

STANDARD PLANS



ORANGE COUNTY

**RESOURCES & DEVELOPMENT
MANAGEMENT DEPARTMENT**

2006 EDITION

BRYAN G. SPEEGLE, DIRECTOR

ADOPTED BY RESOLUTION OF BOARD OF SUPERVISORS
RESOLUTION NO. 06-010

STANDARD PLAN REFERENCE

STANDARD PLANS 100 THROUGH 636

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (1997 EDITION)

AMERICAN PUBLIC WORKS ASSOCIATION
SOUTHERN CALIFORNIA CHAPTER

ASSOCIATED GENERAL CONTRACTORS OF CALIFORNIA
SOUTHERN CALIFORNIA DISTRICTS

JOINT COOPERATIVE COMMITTEE

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STANDARD PLANS 1100 THROUGH 1809

STANDARD PLANS FOR ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

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PREFACE

The Standard Plans for Public Works Construction of the American Public Works Association (Southern California Chapter) and Associated General Contractors of California (Southern California District) are hereinafter called APWA.

It is Resources & Development Management Department (RDMD)'s intent to adopt the APWA Standard Plans except where current RDMD Standard Plans, or portions thereof, should be retained on the basis of cost or safety or where portions of RDMD Standard Plans can be used with APWA Standard Plans in a way that meets special RDMD needs and does not adversely affect the benefits of standardization.

There are three categories of Standard Plans:

- 1) RDMD has adopted APWA Standard Plans with or without conditions.
- 2) RDMD has a Standard Plan which addresses a subject but APWA does not.
- 3) APWA has a Standard Plan which addresses a subject but RDMD does not.

This edition of the RDMD Standard Plans includes the first two categories. The third category has not yet been adopted by RDMD. APWA has a number of Standard Plans that have no equivalent RDMD Standard Plans. Although it is intended to consider such Standard Plans for adoption by RDMD, time has precluded a review of such APWA Standard Plans and, therefore, such APWA Standard Plans shall not be used for RDMD projects at this time.

The adopted APWA Standard Plans (with and without conditions) are now included in this edition of RDMD Standard Plans. The APWA Standard Plans are copyrighted and published by Building News, Inc., (10801 National Blvd, Suite 100, Los Angeles, CA 90064; (800)-873-6397). Therefore, RDMD has included the adopted APWA Standard Plans in their entirety without making revisions directly on the APWA Standard Plans. RDMD conditions, if any, are located immediately following the APWA Standard Plans.

Construction plan call-outs should include the appropriate letter prefix: such as "Construct per APWA 312-1" or "Construct per RDMD 1101". Where the call-out omits the letter prefix, the RDMD Standard Plan shall apply unless otherwise directed by the Engineer. Where an APWA Standard Plan is called out which has been approved by RDMD with conditions, the plan call-out as an example would be identified as "RDMD 100-0-OC". In this case, the APWA Standard Plan is given the suffix OC. However, a plan call-out for an APWA Standard Plan shall automatically include the RDMD conditions, if any.

RDMD and APWA Standard Plans may be used by reference, for example, "Construct per RDMD 100-0-OC" or the standard plans may be reproduced on project drawings submitted for RDMD approval. However, where standard plans are reproduced in the drawings, the entire standard plan shall be reproduced. The APWA Standard Plans are copyrighted and may not be reproduced except for use on RDMD plans as noted above.

The users of these Standard Plans should also be aware that the APWA Standard Plans are unsigned. Where Standard Plans (either RDMD or APWA) have been approved by RDMD, RDMD's approval is an approval that the adopted Standard Plan is suitable for general RDMD use. The project proponent, by including the Standard Plans (by reference or reproduction) in project plans, assumes a professional engineer's responsibility for their use.

In addition to the adoption of a portion of APWA Standard Plans, RDMD has also adopted a portion of the Department of Transportation, State of California Standard Plans dated 2002. Due to their availability those Standard Plans are not included in this booklet. The following are the portion of Standard Plans, Department of Transportation, State of California, RDMD has adopted:

1. The portion covering "Signals, Lighting and Electrical Systems."
2. The portion covering "Bridges".
3. Standard Plans A77A through A77N covering "Metal Beam Guard Railing".

The users of the RDMD Standard Plans shall verify Standard Plans for compliance with current ADA requirements.

