PEORIA’S DUAL CURB RAMP DETAILS

A Case Study

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City of Peoria
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Motivation

View from MAG building: 1st Ave and Van Buren St
Curb ramp requirements in 2006

Directional ramps implied by multiple documents and sources

Examples of both radial and directional curb ramps

Source: 2011 PROWAG
Curb Ramps in 2006, cont.

MAG details - single diagonal ramps

Peoria - dual ramps at some intersections
Dual Ramp Example

83\textsuperscript{rd} Ave and Deer Valley Rd
Design Process

Goals

* Meet or exceed ADA requirements;
* Provide dual ramps at all intersections;
* Keep crossings close to intersection; and
* Align ramps on both sides of crossings.
Design Process

Early design concept from 2007
Design Process

Design trials and revisions: 2007 - 2011
Trial and Error

Good example of a bad example:

87th Ave and Mountain View Rd
Design Process, cont.

Challenges

* Partial elliptical area along radius;
* Large outer flares;
* Steep inner flares;
* Shared landing; and
* Aligning ramps
Partial Elliptical Area
Design Process, cont.

Large outer flares
Steep inner flares
Design Process, cont.

Ramp alignment
## Approved Detail

**CITY OF PEORIA**

**STANDARD DETAIL PE-241-3**

**STANDARD DUAL CURB RAMP (DIMENSIONS)**

FOR ARTERIAL AND COLLECTOR STREETS

### APPROVALS:

**CITY ENGINEER**

7/20/12

### DIMENSION TABLE

<table>
<thead>
<tr>
<th>Radius (ft)</th>
<th>A (ft)</th>
<th>B (ft)</th>
<th>C (ft)</th>
<th>D (ft)</th>
<th>E (ft) BC-BW (APPROX)</th>
<th>F (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>5' PREF MIN</td>
<td>6' MIN</td>
<td>5' MAX</td>
<td>6' PREF MIN</td>
<td>13.5' PREF 11.5' MIN</td>
<td>4' MIN</td>
</tr>
<tr>
<td>25</td>
<td>5' PREF MIN</td>
<td>6' MIN</td>
<td>5' MAX</td>
<td>6' PREF MIN</td>
<td>14' PREF 12' MIN</td>
<td>4' MIN</td>
</tr>
<tr>
<td>30</td>
<td>5' PREF MIN</td>
<td>6' MIN</td>
<td>5' MAX</td>
<td>8' PREF MIN</td>
<td>16' PREF 13' MIN</td>
<td>4' MIN</td>
</tr>
<tr>
<td>35</td>
<td>5' PREF MIN</td>
<td>6' MIN</td>
<td>5' MAX</td>
<td>8' PREF MIN</td>
<td>16' PREF 13' MIN</td>
<td>4' MIN</td>
</tr>
</tbody>
</table>

*POSITION OF EACH RAMP MAY SHIFT TO ALIGN WITH RAMP ON OPPOSITE SIDE

Revised PE-241 series curb ramps
Final Design Examples

83rd Ave and Olive Ave
Final Design Examples

Westward Skies Dr and Miner Trl
Final Design Examples

91st Ave and Peoria Ave
Ongoing challenges

More good examples of a bad example:

Grade break not perpendicular to ramp and poorly defined landing
More good examples of a bad examples:
City of Chicago ADA Standards: Introduced 02/07
Requirement for dual ramps in PROWAG
Section R207 Curb Ramps and Blended Transitions

R207.1 - Requirement for ramps for each pedestrian street crossing

R207.2 – Option to use single diagonal ramps for alterations “where existing physical constraints prevent compliance with R207.1…”

No requirement for directional (aligned) ramps / detectable warnings
Jurisdictions Requiring Directional Ramps

Chandler
Gilbert
Mesa
Peoria
others?
MAG Standard Specifications and Details Committee

Jurisdictions involved in working group:

- Buckeye
- Chandler
- Gilbert
- Maricopa County
- Mesa
- Peoria
- Tempe
DRAFT Ramp Detail Update

