





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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SLOPE RUN	ELEVATION DIFFERENCE			
	PERCENT SLOPE			
2'	0.03	0.10	0.15	0.18
4'	0.06	0.20	0.30	0.36
6'	0.09	0.30	0.45	0.54
8'	0.12	0.40	0.60	0.72
10'	0.15	0.50	0.75	0.90
12'	0.18	0.60	0.90	1.08
15'	0.22	0.75	1.12	1.35

If a curb ramp length is less than or equal to 15', the controlling factor is the 8.3% Max slope. But when a ramp length is greater than 15', the controlling factor is the length and the running slope may exceed 8.3%. This situation occurs when the existing grades are steep and the ramp run will not intercept the sidewalk surface, or will be excessively long before obtaining a slope less than or equal to 8.3%.

If there are questions about what "Best Practice" to apply when the ramp length reaches 15', contact the Project Delivery Coordinator, or ADA coordinator in HQ Division of Design.

In this example, the design running slope on one side is 8.1%. This example strove to meet the 8.3% constructed slope by not having the design slope exceed 8.1%. To achieve the 8.1% design slope in this example, the length of the parallel curb ramp was lengthened to 16 feet. However, per DIB 82 Section 4.3.8 (1), the ramp length shall not be required to exceed 15 feet. But lengthening the ramp a few feet (to 16' or 18') is okay if it allows the constructed slope to be less than or equal to the Max 8.3%.

- MANDATORY FOR CONSTRUCTION OF CURB RAMPS**
- Station, offset and elevation of the BCR and ECR at the gutter flowline.
  - Show centerline of curb ramp with station, offset and elevation at the gutter flowline. A section view along the curb ramp centerline is included to show slopes and additional elevations. Additional elevations should include the curb lip (at roadway surface), the back of landing and the top of curb.
  - Showing a section view(s) will enable the contractor to better understand the design slopes for ADA compliance.
  - Elevation where the top of the ramp and back of sidewalk meet (or begin and end of retaining curb).
  - Length of curb ramp Running Slope(s).
  - Length from sawcut (conform) to a known point (e.g., BCR/ECR or begin of curb ramp).
  - Curb ramps shall have a running slope not steeper than 8.3% Max, but shall not require the ramp length to exceed 15 feet (see DIB 82 Section 4.3.8 (1)).
  - Running Slope and Cross Slope of curb ramp. Slope and Cross Slope of bottom landing. Cross Slope of sidewalk. Gutter Pan Slope (counter slope) within width of landing.
  - Width of curb ramp, landing (turning space) and adjacent sidewalk.
  - Slope and width of existing sidewalk at the sawcut (conform point).
  - Alignment line for state highway or ramps, with stationing labeled every full station.
- Alignment line for local street when used for station and offsets.

- RECOMMENDED FOR CONSTRUCTION OF CURB RAMPS**
- If the gutter flowline is not a constant grade, then additional elevations may need to be shown beyond just the BCR and ECR, such as grade breaks or both sides of the bottom landing. Elevation at top of curb (TOC) at both ends of the curb and gutter.
  - Showing additional distances to key points will better enable the contractor to achieve the design values for ADA compliance. Show the length from the BCR and ECR to the begin of the curb ramp or centerline of the curb ramp.
  - Existing drainage inlets within the limits of the curb ramp should be relocated outside the curb ramp accessible pathway.
  - At each curb ramp, check if there is any existing survey monumentation that may be obliterated by the construction of the curb ramp. If found, contact Right of Way Engineering.
  - Provide only those pavement elevations that are directly related to the slopes affecting the construction of the curb ramps and crosswalks
  - Label the slopes, lengths and dimensions of the curb ramp, even if they meet the design standards shown in the Revised Standard Plans. Place a note referring to the Revised Standard Plans for details not shown.
  - Label the type of curb and the retaining curb.
  - Show a sidewalk conform slab if necessary, with elevations and slopes at the sawcut line.
  - Show symbol for pedestrian push button locations, and with a reference to see the Electrical Systems plan sheets for further details.
  - Utility features (poles and covers) should not be located within the limits of the curb ramp, and should not restrict the pedestrian route.

**NEW CURB RAMP WITHIN EXISTING CURB, GUTTER AND SIDEWALK**

**NOTE:**  
FOR DETAILS NOT SHOWN, SEE REVISED STANDARD PLAN A88A.

The curb ramps drawn on Construction Detail sheets are to show all the information needed to construct the curb ramp. The Layout sheets should only show the location of the curb ramp with its identifying number.

Elevation difference (in feet) between two points for a given distance at percent slopes used when designing to design standards.

In this example the cross slope of the bottom landing is 3%, which exceeds the design standard shown on RSP A88A. However, DIB 82 Section 4.3.8 (8) allows the cross slope of the curb ramp to match roadway grade in certain situations. The application of DIB 82 Section 4.1.2 will determine the necessary slope and design standards that are involved.

