

ACEC Meeting ADA Updates

Presented by

Anthony Ng

ADA Project Delivery Office



CLASS ACTION LAWSUITS

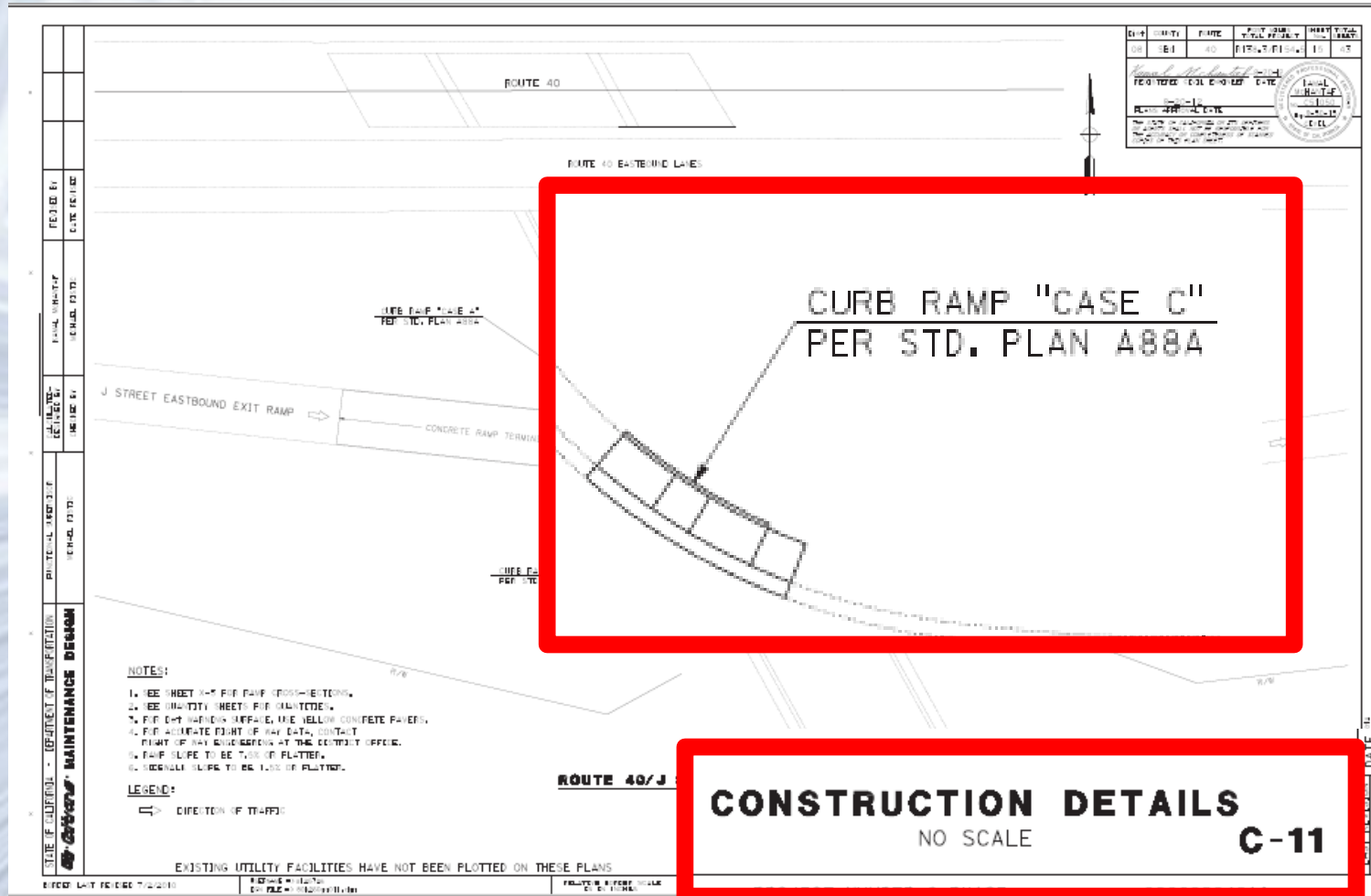
Settlement Cases

Caltrans – \$1.1 Billion

City of LA – \$1.4 Billion

New York City - \$1.55 Billion

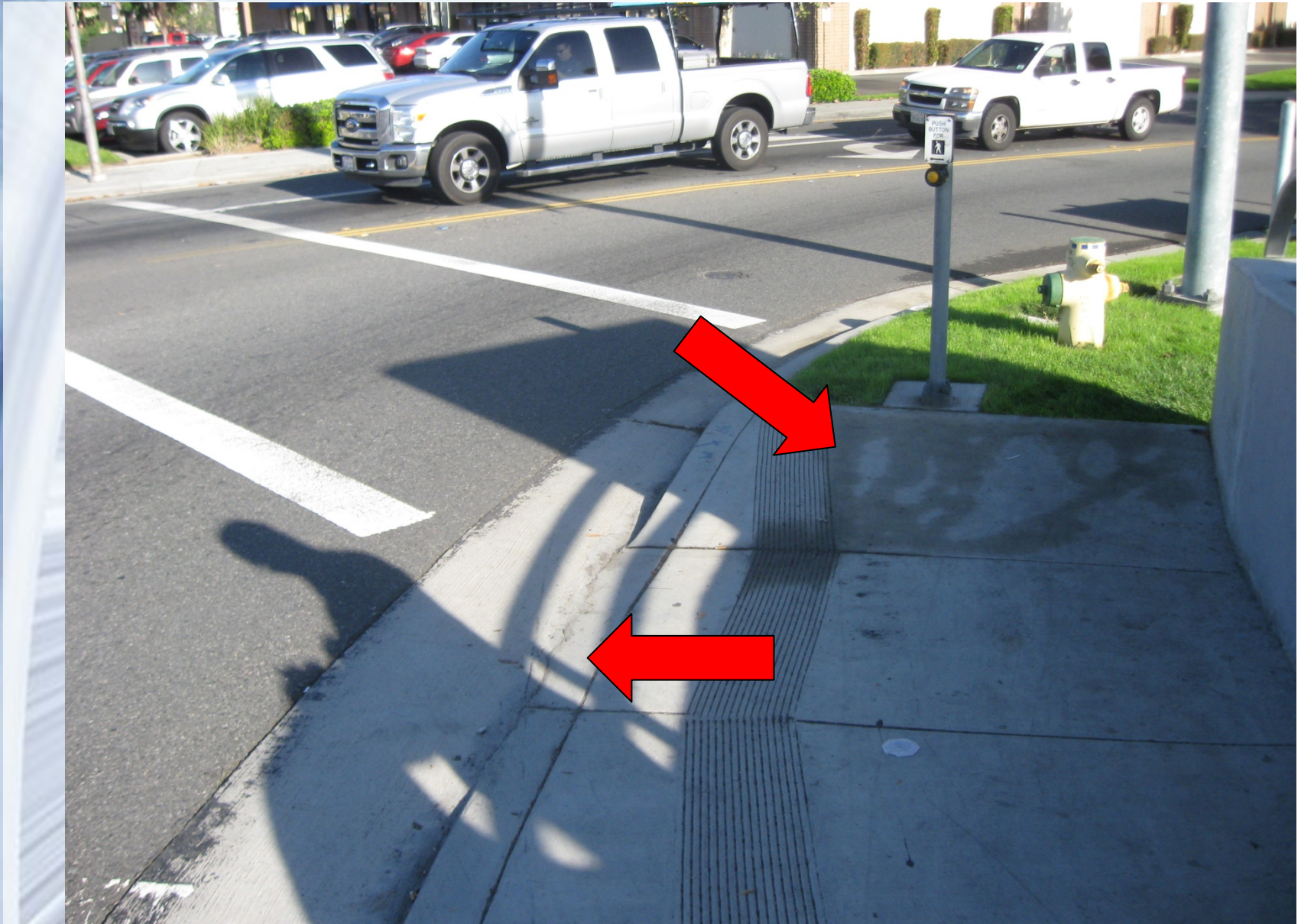
Old Curb Ramp Design



Sample Pictures



Sample Pictures



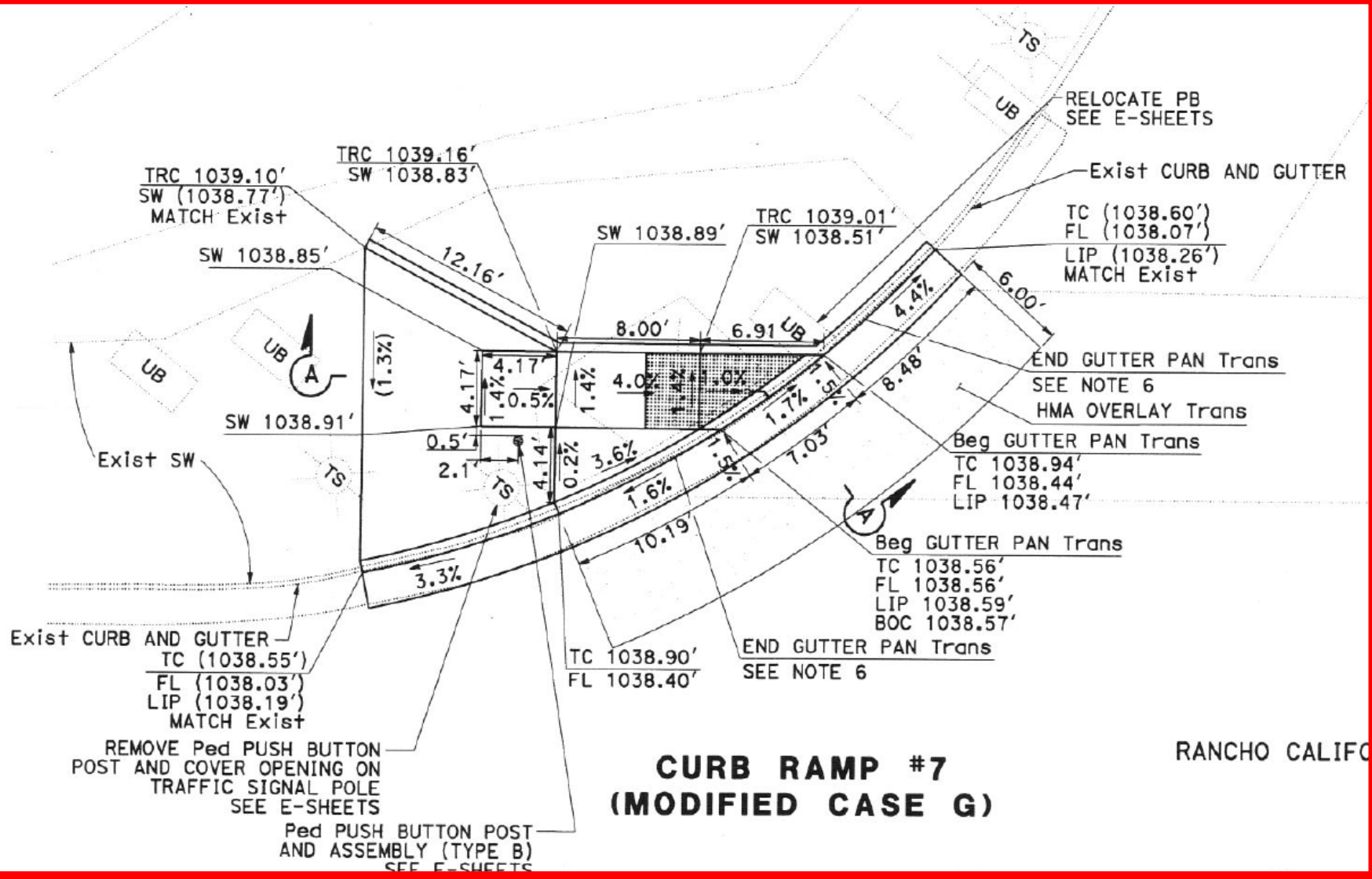
Sample Pictures



Sample Pictures



Plan Example - Good



BORDER LAST REVISED 7/27/2010

DDN FILE # 10110.g0014.dgn

RELATIVE BORDER SCALE
15 IN INCHES



UNIT 0000

PROJECT NUMBER & PHASE

0800020XXXX

NOTE:
FOR DETAILS NOT SHOWN, SEE REVISED STANDARD
PLAN A98A.

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 the identifying number.

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

SLOPE RUN

| SLOPE RUN | ELEVATION DIFFERENCE | | | |
|-----------|----------------------|------|------|------|
| | 1.5% | 5.0% | 7.5% | 9.0% |
| 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 |

REBERTED CIVIL ENGINEER DATE _____

PLANS APPROVAL DATE _____

THE STATE OF CALIFORNIA ON ITS BEHALF OF THE BOARD OF REGISTERED PROFESSIONAL ENGINEERS

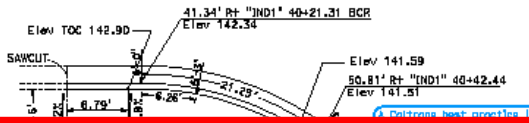
If a curb ramp length is less than or equal to 15', the controlling factor is the 8.3% Max slope. But when a ramp length is greater than 15', the controlling factor is the length and the running slope may exceed 8.3%. This situation occurs when the existing grades are steep and the ramp run will not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

CURVE DATA

| NO. | R | A | L |
|-----|--------|---------|---------------|
| 1 | 33.00' | 90°0'0" | 33.00' 51.84' |

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 need for the...



In this example, the design running slope on one side is 8.1%. This example strives 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 partial curb ramp was lengthened to 18 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') to allow for the constructed slope to be less than or equal to the Max 8.3%.

BLUE = MANDATORY

RED = RECOMMENDED (OPTIONAL)

GREEN = MANDATORY (EXISTING CURB RAMP)

BROWN = MANDATORY (SHOWN ON SECTION VIEW)

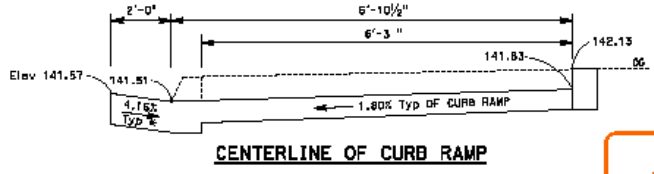
ACTION

- constant grade, ed to be shown at all grade on landing, both ends of
- ry points to achieve
- 1 ECR to the line of the
- is limits of a curbed
- is any of may be if the curb

In this example the design standard shown in the Revised Standard Plans were not met (even if it is just one slope or width).

In this example, the minimum elevations 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.

(MODIFIED CASE C)



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 4.8% downward slope from 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.

NEW CURB RAMP WITHIN EXISTING CURB, GUTTER AND SIDEWALK

- Known points (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 ramps. Slope and Cross Slope of bottom landing. Cross Slope of sidewalk. Curb Ramp Slope (counter slope) within width of landing.
- Width of curb ramp, landing (turning slope) and adjacent sidewalk.
- Slope and width of existing sidewalk at the start/turn (corner) points.
- Alignment line for state highway or ramps, with start/finish labeled every full station.
- Alignment line for local street when used for station and offsets.