236 Series: Dual radial ramp details
  236-1: Attached sidewalk
  236-2: Detached sidewalk
  236-3: Small radius

237 Series: Dual directional ramp details
  237-1: Attached sidewalk
  237-2: Detached sidewalk
  237-3: Small radius
NOTES:
1. CLASS 'A' CONCRETE PER SECTION 725, PC TO PT.
2. CONSTRUCTION INCLUDING EXPANSION JOINTS AND MAXIMUM SLOPES SHALL CONFORM TO SECTION 340.
3. WALKWAY SURFACE TO MATCH 1.5% SLOPE FROM TOP OF CURB.
4. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENTS.
5. DISTANCE BETWEEN RAMPS MAY BE ADJUSTED TO IMPROVE ALIGNMENT WITH RECEIVING RAMPS ALLOWED BY THE JURISDICTIONAL AGENCY.
6. SPECIAL DESIGN IS REQUIRED FOR GUTTER GRADES GREATER THAN 2%.
NOTES:
1. CLASS "A" CONCRETE PER SECTION 725, PC TO PT.
2. CONSTRUCTION INCLUDING EXPANSION JOINTS AND MAXIMUM SLOPES SHALL CONFORM TO SECTION 340.
3. WALKWAY SURFACE TO MATCH 1.5% SLOPE FROM TOP OF CURB.
4. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY’S REQUIREMENTS.
5. DISTANCE BETWEEN RAMPS MAY BE ADJUSTED TO IMPROVE ALIGNMENT WITH READING RAMP WHEN ALLOWED BY THE JURISDICTIONAL AGENCY.
6. SPECIAL DESIGN IS REQUIRED FOR GUTTER GRADES GREATER THAN 2%. 

SECTION A-A
DRAFT Ramp Detail Update

MAG 236-3

Case 16-05 DRAFT 8-15-16

NOTES:
1. CLASS "A" CONCRETE PER SECTION 725, PC TO PT.
2. CONSTRUCTION INCLUDING EXPANSION JOINTS AND MAXIMUM SLOPES SHALL CONFORM TO SECTION 340.
3. WALKWAY SURFACE TO MATCH 1.5% SLOPE FROM TOP OF CURB.
4. DETECTABLE WARNING IS TO COMPLY WITH "THE JURISDICTIONAL AGENCY'S REQUIREMENTS.
5. SPECIAL DESIGN IS REQUIRED FOR GUTTER GRADES GREATER THAN 2%.
NOTES:
1. CLASS 'A' CONCRETE PER SECTION 725, PC TO PT.
2. CONSTRUCTION INCLUDING EXPANSION JOINTS AND MAXIMUM SLOPES SHALL CONFORM TO SECTION 342.
3. WALKWAY SURFACE TO MATCH 1.5% SLOPE FROM TOP OF CURB.
4. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENTS.
5. DISTANCE BETWEEN RAMPS MAY BE ADJUSTED TO IMPROVE ALIGNMENT WITH RECEIVING RAMP WHEN ALLOWED BY THE JURISDICTIONAL AGENCY.
6. SPECIAL DESIGN IS REQUIRED FOR GUTTER GRADES GREATER THAN 2%.
7. WING SLOPE SHALL NOT EXCEED 10% MEASURED PERPENDICULAR TO RAMP.
8. RAMP ALIGNMENT SHOULD CONNECT CONTROL POINT TO CONTROL POINT OF RECEIVING RAMP WITHIN 5 FEET.
DRAFT MAG 237-3

Legend:
- Ramp Control Point
- Design Elevation See Plans
  - FL = Flow Line
- FG = Finished Grade

Notes:
1. Class ‘A’ Concrete per Section 725, PC to PT.
2. Construction including expansion joints and maximum slopes shall conform to Section 346.
3. Walkway surface to match 1.5% slope from top of curb.
4. Detectable warning is to comply with the jurisdictional agency’s requirements.
5. Special design is required for gutter grades greater than 2%.
6. Wing slope shall not exceed 10% measured perpendicular to ramp.
7. Ramp alignment should connect control point to control point of receiving ramp within 5 feet.

Detail No. 237-3

English

Dual Curb Ramp (Directional, 20' R) Attached Sidewalk

Proposed: 01-01-2017

Detail No. 237-3
MAG Committee Resolution

September 8, 2016

New details presented to the MAG Standard Specifications and Details Committee.

INSERT UPDATE HERE!
Questions?