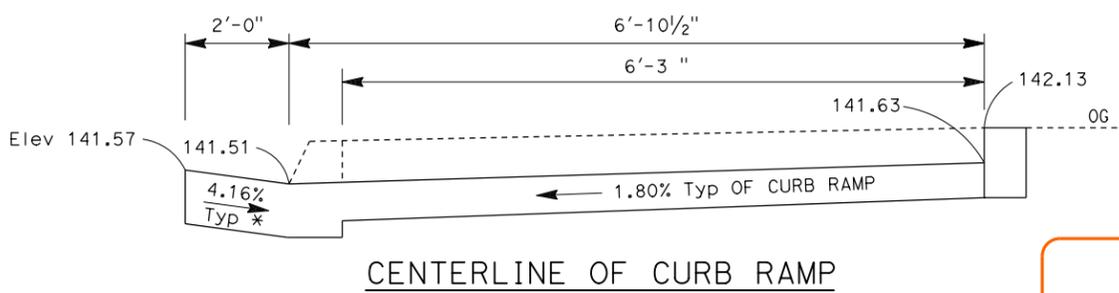
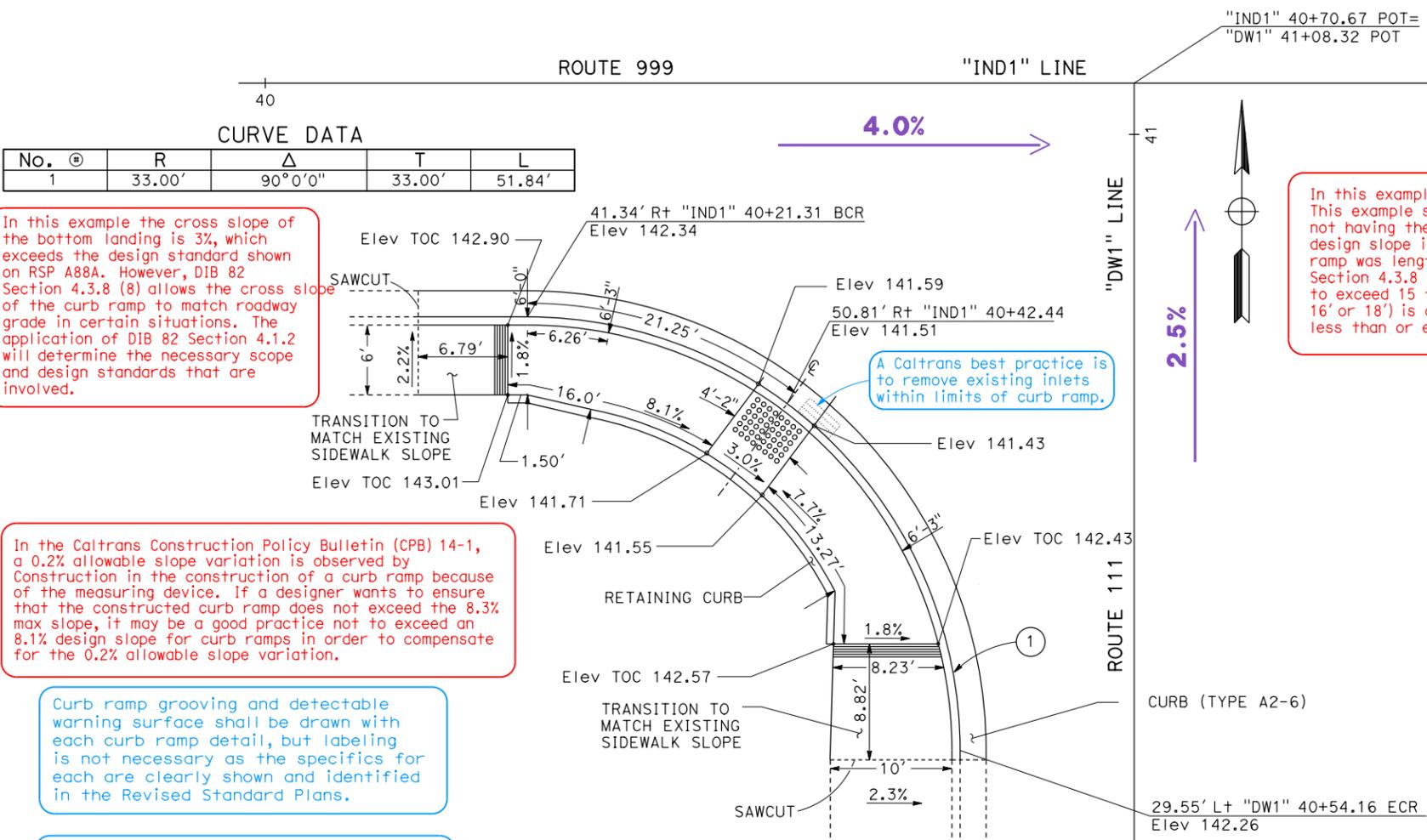
In the Caltrans Construction Policy Bulletin (CPB) 14-1, a 0.2% allowable slope variation is observed by Construction in the construction of a curb ramp because of the measuring device. If a designer wants to ensure that the constructed curb ramp does not exceed the 8.3% max slope, it may be a good practice not to exceed an 8.1% design slope for curb ramps in order to compensate for the 0.2% allowable slope variation.

Curb ramp grooving and detectable warning surface shall be drawn with each curb ramp detail, but labeling is not necessary as the specifics for each are clearly shown and identified in the Revised Standard Plans.

This example is considered "modified" because the "conservative design standards" shown in the Revised Standard Plans were not met (even if it is just one slope or width). In this example, the minimum dimensions shown in the Revised Standard Plans were met, but the slopes were not, thus this curb ramp must be included in the PRE/POST CONSTRUCTION SURVEYS bid item.

A Caltrans best practice is to remove existing inlets within limits of curb ramp.

The profile of the flowline controls most of the elevations associated with the curb ramp. The length and running slope on each side of the ramp runs will most likely be different slopes and lengths. This grade for this example is moderately steep, approximately a 4.0% downward slope from BCR to the centerline and a 2.5% downward slope from ECR to the centerline. This creates a low point at the centerline. Consideration where best to place inlets must occur during design.



\* Typical for the width of the bottom landing (accessible pathway). For additional information on Counter Slopes, see Revised Standard Plan A88A (Note 9), or DIB 82 Section 4.3.8 - (4) and (8).

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



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