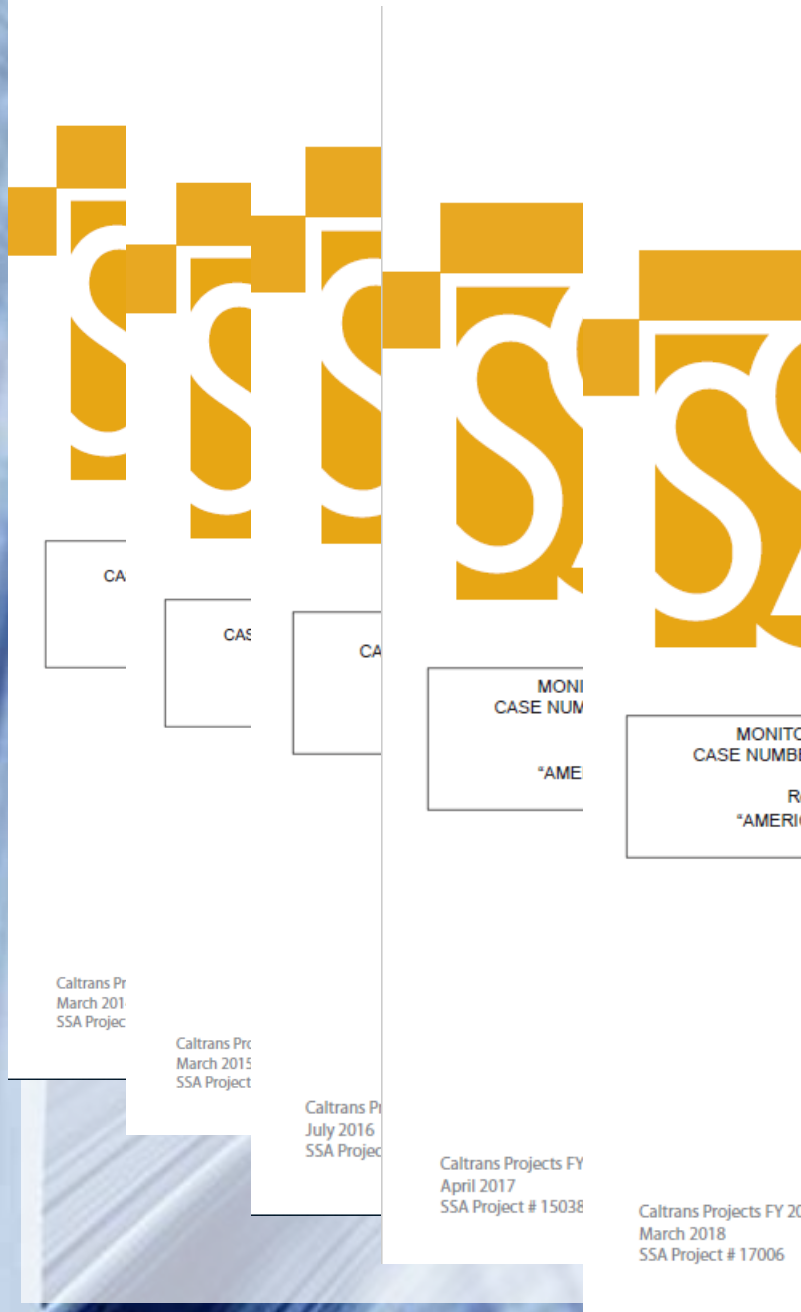
- Provide only those pavement elevations that are directly related to the slopes affecting the construction of the curb ramps and crosswalks.
- Label the slopes, lengths and dimensions of the curb ramp, even if they meet the design standards shown in the Revised Standard Plans. Place a note referring 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 of the adjacent 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.

CONSTRUCTION DETAILS NO SCALE C-1

* 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).



Audit Assessment



PARSONS

Accessibility Audits for Construction Contract Accepted Projects FY 2017-2018

Monitoring Report for Compliance with the Settlement Agreement
Case Number C-06-5125 in the United States District Court for the Northern District of California

Date Submitted
May 2019

Submitted To
Disability Rights Advocates,
California Council of the Blind,
Caltrans

Submitted By
Parsons Corporation

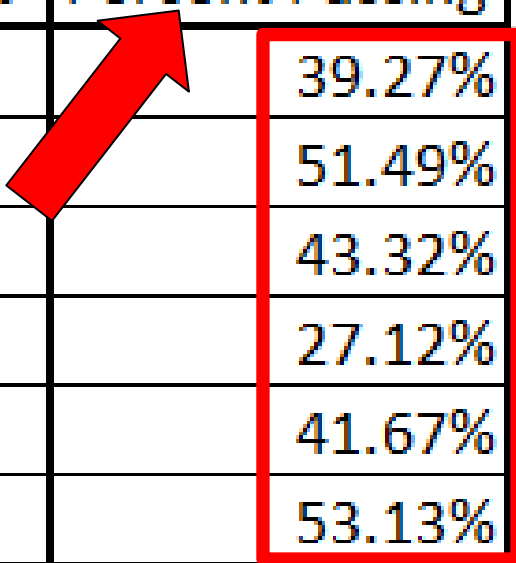
2495 Natomas Park Dr., Suite 510,
Sacramento, CA, 95833

P: (916) 576-2770
W: www.parsons.com



Audit Reports

| Reporting Year | Total Curb Ramps | Compliant | Percent Passing |
|----------------|------------------|-----------|-----------------|
| 2012-2013 | 275 | 108 | 39.27% |
| 2013-2014 | 235 | 121 | 51.49% |
| 2014-2015 | 307 | 133 | 43.32% |
| 2015-2016 | 483 | 131 | 27.12% |
| 2016-2017 | 372 | 155 | 41.67% |
| 2017-2018 | 256 | 136 | 53.13% |



Average = 42.67%

| Occurrences | Percentage |
|--------------------------------|-------------------|
| 1 Noncompliant Feature | 45.06% |
| 2 Noncompliant Feature | 27.02% |
| 3 Noncompliant Feature | 13.81% |
| 4 Noncompliant Feature | 7.25% |
| 5 or More Noncompliant Feature | 6.49% |

Top 5 Noncompliant Features

- Gutter Slope

- Detectable Warning – Full Width

- Detectable Warning – Setback

- Gutter Cross Slope

- Bottom Landing Length

Top 5 Noncompliant Features

- Gutter Slope
- Detectable Warning – Full Width
- Detectable Warning – Setback
- Gutter Cross Slope
- Bottom Landing Length

Top 5 Noncompliant Features

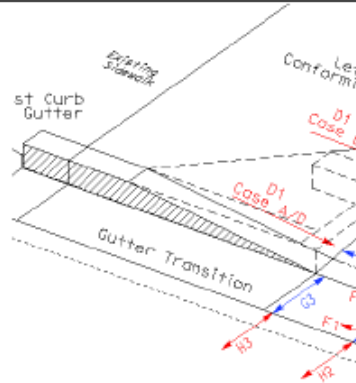
- Gutter Slope

- Detectable Warning – Full Width**
- Detectable Warning – Setback**
- Gutter Cross Slope**
- Bottom Landing Length**

CONTRACTOR NAME AND ADDRESS

| | |
|-----------------|--------------|
| Location Number | Route Name |
| | Cross Street |

ADA CURB RAMP



F1

F2

1.7% or less?

Yes No

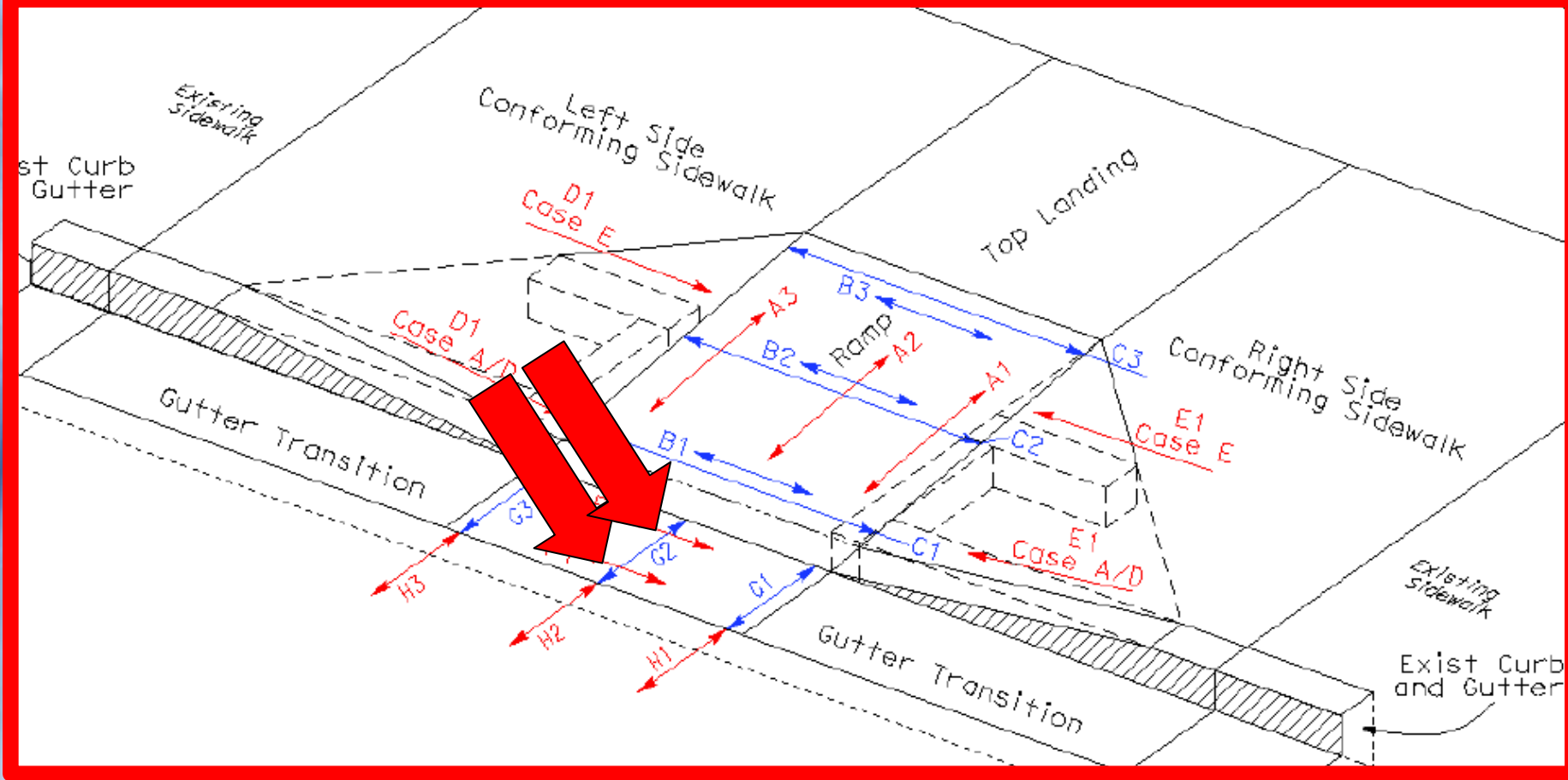
| Measure | | | |
|--|--|--|--------------------------|
| Ramp Slope (x.x%) | Ramp Cross Slope (x.x%) | Ramp Width (inches) | |
| A1 | B1 | C1 | D |
| A2 | B2 | C2 | |
| A3 | B3 | C3 | |
| 7.7% or less? | 1.7% or less? | 49.75" or greater? | 9.2 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> |

Remarks

Inspection by (print name) _____ Signature _____

CONTRACTOR NAME AND ADDRESS

CONTRACT NUMBER/CO/RTE/PM



| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|
| <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| | | | | | | | | | | greater? | |
| | | | | | | | | | | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| | | | | | | | | | | Gutter is 24" or more wide. | |

Remarks

| | | |
|----------------------------|-----------|------|
| Inspection by (print name) | Signature | Date |
|----------------------------|-----------|------|


DESIGN INFORMATION BULLETIN NUMBER 82-06

Department of Transportation
Division of Design
Office of Standards and Procedures

PEDESTRIAN ACCESSIBILITY GUIDELINES
FOR
HIGHWAY PROJECTS

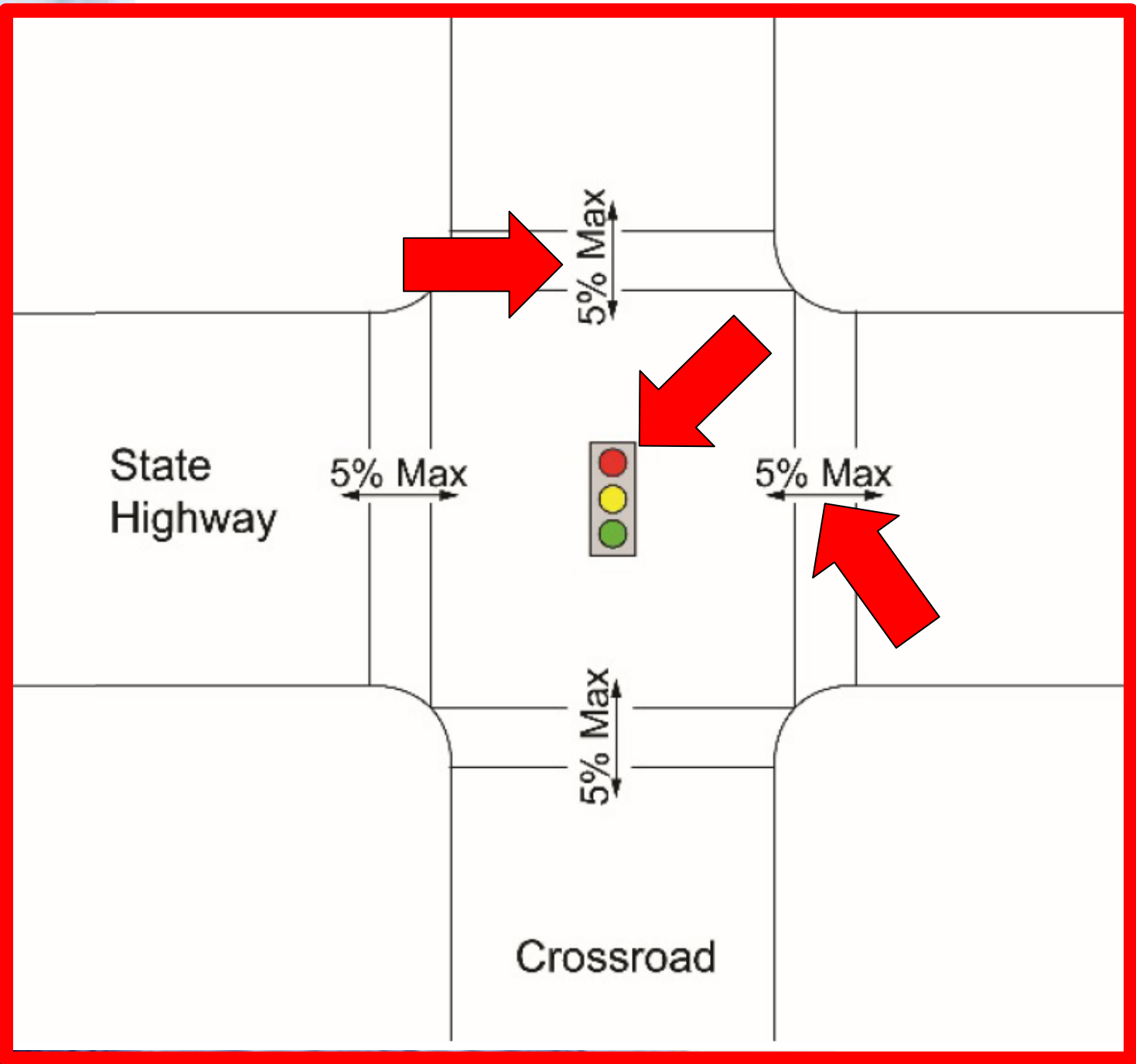
(2) When pedestrian access routes are contained within a roadway with yield or stop control, the maximum cross-slopes for pedestrian routes shall be 5.0% maximum.

