
Location, Location, Location
East Ramp

Notice Obstructions
West Ramp

Note Catch Basin
Copy Edge Lines Parallel (Width = Sidewalk; 5’ Min.)
Measure DWS Max Distance to B.O.C.
Rotate DWS Tangent to Curb
Draw Lower Grade Break Perpendicular at Furthest DWS Corner
Show Limits of Removals
Strive for Directional Alignment

Example Before

After
Consider removing one additional panel to account for no tolerance in slope.
STAKING
Look across the street
Ramp/Walk Excavation
Complex corner
Manholes, poles, driveway
Obstructions
Manholes, poles, tree
Did we remove enough?
Setting String
Placing Forms
Well braced forms in good condition?
Preparing base
A well prepared base?
Complex forming to address utilities, manholes, landing area
Detectable warning plate installation
Rechecking slope
In both directions
Key Points

- Think in terms of accessibility and mobility.
  - How would a person in a wheelchair navigate this corner?
  - Where can they find a safe spot to rest and plan their next move?
  - How would a blind person navigate?

- Attention to detail.
  - Check and re-check!!

- Communication between designer, construction staff, inspector and contractor is important.
Don't sacrifice overall accessibility just to copy a standard.
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DON’T MAKE THINGS WORSE!