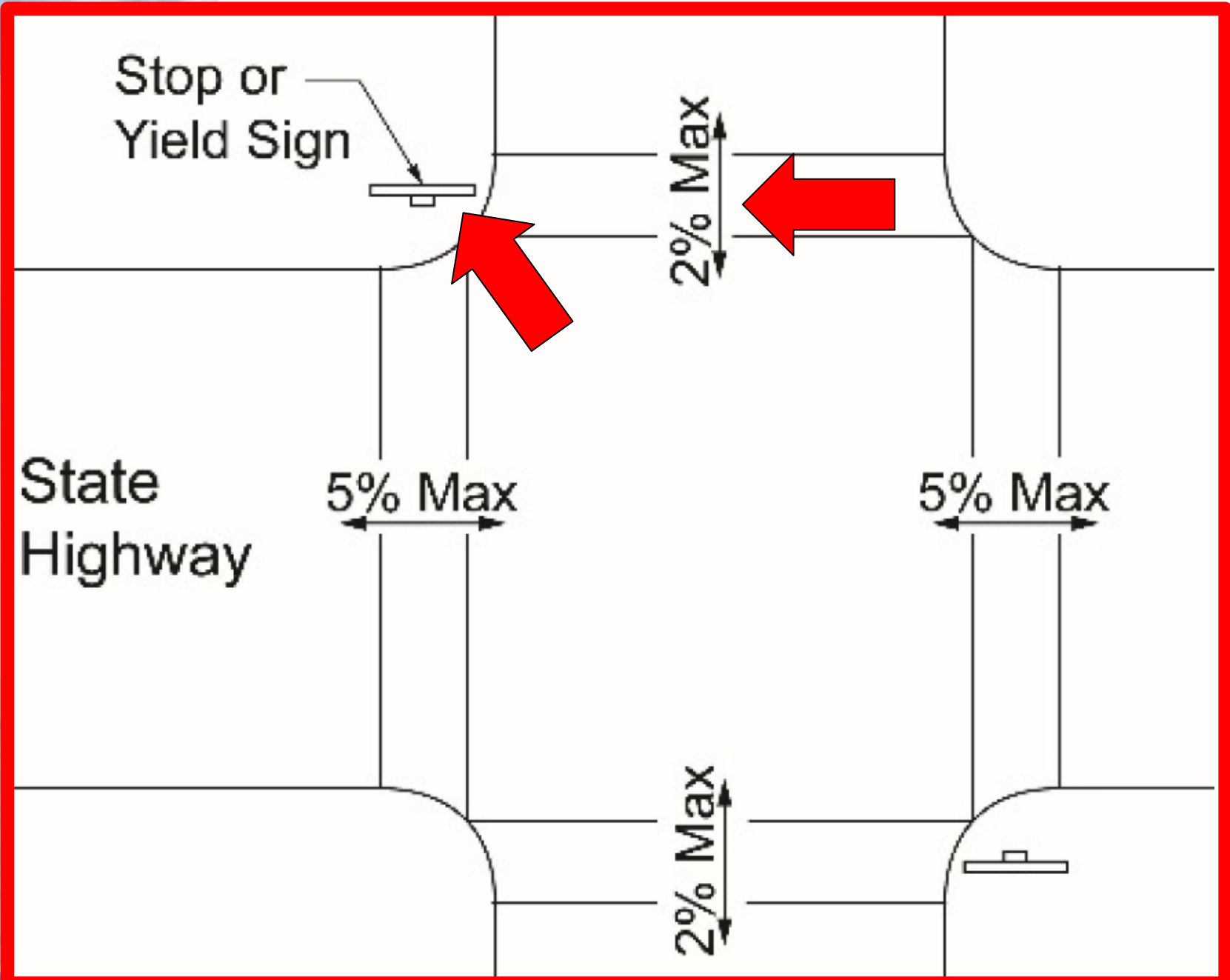
APPROVED BY:

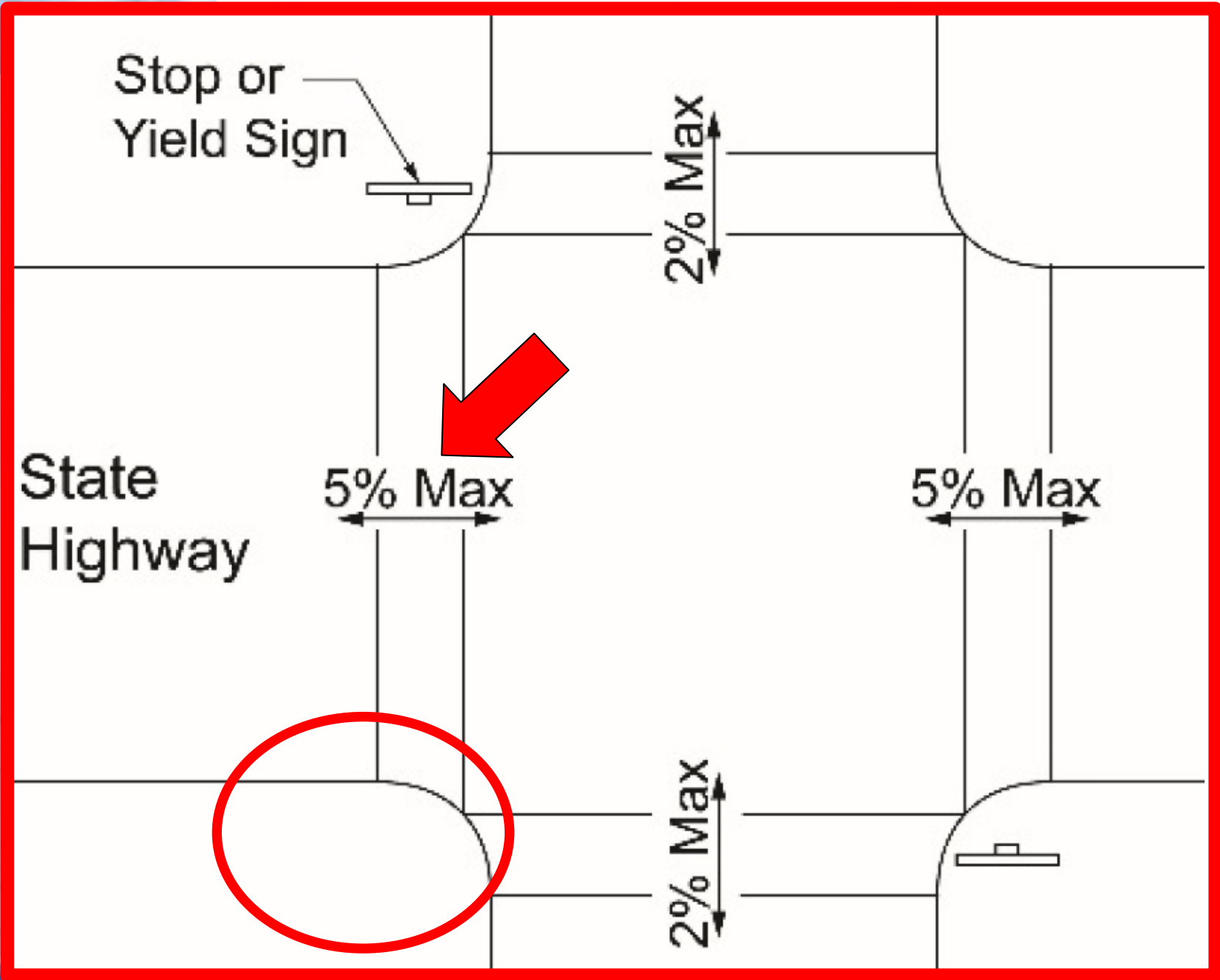


THOMAS S. BOUQUIN
ACTING DIVISION CHIEF
DIVISION OF DESIGN

November 16, 2017








DESIGN INFORMATION BULLETIN NUMBER 82-06

Department of Transportation
Division of Design
Office of Standards and Procedures

PEDESTRIAN ACCESSIBILITY GUIDELINES
FOR

(8) The cross slope of curb ramps, blended transitions, and turning spaces (landings) shall be 2.0% maximum. At pedestrian street crossings without yield or stop control and at midblock pedestrian street crossings, the cross slope shall be permitted to equal the street or highway grade.

APPROVED BY:



THOMAS S. BOUQUIN
ACTING DIVISION CHIEF
DIVISION OF DESIGN

November 16, 2017


DESIGN INFORMATION BULLETIN NUMBER 82-06

**Department of Transportation
Division of Design
Office of Standards and Procedures**

**PEDESTRIAN ACCESSIBILITY GUIDELINES
FOR**

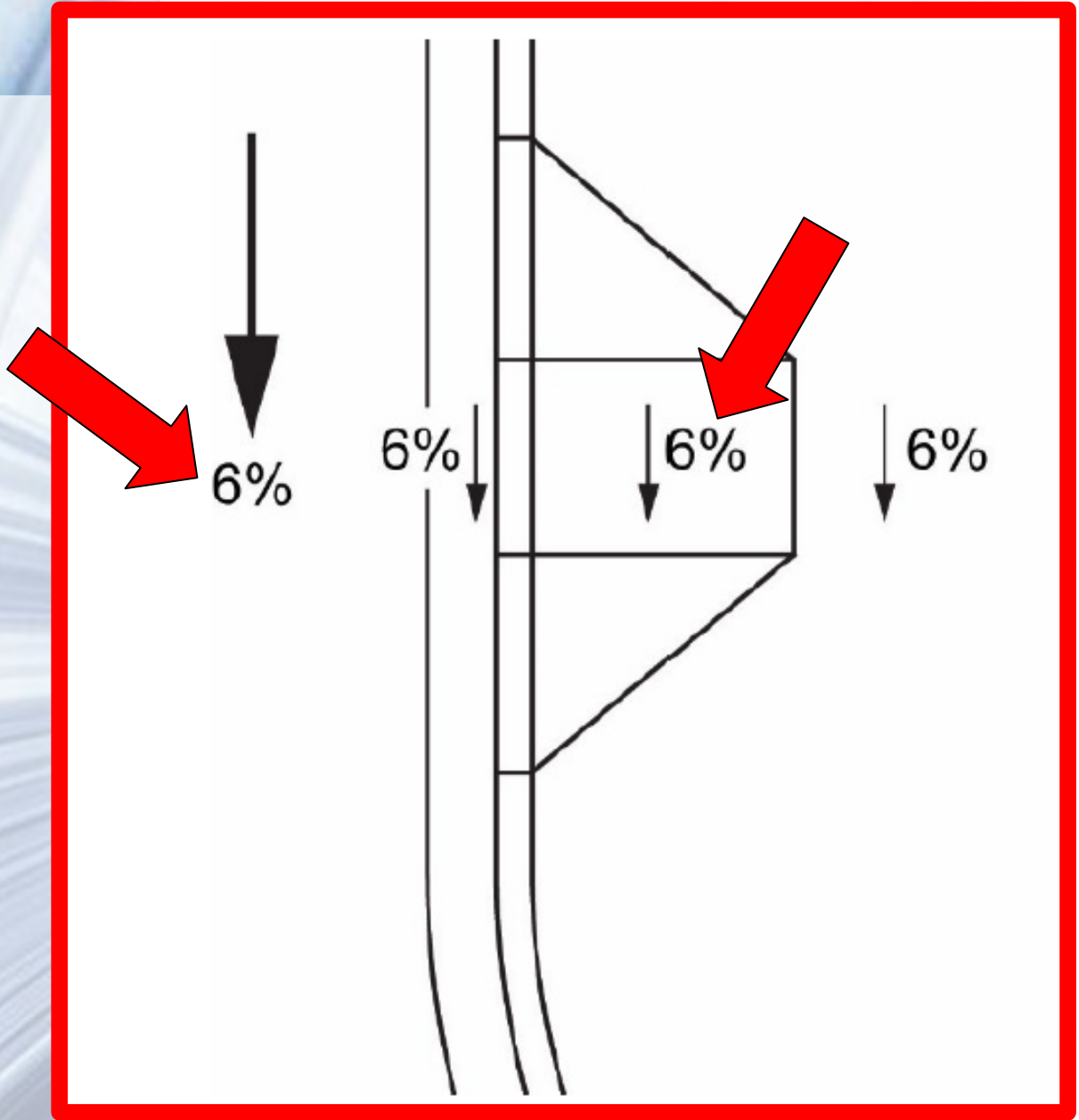
(8) The cross slope of curb ramps, blended transitions, and turning spaces (landings) shall be 2.0% maximum. At pedestrian street crossings without yield or stop control and at midblock pedestrian street crossings, the cross slope shall be permitted to equal the street or highway grade.

APPROVED BY:



**THOMAS S. BOUQUIN
ACTING DIVISION CHIEF
DIVISION OF DESIGN**

November 16, 2017



Top 5 Noncompliant Features

- Gutter Slope
- Detectable Warning – Full Width
- Detectable Warning – Setback
- Gutter Cross Slope
- Bottom Landing Length

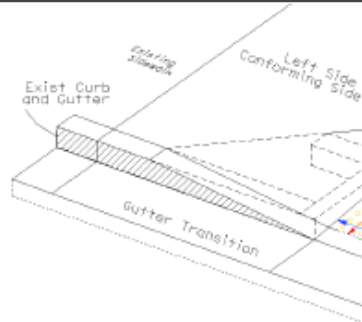
CONTRACTOR NAME AND ADDRESS

Location Number

Route Name

Cross Street

ADA CURB RAMP (CA



Measure and v

| Top Landing Cross Slope (x.x%) | Top Landing Slope (x.x%) | Top Landing Width (inches) | Top La Dep (inch |
|---|---|--|--|
| I1 | J1 | K1 | L1 |
| I2 | J2 | K2 | L2 |
| I3 | J3 | K3 | L3 |
| 1.7% or less? <input type="checkbox"/> Yes <input type="checkbox"/> No | 1.7% or less? <input type="checkbox"/> Yes <input type="checkbox"/> No | 49.75" or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No | 49.75" or greater? <input type="checkbox"/> Yes |

Remarks

Inspection by (print name)

Signature

**Detectable
Warning
Surface Width
(inches)**

M1

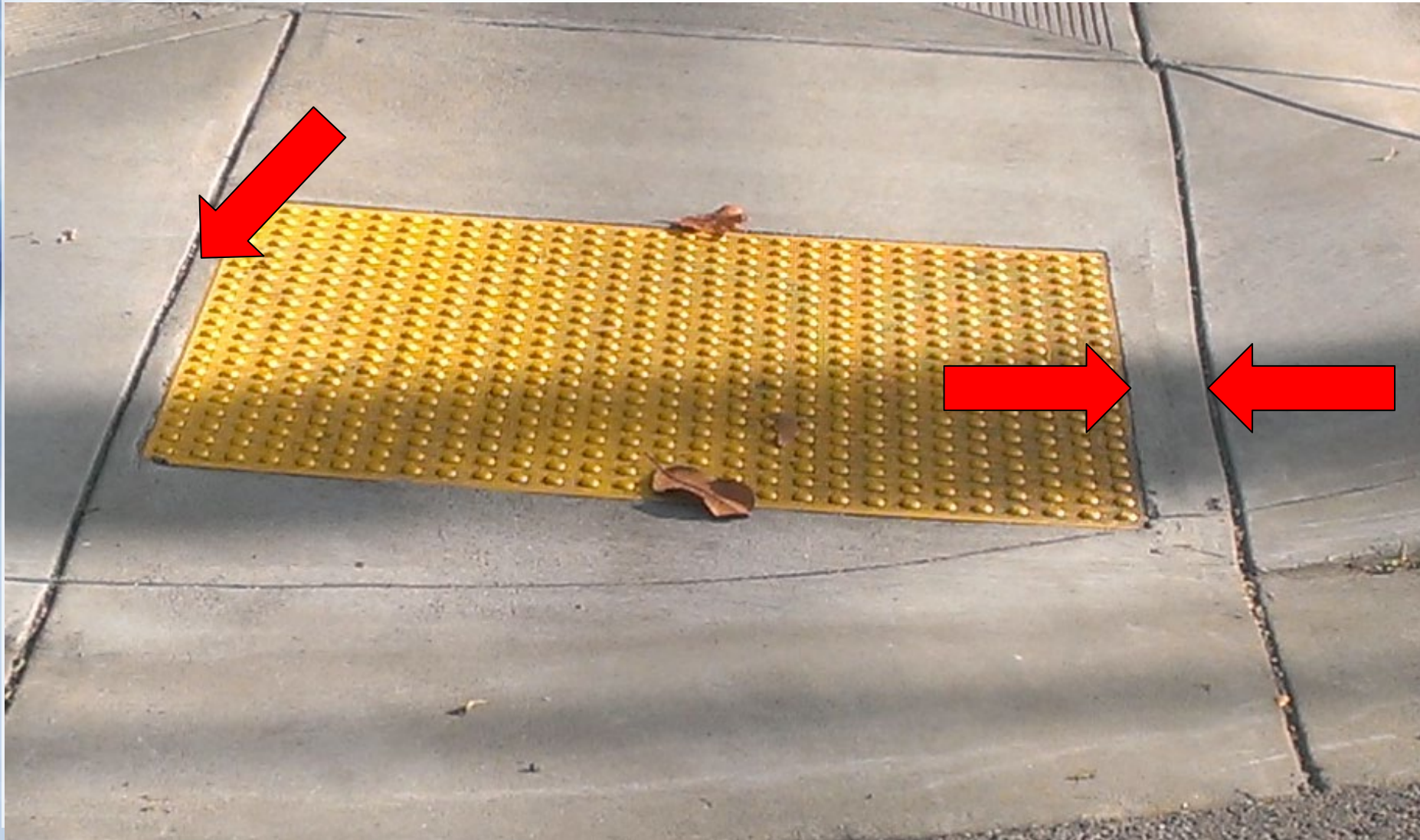
M2

**Extends full width
and less than 1"
gap on either
side?**

Yes

No

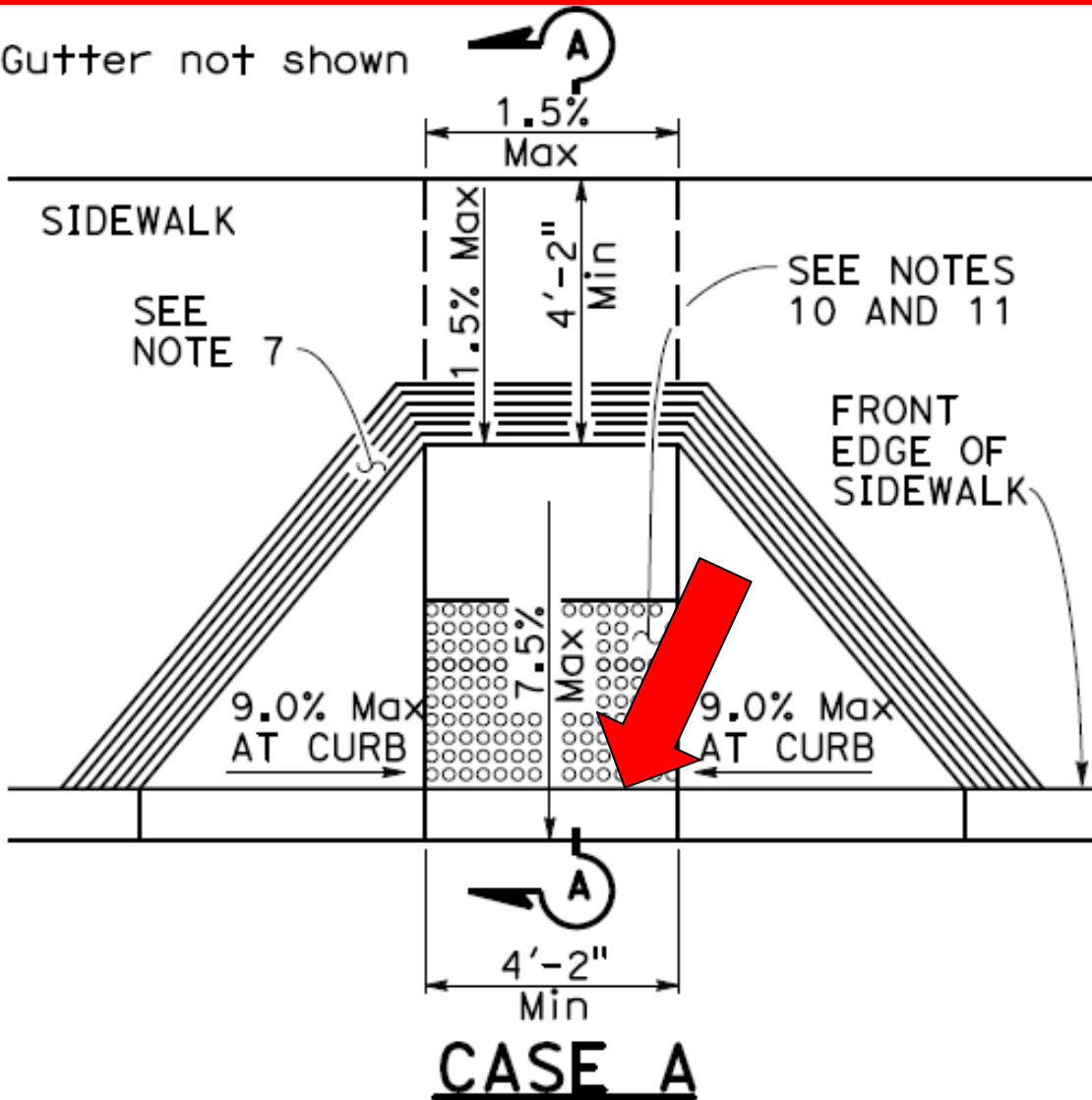
CEM Forms



Top 5 Noncompliant Features

- **Gutter Slope**
- **Detectable Warning – Full Width**
- **Detectable Warning – Setback**
- **Gutter Cross Slope**
- **Bottom Landing Length**

Gutter not shown



SEE NOTE 7

SEE NOTES 10 AND 11

FRONT EDGE OF SIDEWALK

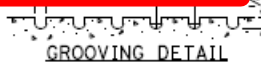
9.0% Max AT CURB

9.0% Max AT CURB

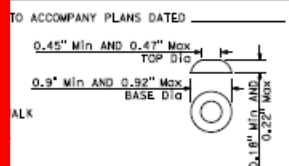
CASE A

TYPICAL TWO-RAMP CORNER INSTALLATION
See Note 1

TYPICAL ONE-RAMP CORNER INSTALLATION
See Notes 1 and 3



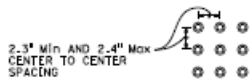
GROOVING DETAIL



RAISED TRUNCATED DOME

NOTES:

1. As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
2. If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
3. When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
4. As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
5. If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-2".
6. Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
7. The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
8. Transitions from ramps and landing to walks, gutters or streets shall be flush (no lip) and free of abrupt changes.
9. Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1:20. Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
10. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Standard Specifications.
11. The edge of the detectable warning surface nearest the street shall be between 5" and 8" from the gutter flowline.
12. Sidewalk and ramp thickness, "T", shall be 3 1/2" minimum.
13. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
14. Detectable warning surface may have to be cut to allow removal of utility covers while maintaining full detectable warning width and depth.



RAISED TRUNCATED DOME PATTERN (IN-LINE)
DETECTABLE WARNING SURFACE

See Note 10

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CURB RAMP DETAILS
NO SCALE

RSP A88A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A88A DATED MAY 20, 2011 - PAGE 121 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A88A

| DIST | COUNTY | ROUTE | RDY MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|-------------------------|-----------|--------------|
| | | | | | |

REGISTERED CIVIL ENGINEER

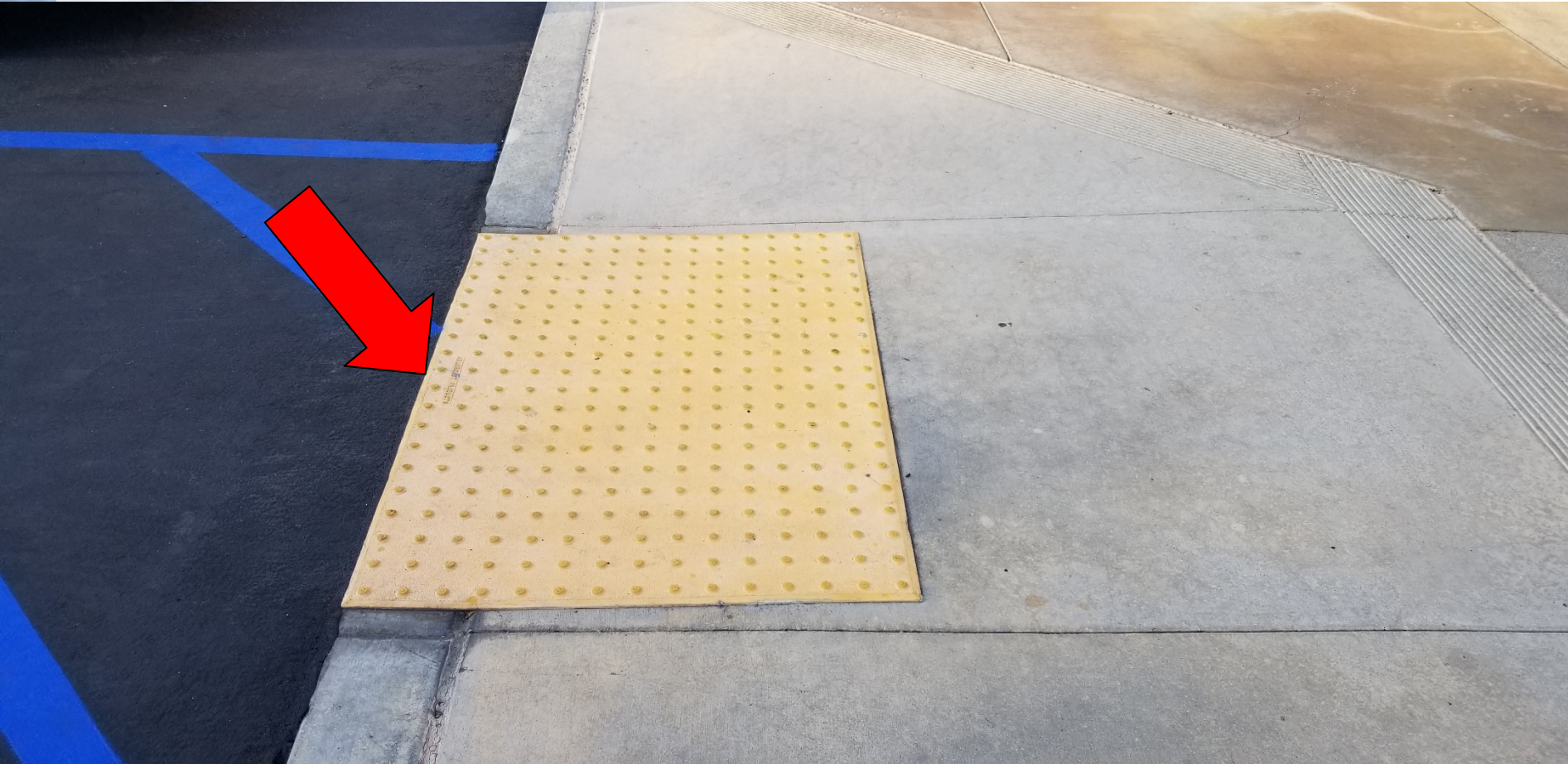
PLANS APPROVAL DATE

FOR STATE OF CALIFORNIA IN THE OFFICIAL CAPACITY OF AN AGENT SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SKETCHES OR DATA ON THIS PLAN SHEET.

PROFESSIONAL SEAL
Michele Davis
041957
3-31-14
CIVIL ENGINEER
STATE OF CALIFORNIA

2010 REVISED STANDARD PLAN RSP A88A

Detectable Warning Surface



Detectable Warning Surface

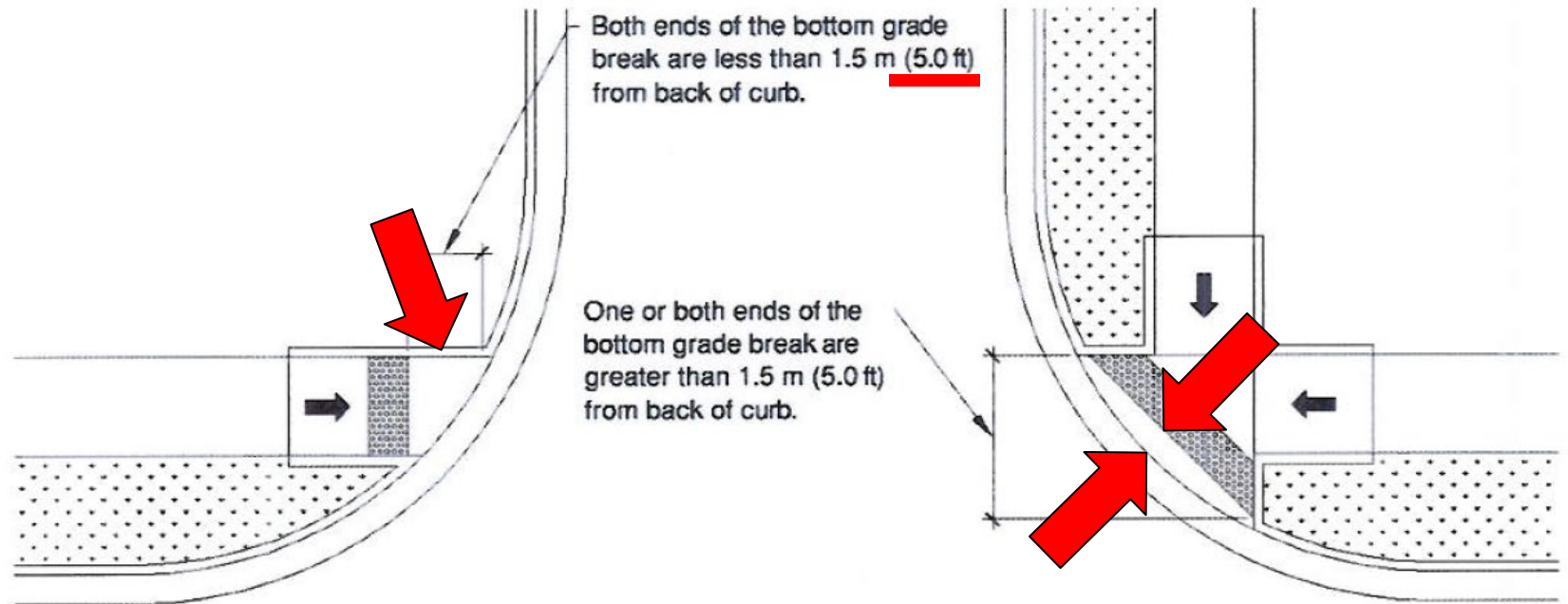




Detectable Warning Surface

DIB 82-06

Section 4.3.14



Def

Surface

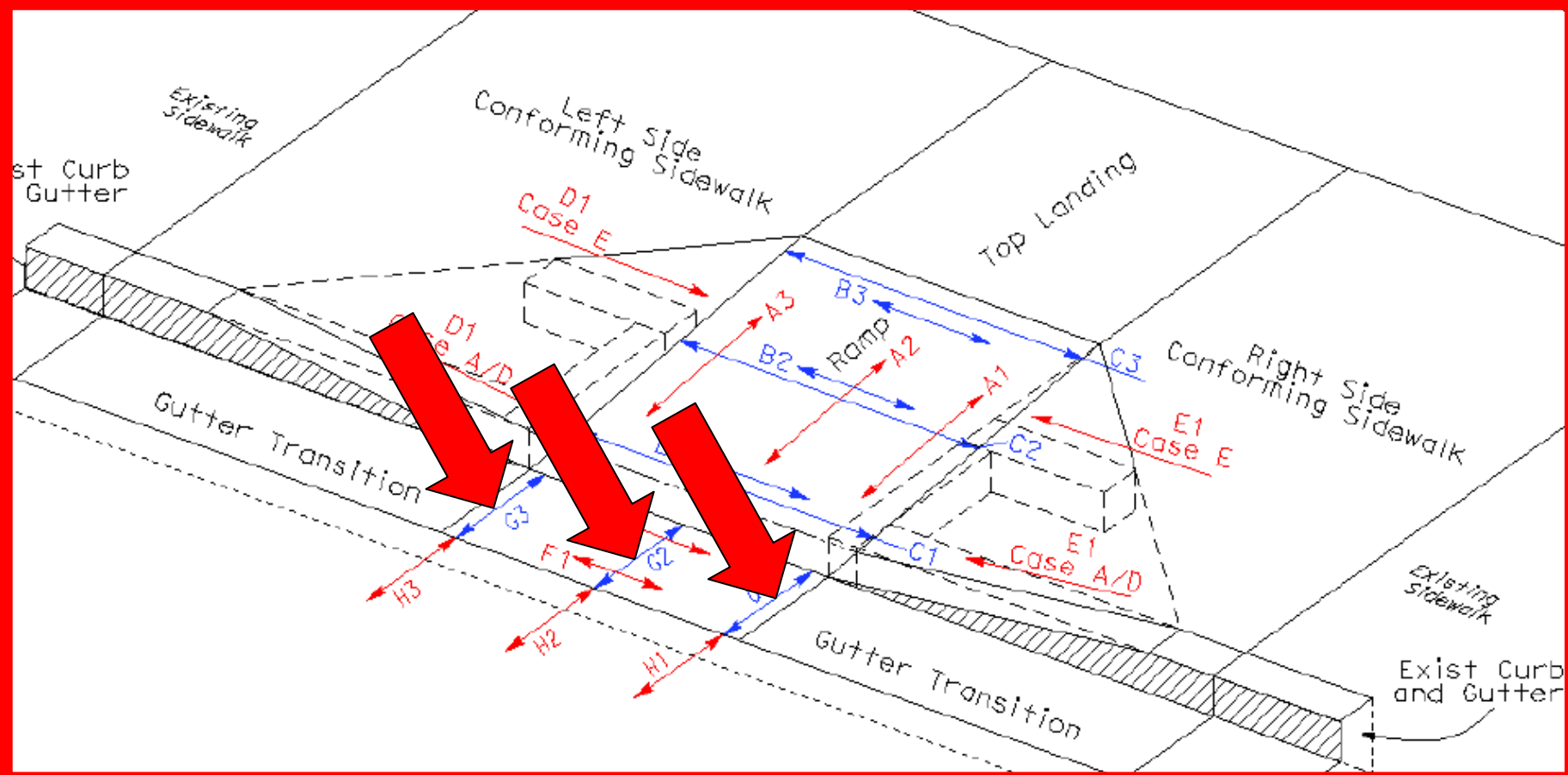


Top 5 Noncompliant Features

- **Gutter Slope**
- **Detectable Warning – Full Width**
- **Detectable Warning – Setback**
- **Gutter Cross Slope**
- **Bottom Landing Length**

CONTRACTOR NAME AND ADDRESS

CONTRACT NUMBER/CO/RTE/PM



| | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|---|
| <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | greater? <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Gutter is 24" or more wide. |
|--|--|--|--|--|--|--|--|--|--|---|

Remarks

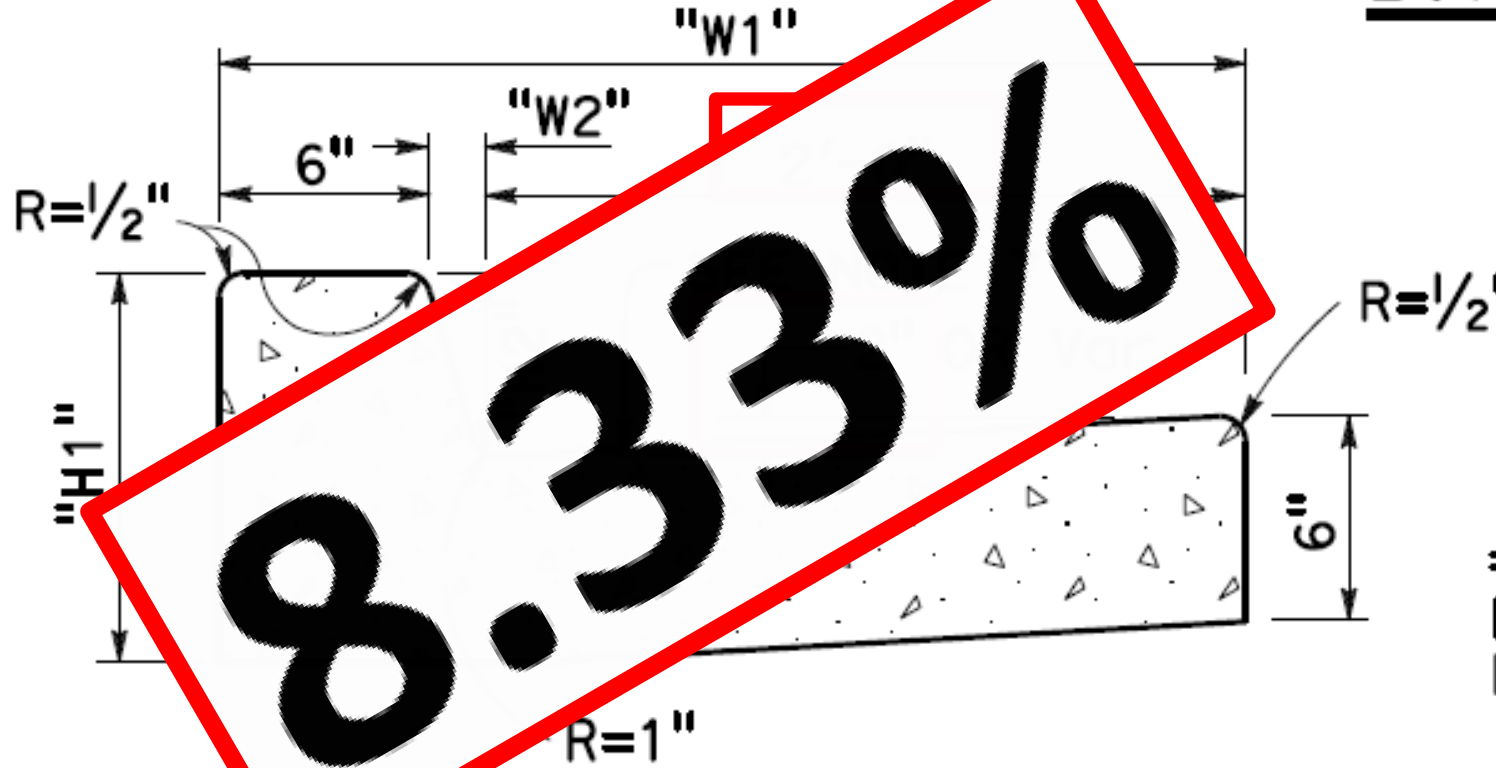
| | | |
|----------------------------|-----------|------|
| Inspection by (print name) | Signature | Date |
|----------------------------|-----------|------|

Gutter Pan Transition

DR

| POST MEAS. | SHEET | TOTAL |
|---------------|-------|--------|
| TOTAL PROJECT | NO. | SHEETS |
| | | |

REGISTERED PROFESSIONAL ENGINEER
 Michael J. Jones
 No. 3-11-14
 State of California
 CIVIL



CURB QUANTITIES

| CUBIC YARDS PER LINEAR FOOT |
|-----------------------------|
| 0.02585 |
| 0.03084 |
| 0.05903 |
| 0.06379 |
| 0.01036 |
| 0.01435 |
| 0.02185 |
| 0.02930 |
| 0.05515 |
| 0.06171 |
| 0.00641 |
| 0.01074 |
| 0.05709 |
| 0.04083 |
| 0.06804 |
| 0.06661 |

2015 STANDARD PLAN A87A

TYPE A2 CURBS

See Table A

exceed 15%, reduce driveway fall slope, not gutter slope, where required.

NO SCALE

WAYS

A87A

Gutter Pan Transition

DIB 82-06

Section 4.3.8 (4)

Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1 V:20 H (5.0%).

Gutter Slope



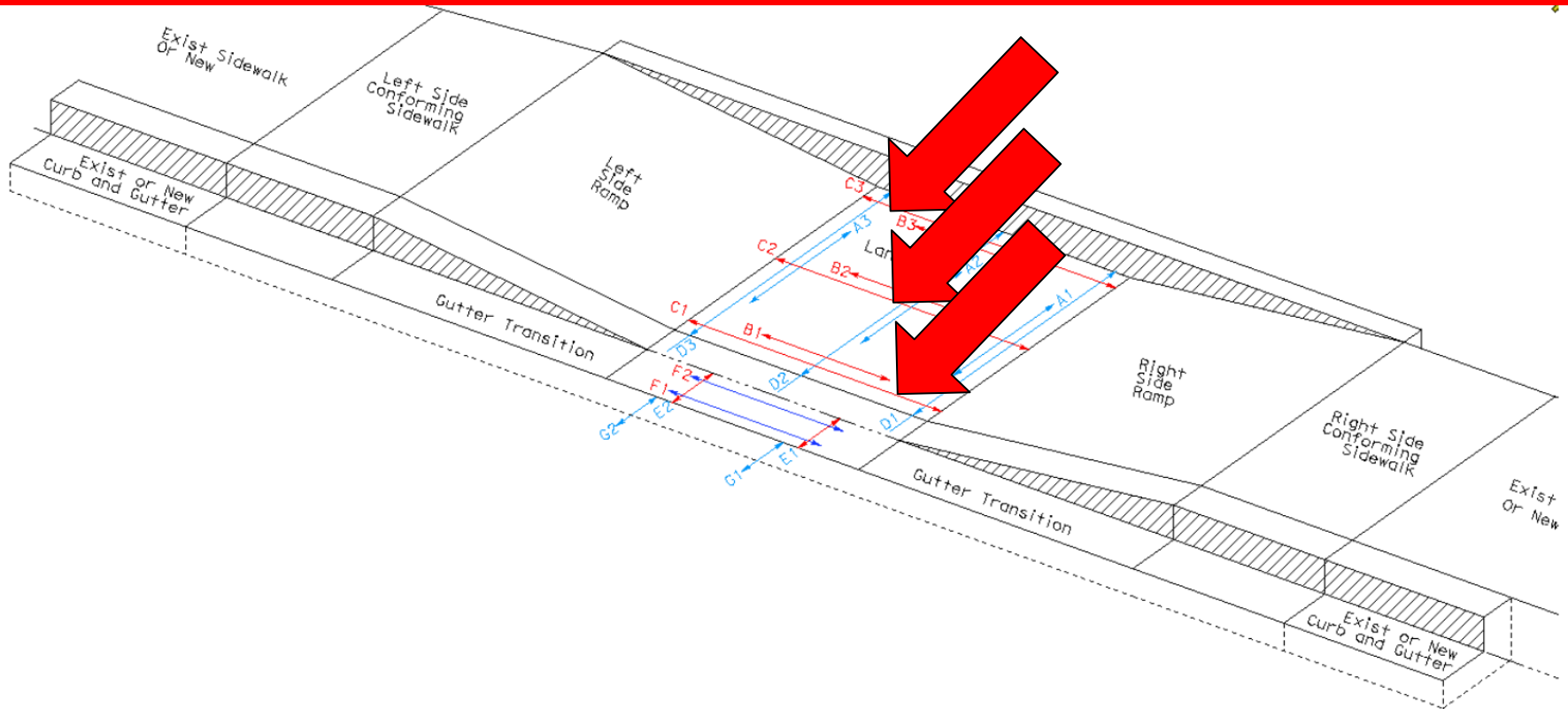
Gutter Slope



Top 5 Noncompliant Features

- **Gutter Slope**
- **Detectable Warning – Full Width**
- **Detectable Warning – Setback**
- **Gutter Cross Slope**
- **Bottom Landing Length**

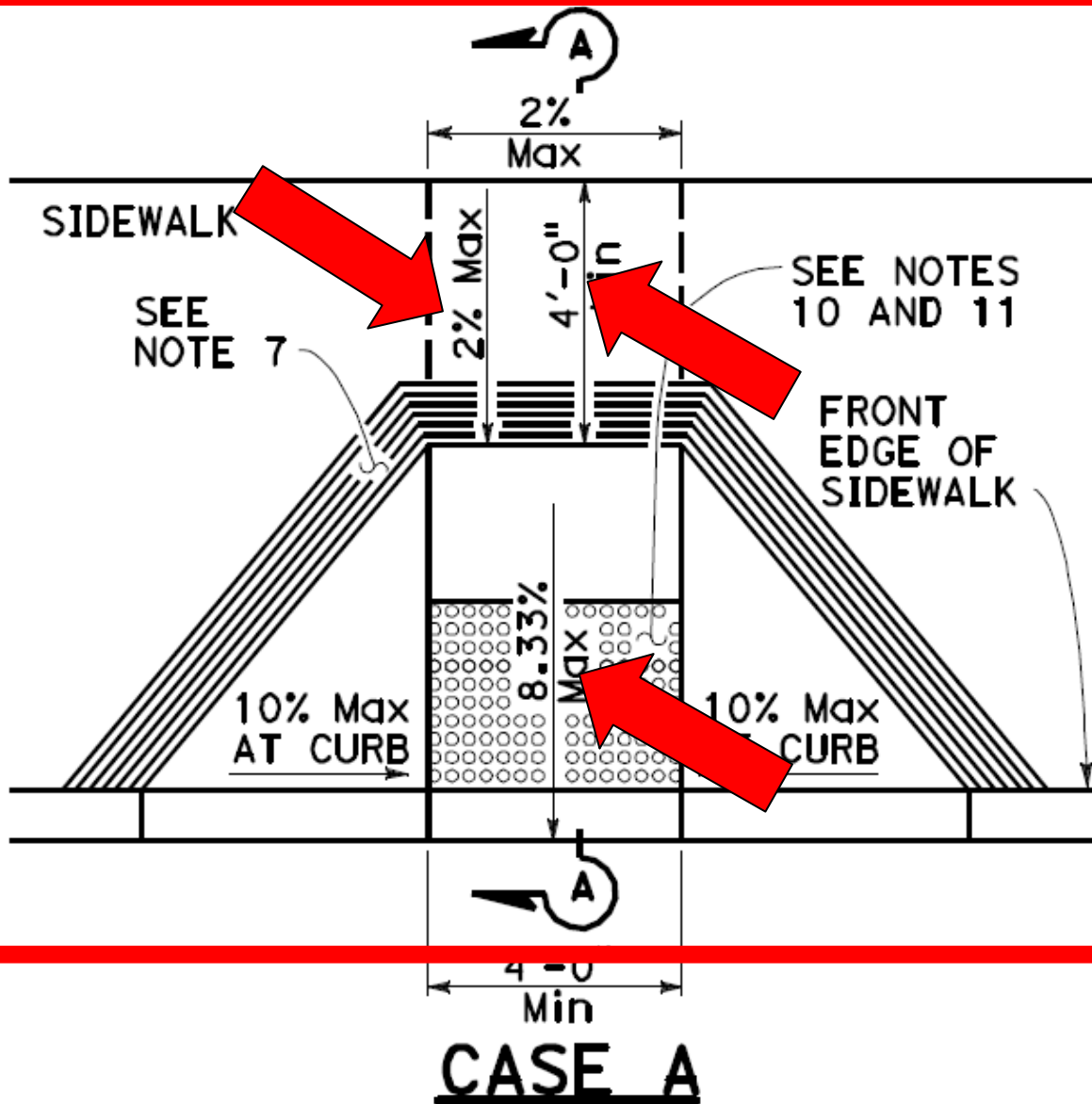
| | | | |
|-----------------------------|------------|-------------------------------|-----------------|
| CONTRACTOR NAME AND ADDRESS | | CONTRACT NUMBER/CO/RTE/PM | |
| | | PROJECT IDENTIFICATION NUMBER | |
| | | PROJECT INFORMATION/NAME | |
| Location Number | Route Name | Intersection Quadrant | Passageway Type |



| | | | | | | | |
|--|--|--|--|--|--|--|---|
| <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | <input type="checkbox"/> N/A Gutter is 24" or more wide. |
|--|--|--|--|--|--|--|---|

Remarks

Inspection by (print name) _____ Signature _____ Date _____



CASE A

DETAIL A
TYPICAL TWO-RAMP CORNER INSTALLATION
See Note 1

CORNER INSTALLATION
See Notes 1 and 3

RETROFIT DETAIL
Existing curb and sidewalk

| | | | | | |
|-------|--------|-------|---------------|-----------|--------------|
| DIST. | COUNTY | ROUTE | POST MILES | SHEET NO. | TOTAL SHEETS |
| | | | TOTAL PROJECT | | |

Victor David Cohen
 REGISTERED CIVIL ENGINEER
 May 20, 2011
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA IS THE SOLE GUARANTEE OF THE ACCURACY OF THE INFORMATION SHOWN ON THESE PLANS. THE USER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SHOWN LEGENDS OR PLAN SHEET.

RAISED TRUNCATED DOME

- NOTES:**
- As site conditions dictate, Case A through Case C curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case C curb ramps also may be used at mid block locations, as site conditions dictate.
 - If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
 - When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
 - As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
 - If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
 - Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
 - The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/2" grooves approximately 3/4" on center. See grooving detail.
 - Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
 - Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
 - Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
 - The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
 - Sidewalk and ramp thickness, 4", shall be 3 1/2" minimum.
 - Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
 - For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CURB RAMP DETAILS
NO SCALE

A88A

2010 STANDARD PLAN A88A

Gutter not shown



6" Min
RETAIN

1.5%
Max

SIDEWALK

1.5% Max

4'-2"
Min

SEE NOTE 10

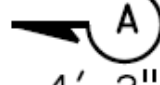
FRONT
EDGE OF
SIDEWALK

9.0% Max
AT CURB

7.5%
Max

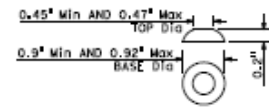
9.0% Max
AT CURB

1.5% Max



4'-2"
Min

CASE A

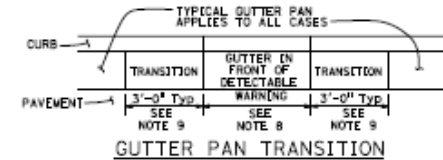


RAISED TRUNCATED DOME



DETECTABLE WARNING SURFACE

- NOTES:** See Note 10
1. As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Cases A through Case G curb ramps also may be used at mid block locations, as site conditions dictate. For specific site condition configuration, including the conform to existing sidewalk, see Project Plans.
 2. If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B or C or may be widened as in Case D.
 3. When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
 4. As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
 5. The ramp portion of the curb ramp is a typical rectangle, unless modified in the Project Plans.
 6. Side slope of ramp flares vary uniformly from a maximum of 9.0% of curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
 7. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
 8. Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb shall not be steeper than 1/4" per 12" (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
 9. Transition gutter pan slope from 1" of depth for each 2'-0" of width to match typical gutter pan slope per Standard Plan A87A.
 10. The detectable warning surface will be a rectangle as shown at back of curb, unless modified in the Project Plans. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable warning surfaces shall extend the full width of the ramp except a maximum gap of 1 inch is allowed on each side of the ramp. Detectable warning surfaces shall conform to the requirements in the Standard Specifications.
 11. Sidewalk and ramp thickness, "T", shall be 3 1/2" minimum.
 12. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
 13. Detectable warning surface may have to be cut to allow removal of utility covers while maintaining detectable warning width and depth.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CURB RAMP DETAILS
NO SCALE

| DIST. | COUNTY | ROUTE | POST MILES | SHEET NO. | TOTAL SHEETS |
|-------|--------|-------|------------|-----------|--------------|
| | | | | | |

REGISTERED CIVIL ENGINEER

May 31, 2018
PLANS APPROVAL DATE

FOR STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
Lynn Wiley
CS4415
12-31-19
1116
STATE OF CALIFORNIA

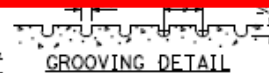
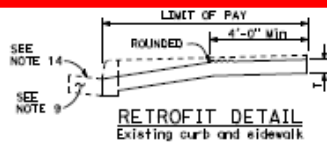
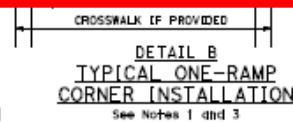
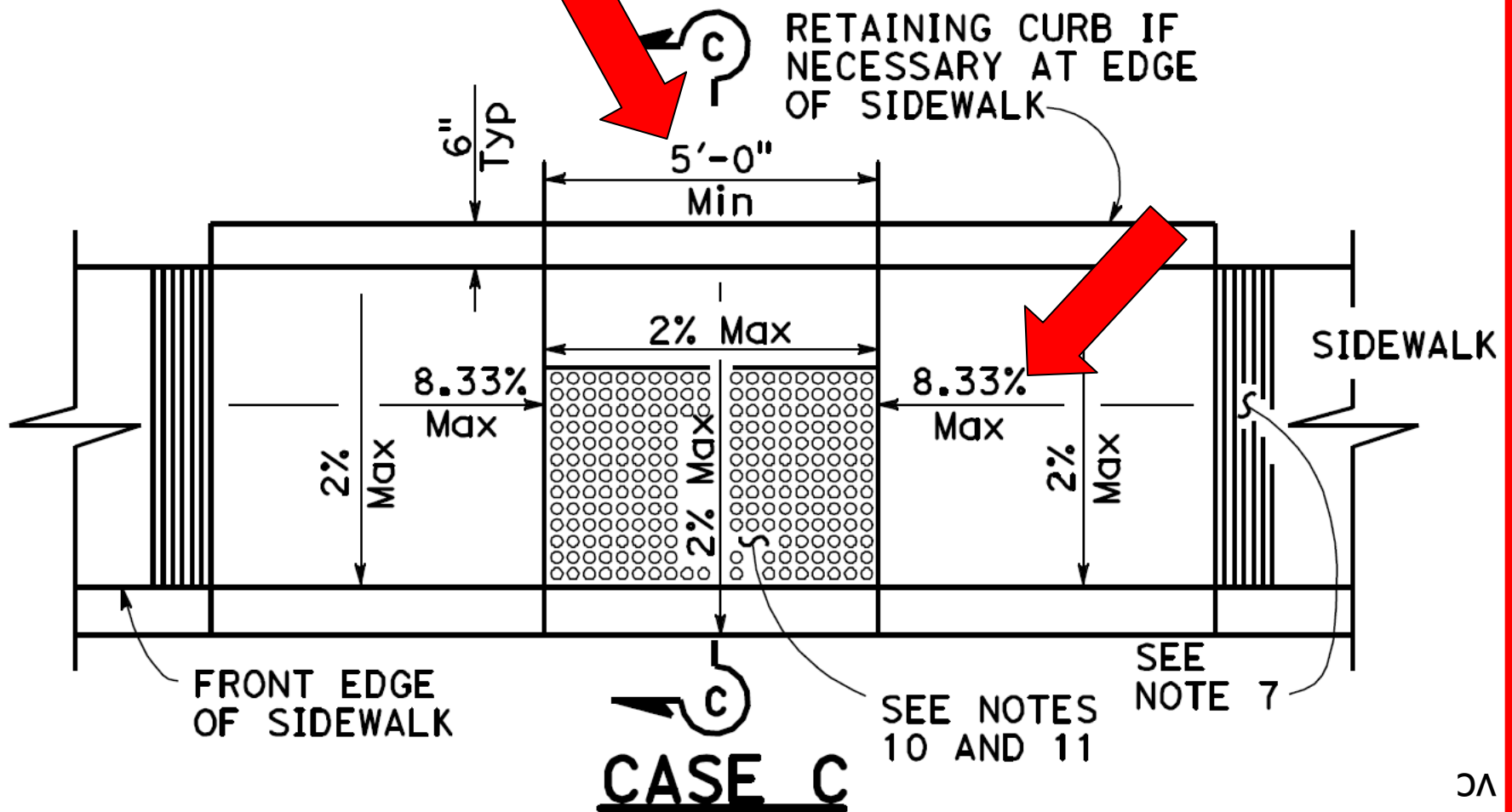
2018 STANDARD PLAN A88A

See Note 1

See Notes 1 and 3

A88A

Bottom Landing

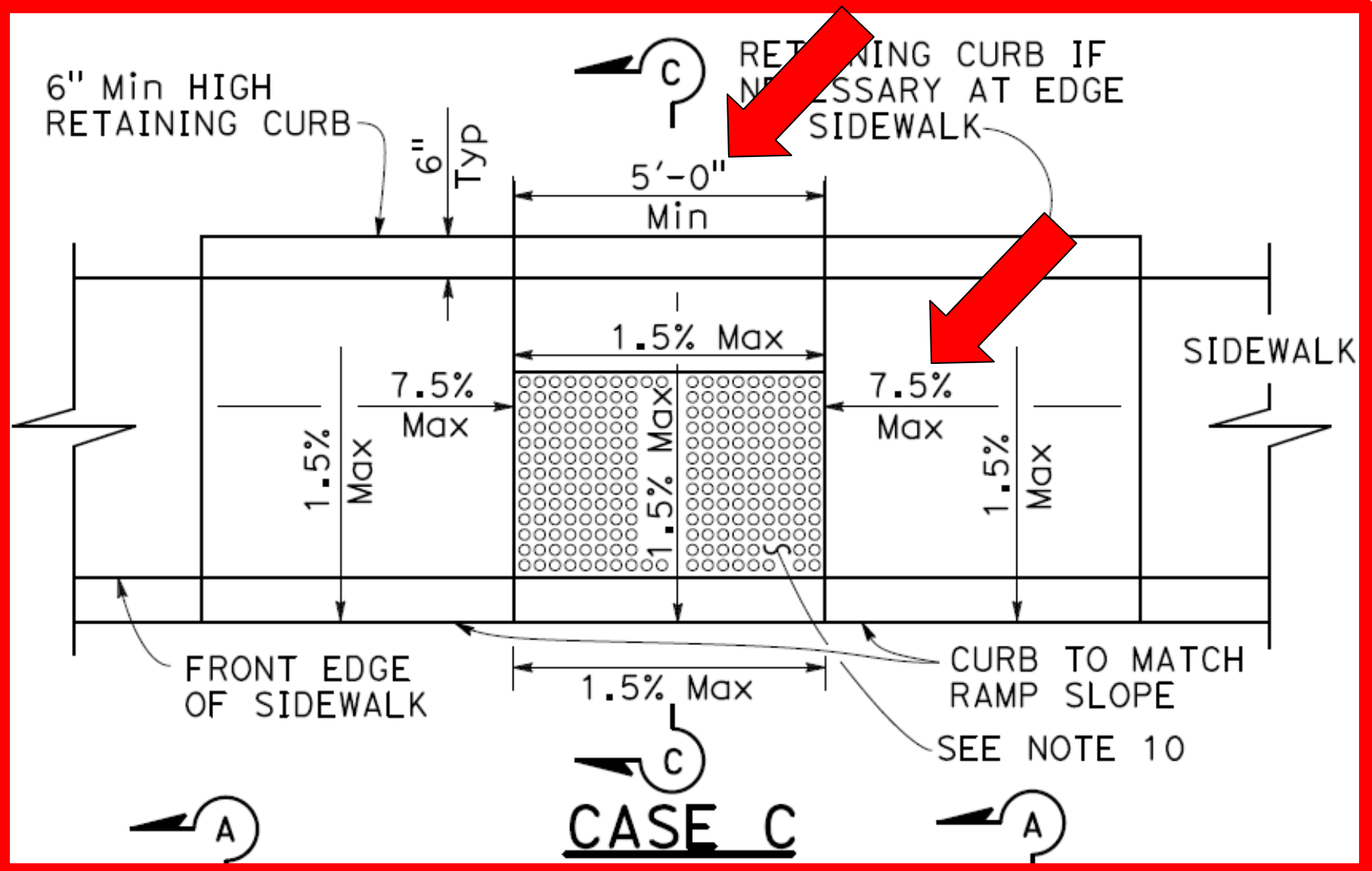


STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CURB RAMP DETAILS
NO SCALE

A88A

CA

Bottom Landing



TYPICAL TWO-RAMP
CORNER INSTALLATION
See Note 1

TYPICAL ONE-RAMP
CORNER INSTALLATION
See Notes 1 and 3

NO SCALE
RSP ABBA DATED JULY 21, 2017 SUPERSEDES RSP ABBA DATED JULY 15, 2016 AND STANDARD
PLAN ABBA DATED OCTOBER 30, 2015 - PAGE 127 OF THE STANDARD PLANS BOOK DATED 2015.
REVISED STANDARD PLAN RSP ABBA



Design Checklist

Checklists

File Home Share View

← → ▾ ↑ Home Drive (H:) > Dist 7 > Work in Progress Files >

OneDrive

This PC

3D Objects

Desktop

Documents

Downloads

Music

Pictures

Videos

Local Disk (C:)

DATA (D:)

Name

Case B-7-16-20-20.docx

Case B-8-19-20-20.docx

Case F-G-8-19-20.docx

Case CM-8-19-20.docx

Case CH-7-16-20.docx

Case CH-8-19-20.docx

Case C-8-19-20.docx

Case A-D-E_8-19-20.docx

Case C-7-16-20.docx

Case A-D-E_7-16-20.docx

Case F-G-7-16-20.docx

Case CM-7-16-20.docx

21 items

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CURB RAMP (CASE A, D, OR E) AMERICANS WITH DISABILITIES ACT (ADA)
COMPLIANCE REPORT
 CEM-XXXXADE (REV XXXXXX)

Page 1 of 7

| | |
|-----------------------|---------------------------------------|
| PROJECT ENGINEER NAME | EXPENDITURE AUTHORIZATION NUMBER (EA) |
| | PROJECT NUMBER (EFIS) |
| | PROJECT NAME |

CURB RAMP INFORMATION

| | | | |
|---|--|---|---|
| Location Number | County | City | Route |
| Route Name | | Cross Street | |
| Latitude (y) | Postmile/Station | Intersection Control - Mark all that apply | Construction Type |
| Longitude (x) | Street Grade (%) | <input type="checkbox"/> None <input type="checkbox"/> Stop/Yield <input type="checkbox"/> Signalized | <input type="checkbox"/> New <input type="checkbox"/> Retrofit |
| Ramp Case | Intersection Quadrant | Applicable Standard Plans | Applicable Standard Specifications |
| <input type="checkbox"/> Case A <input type="checkbox"/> Case D | <input type="checkbox"/> Northwest <input type="checkbox"/> Northeast | <input type="checkbox"/> 2015 Standard Plan A88A <input type="checkbox"/> 2015 Revised Standard Plan A88A Dated: | <input type="checkbox"/> 2015 <input type="checkbox"/> 2018 |
| Ramp | | Ramp | |
| <input type="checkbox"/> Single <input type="checkbox"/> Dual Ramp 1 <input type="checkbox"/> Dual Ramp 2 | | <input type="checkbox"/> Single <input type="checkbox"/> Dual Ramp 1 <input type="checkbox"/> Dual Ramp 2 | |

| | |
|---|--|
| Are Pre/Post Construction Survey required? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| If yes, has a Pre/Post Construction Survey item been added to the Q Sheets? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are there any Design Exceptions required? If answered yes, check boxes and complete information where applicable. | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| <input type="checkbox"/> DIB 82: | Feature Number(s) _____ Approval Date(s) _____ |
| <input type="checkbox"/> HDM Index 105: | Approval Date _____ |
| <input type="checkbox"/> HDM Index 105.2: Sidewalks and Walkway | Approval Date _____ |
| <input type="checkbox"/> HDM Index 105.5(2): Location and Design of Curb Ramps | Approval Date _____ |
| Are the Design Exceptions listed above included in the RE Pending file? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

| | | |
|-----------------------|-----------|------|
| Engineer (print name) | Signature | Date |
|-----------------------|-----------|------|

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Ramp
Slope
(X.X%)

A1

8.33% or less?

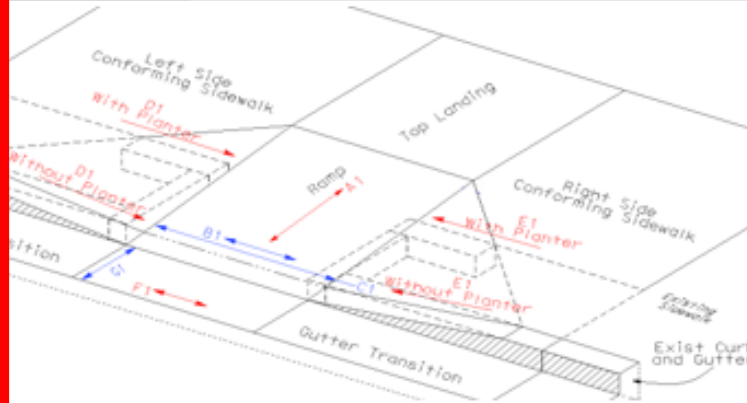
Yes No

If marked "no,"
is the ramp
length over
15'?

Yes No

| | | | |
|---------------------------------|---|---------------------------------------|--|
| PROJECT ENGINEER NAME | | EXPENDITURE AUTHORIZATION NUMBER (EA) | |
| PROJECT NUMBER (EFIS) | | PROJECT NAME | |
| Ramp Case | Intersection Quadrant | Ramp | |
| <input type="checkbox"/> Case A | <input type="checkbox"/> Northwest <input type="checkbox"/> Southwest | <input type="checkbox"/> Single | |
| <input type="checkbox"/> Case D | <input type="checkbox"/> Northeast <input type="checkbox"/> Southeast | <input type="checkbox"/> Dual Ramp 1 | |
| <input type="checkbox"/> Case E | <input type="checkbox"/> Mid-Block | <input type="checkbox"/> Dual Ramp 2 | |

CURB RAMP (CASE A, D, OR E) MEASUREMENT 8: RAMP, FLARE & GUTTER



Verify ADA compliance dimensions and slopes:

| | Ramp Width (inches) | Left Flare Slope at Front Edge of Sidewalk (X.X%) | Right Flare Slope at Front Edge of Sidewalk (X.X%) | Gutter Slope (X.X%) | Gutter Cross Slope (X.X%) |
|-----------|--|--|--|--|--|
| | C1 | D1 | E1 | F1 | G1 |
| | 48" or greater? | 10.0% or less? | 10.0% or less? | 2.0% or less? | 5.0% or less? |
| | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| | | | | If marked "no," is the crossing uncontrolled or signalized? <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | | | If marked "no," does the scope of the project fall under DIB 82-06, Section 4.1.2? <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Signature | | | Date | | |

Ramp Cross Slope (X.X%)

B1

2.0% or less?

Yes No

If marked "no," is the crossing uncontrolled or signalized and is 5% or less?

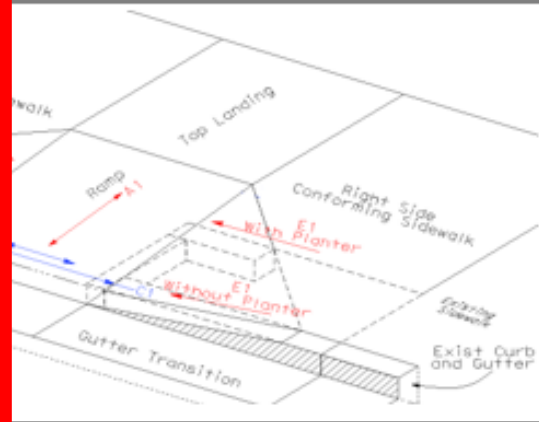
Yes No

If marked "no," does the scope of the project fall under DIB 82-06, Section 4.1.2?

Yes No

| | | |
|---------------------------------------|---|--------------------------------------|
| EXPENDITURE AUTHORIZATION NUMBER (EA) | | |
| PROJECT NUMBER (EFIS) | | |
| PROJECT NAME | | |
| Ramp Case | Intersection Quadrant | Ramp |
| <input type="checkbox"/> Case A | <input type="checkbox"/> Northwest <input type="checkbox"/> Southwest | <input type="checkbox"/> Single |
| <input type="checkbox"/> Case D | <input type="checkbox"/> Northeast <input type="checkbox"/> Southeast | <input type="checkbox"/> Dual Ramp 1 |
| <input type="checkbox"/> Case E | <input type="checkbox"/> Mid-Block | <input type="checkbox"/> Dual Ramp 2 |

MEASUREMENT 8: RAMP, FLARE & GUTTER



Provide dimensions and slopes:

| Left Flare Slope Front Edge Sidewalk (x.x%) | Right Flare Slope at Front Edge of Sidewalk (x.x%) | Gutter Slope (x.x%) | Gutter Cross Slope (x.x%) |
|---|--|--|---|
| E1 | F1 | G1 | |
| 2.0% or less? Yes <input type="checkbox"/> No <input type="checkbox"/> | 10.0% or less? Yes <input type="checkbox"/> No <input type="checkbox"/> | 2.0% or less? Yes <input type="checkbox"/> No <input type="checkbox"/> If marked "no," is the crossing uncontrolled or signalized? Yes <input type="checkbox"/> No <input type="checkbox"/> If marked "no," does the scope of the project fall under DIB 82-06, Section 4.1.2? Yes <input type="checkbox"/> No <input type="checkbox"/> | 5.0% or less? Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Date | | | |

| | | | | |
|-----------------------|--------------|---|--|---|
| PROJECT ENGINEER NAME | | EXPENDITURE AUTHORIZATION NUMBER (EA) | | |
| | | PROJECT NUMBER (EFIS) | | |
| | | PROJECT NAME | | |
| Location Number | Route Name | Ramp Case | Intersection Quadrant | Ramp |
| | Cross Street | <input type="checkbox"/> Case A <input type="checkbox"/> Case D <input type="checkbox"/> Case E | <input type="checkbox"/> Northwest <input type="checkbox"/> Northeast <input type="checkbox"/> Mid-Block <input type="checkbox"/> Southwest <input type="checkbox"/> Southeast | <input type="checkbox"/> Single <input type="checkbox"/> Dual Ramp 1 <input type="checkbox"/> Dual Ramp 2 |

| Item No. | Requirement |
|----------|---|
| 1 | Is the detectable warning surface <u>yellow in color</u> ? |
| 2 | If marked " <u>no</u> " for item 1, has an <u>NSSP</u> been approved? If yes, provide NSSP approval date: _____ |

| | | |
|----|---|---|
| 5 | Is the detectable warning surface placed at the lower landing at the back of curb where the distance from either end of the bottom grade break to the back of curb is more than 5.0 ft.? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 6 | Are any utility boxes, manholes, or vaults within the boundary of curb ramp called-out for "Adjust to Grade"? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 7 | For obstructions such as signposts, lighting standards, power/telephone poles, guywires, or mailboxes in the construction area, complete items 8-11. If no obstructions are located within the construction area skip to item 12. | Item 8-11 <input type="checkbox"/> N/A |
| 8 | Are objects with leading edges between 27" to 80" height, protected by guardrails or other barriers less than 27" above the finished surface? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 9 | For objects with leading edges between 27" to 80" height, is horizontal protrusion less than 4" (4.5" for handrails) without reducing the 48" minimum clear width requirement? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 10 | For objects mounted on single posts that overhang the sidewalk or curb ramp, are the overhangs less than 12" when located between heights of 27" to 80"? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 11 | For objects mounted between posts, where the clear distance between posts is greater than 12", is the lowest edge of such object less than 27" or greater than 80" above the finished surface? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 12 | For a curb ramp at a signalized intersection, complete items 13-16. If not at signalized intersection, skip to item 17. | Item 13-16 <input type="checkbox"/> N/A |
| 13 | Is the pedestrian push button wheelchair accessible from unobstructed forward reach? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 14 | Is the pedestrian push button wheelchair accessible from unobstructed side reach? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |

| | | |
|-----------------------|-----------|------|
| Engineer (print name) | Signature | Date |
| | | |

| | | | | |
|-----------------------|--------------|---|--|---|
| PROJECT ENGINEER NAME | | EXPENDITURE AUTHORIZATION NUMBER (EA) | | |
| | | PROJECT NUMBER (EFIS) | | |
| | | PROJECT NAME | | |
| Location Number | Route Name | Ramp Case | Intersection Quadrant | Ramp |
| | Cross Street | <input type="checkbox"/> Case A <input type="checkbox"/> Case D <input type="checkbox"/> Case E | <input type="checkbox"/> Northwest <input type="checkbox"/> Northeast <input type="checkbox"/> Mid-Block | <input type="checkbox"/> Southwest <input type="checkbox"/> Southeast |
| | | | | <input type="checkbox"/> Single <input type="checkbox"/> Dual Ramp 1 <input type="checkbox"/> Dual Ramp 2 |

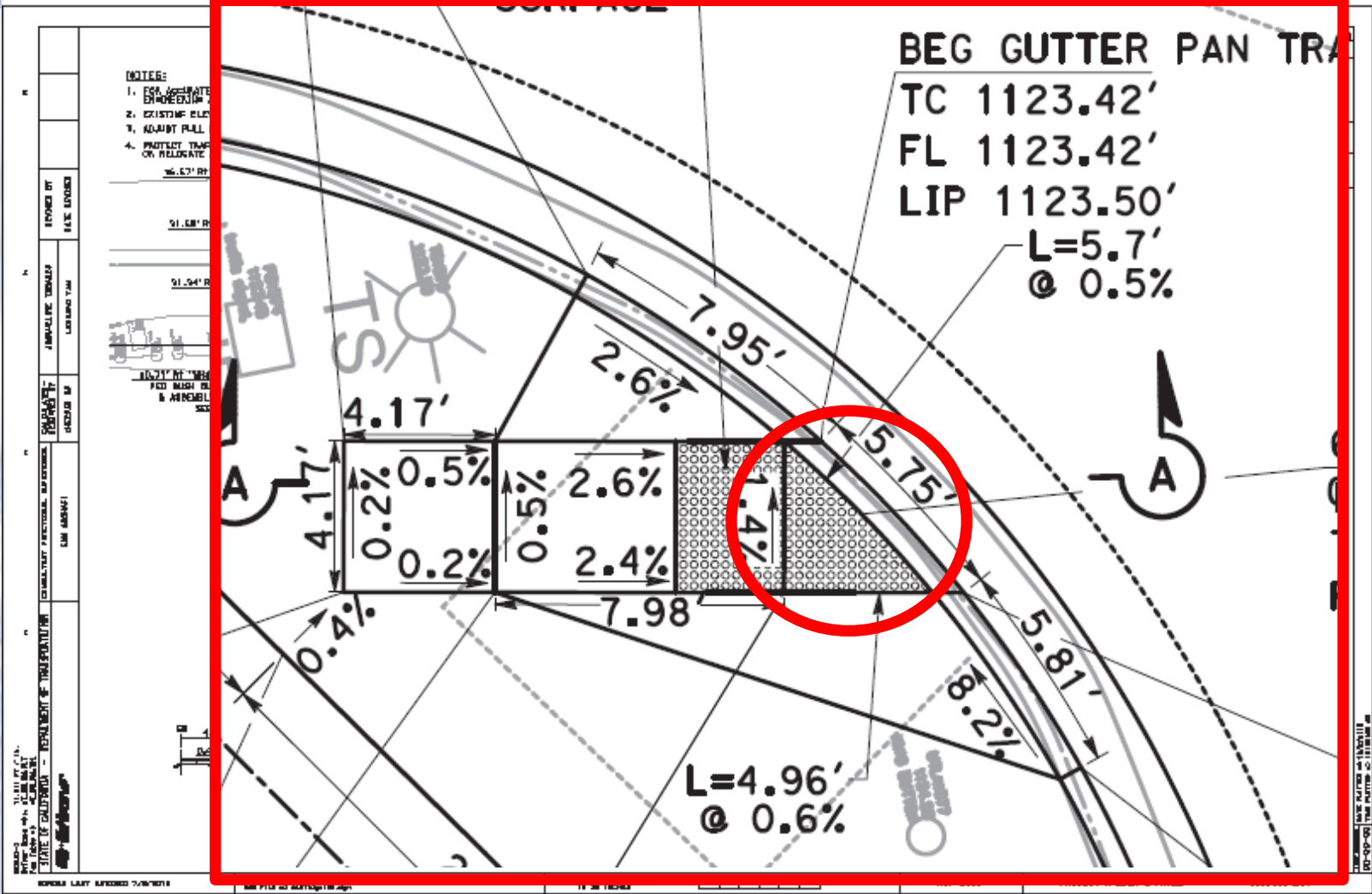
ADA CURB RAMP (CASE A, D, OR E) CHECKLIST

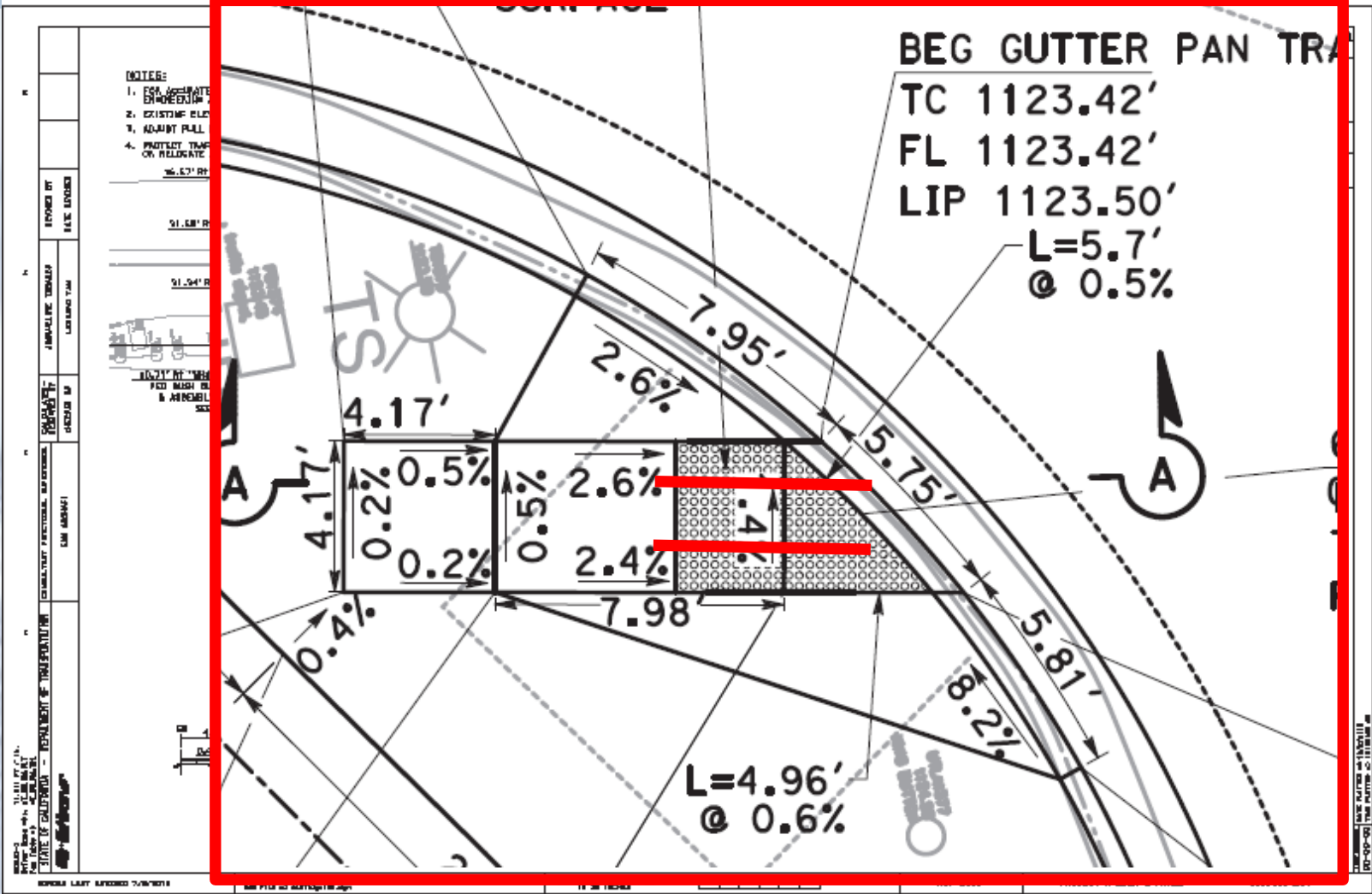
| Item No. | Requirement | Compliant |
|----------|---|---|
| 15 | For unobstructed side reach, is the pedestrian push button within 10 inches of the edge of sidewalk? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 16 | Is the sidewalk slope and cross slope less than 2.0% within the 30" x 48" area adjacent to the pedestrian push button? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 17 | For a curb ramp located at an intersection with a marked crosswalk answer items 18-21. If no crosswalk, skip to item 22. | Item 18-21 <input type="checkbox"/> N/A |
| 18 | Does the crosswalk line up with the curb ramp? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 19 | For one-ramp corner (diagonal) installation, is the crosswalk a minimum of 4'-2" back from bottom of curb ramp, as shown on Standard Plan AB8A Detail B? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 20 | For one ramp corner (diagonal) installation with flared sides, is there at least a 24-inch long segment of curb ramp within the crosswalk, as shown on Standard Plan AB8A Detail B? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 21 | Is there a minimum area of 48" x 48" within the crosswalk in front of the curb ramp? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| 22 | Is the roadway surface within the pedestrian street crossing area in good condition? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

- | | |
|----|--|
| 25 | Is the <u>curb ramp directional</u> ? If yes, answer items 26-27. Mark N/A if not directional. |
| 26 | Is the slope of the <u>triangular area</u> below the bottom grade break <u>2% or less</u> ? |
| 27 | Is there a grade break that is <u>perpendicular to the crosswalk travel</u> at the bottom of the ramp? |

| | | |
|-----------------------|-----------|------|
| Engineer (print name) | Signature | Date |
| | | |







Also regarding (8), if there is a stop sign for the minor leg but not for the major highway, the curb ramp cross slope serving the minor leg crossing will be limited to 2% maximum; but the curb ramp cross slope serving the major highway crossing should not exceed the major highway grade. A single diagonal curb ramp cross slope should be designed to the lowest feasible cross slope but not to exceed the average of the two cross slopes prescribed for each leg.

Standard Plan A88A shows the illustration of curb ramps that may apply to curved alignments on a corner or on a tangent. Detail B of Standard Plan A88A shows a diagonal curb ramp, which is a single curb ramp of any case type that is located at the apex of the corner at an intersection per Part II of *Designing Sidewalks and Trails for Access*. The ramp width shall be consistent with the width of the pedestrian access route. Flares are needed if the curb ramp is located where pedestrians may traverse across the ramp.

The Federal recommendation found in Part II of *Designing Sidewalks and Trails for Access* is for curb ramps to be aligned perpendicular to curb face. However, directional curb ramps may be designed by showing a bottom grade break perpendicular to crosswalk travel.

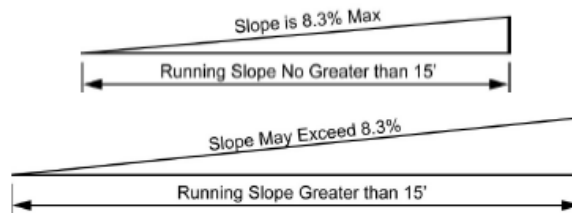
In some cases a curb ramp cannot be constructed because there is no sidewalk at the intersection. However, there may be reason to provide a blended transition, which could be at-grade. For example a traffic signal with pedestrian push buttons, where there is no sidewalk, should have a blended transition (1) at the push button location. In this case, the clear width (2), landing (3), counter slope (4), and cross slope (8) applies; Sections 4.3.14 (1) Detectable Warning Surfaces and 4.3.15 Reach Ranges also applies.

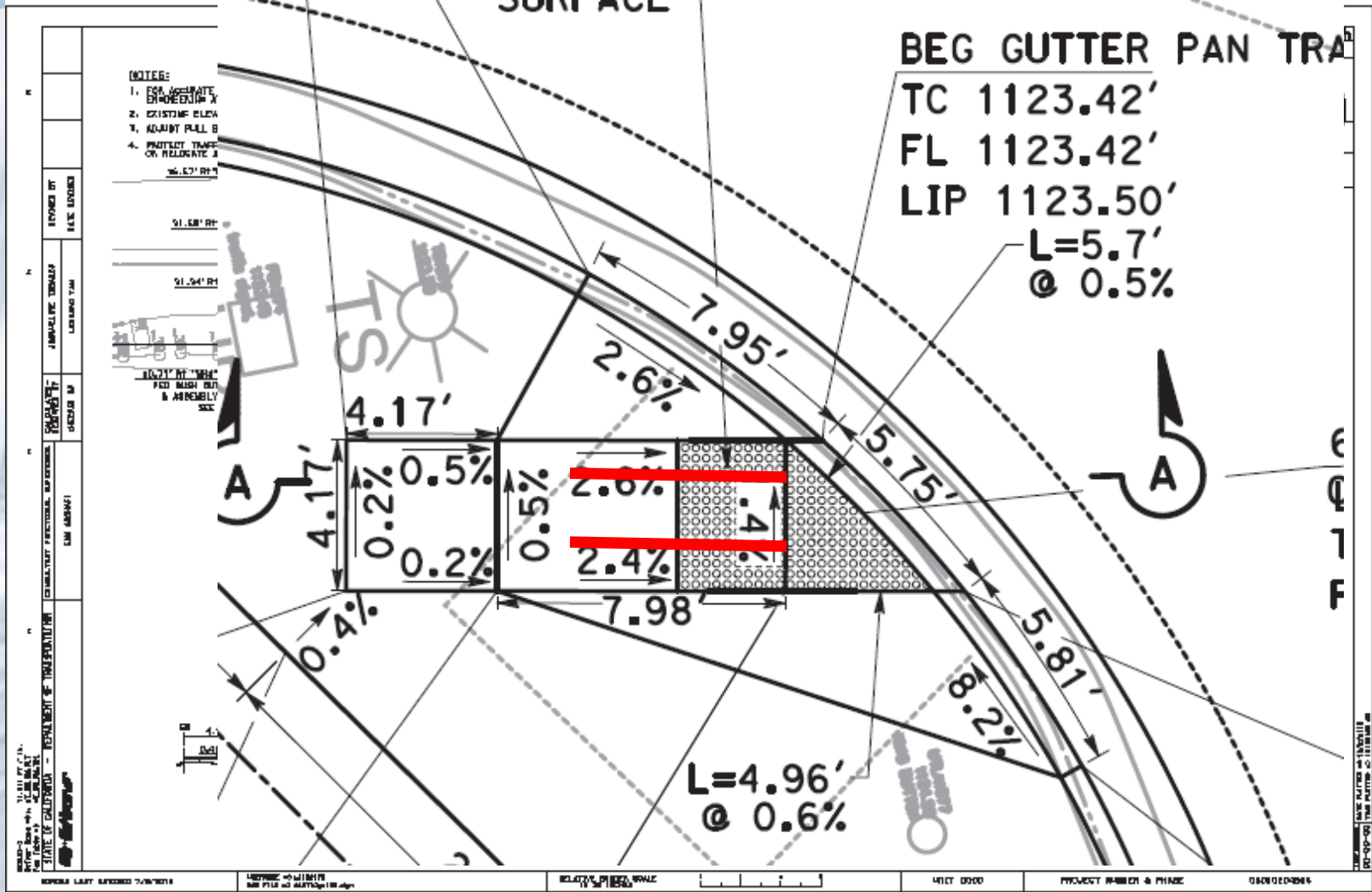
The Federal recommendation found in Part II of *Designing Sidewalks and Trails for Access* is for curb ramps to be aligned perpendicular to curb face. However, directional curb ramps may be designed by showing a bottom grade break perpendicular to crosswalk travel.

| Height of Curb Face | Curb Ramp Run (Horizontal Length) |
|---------------------|-----------------------------------|
| 4 inches | 63 inches |
| 5 inches | 78 inches |
| 6 inches | 95 inches |
| 7 inches | 111 inches |
| 7-½ inches | 118-½ inches |
| 8 inches | 126 inches |

Figure 4.3.8 (1) illustrates the intent of Section 4.3.8 (1).

FIGURE 4.3.8 (1) – Running Slope





The background of the slide is an abstract composition of light blue and white. On the left side, there are several curved, overlapping lines that create a sense of depth and movement, resembling a stylized architectural structure or a series of flowing paths. The rest of the background is a plain, light blue color.

Questions?