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Standard Park Details

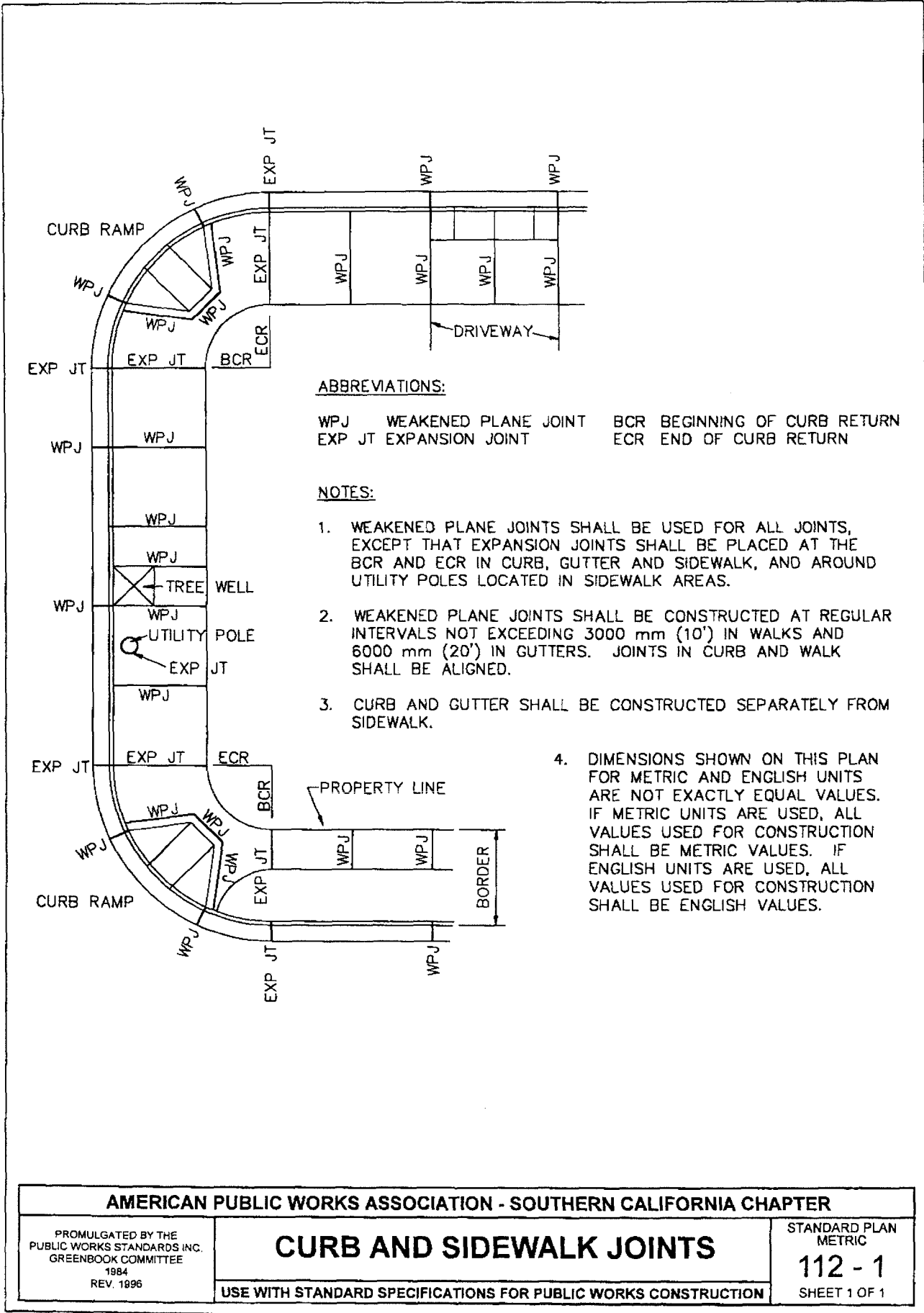
| | |
|------|---|
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SEE RDMD STANDARD PLAN 112-1-OC FOR CONDITIONS

The following Standard Plans for Public Works Construction, 1997 Edition, of the American Public Works Association (Southern California Chapter) and Associated General Contractors of California (Southern California Districts) have been adopted by Orange County Resources & Development Management Department (RDMD) with conditions which shall apply to RDMD use. The conditions are listed below.

| <u>APWA #</u> | <u>RDMD #</u> | <u>Name and Conditions</u> |
|---------------|---------------|---------------------------------|
| 112-1 | 112-1-0C | <u>Curb and Sidewalk Joints</u> |

1. Weakened plane joints (WPJ) shall be constructed in curb and gutters not to exceed 10 feet (3m).
2. WPJ shall be a depth of 1/4" (6mm) to 1/3" (8mm) of the concrete thickness.
3. Expansion joint (Exp JT) shall be full depth.
4. a. Sidewalk:
WPJ shall be quickjoints and finished with a butterfly tool (R=1/8" (3mm))
- b. Formed Curb and Gutter:
Exp JT shall be 1/4" (6mm) thick premolded filler (asphalt saturated fiber) in the top of curb, face of curb and across the gutter, as required by the Engineer.
- c. Extruded Curb and Gutter:
Exp JT shall be cut (hand tooled) in the top of curb, face of curb, and across the gutter or sawcut (within 24 hours).
- d. Gutter Transition:
Exp JT shall 1/4" (6mm) thick premolded filler, as required by the Engineer.
5. No WPJ or monolithic concrete placement shall be allowed between driveways and sidewalk, sidewalk and driveway approach, driveway approach and curb, or curb and sidewalk.
6. Meter boxes and vaults shall have WPJ similar to tree well detail.
7. Premolded Filler (1/4" (6mm) thick asphalt saturated fiber) shall be placed between sidewalk return and curb (see S.P. IIII).

ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

Approved

H. I. Nakasone
H. I. Nakasone, Chief Engineer

Adopted: Res. 91-1481

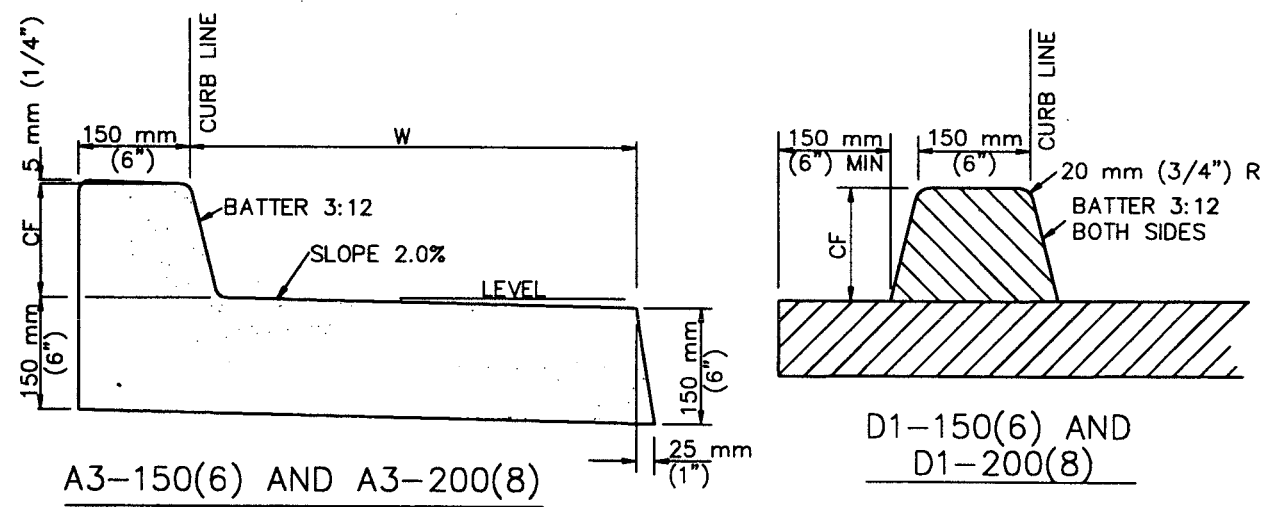
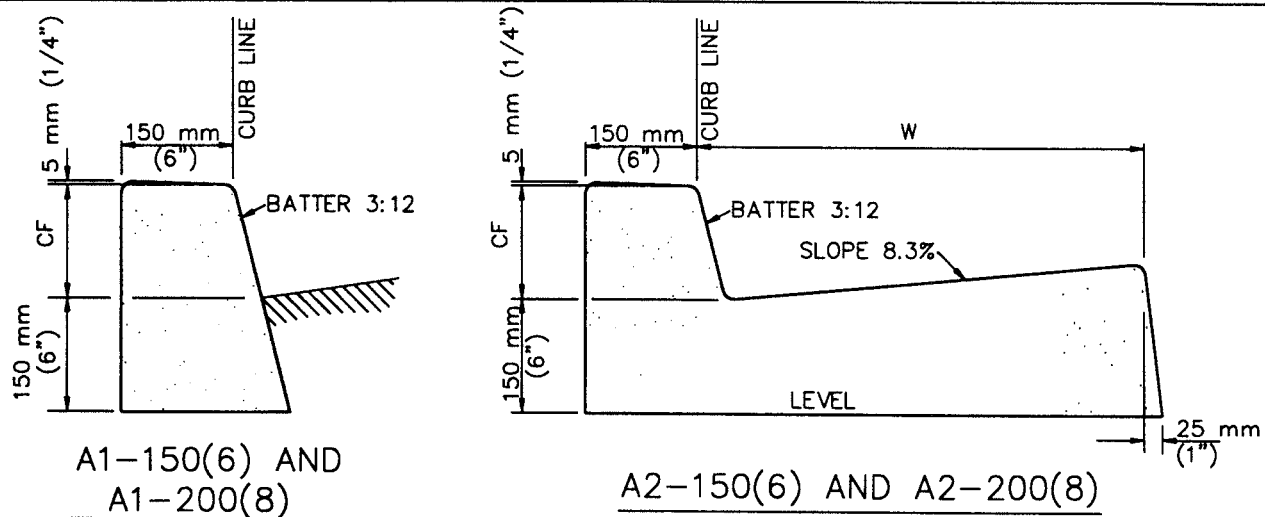
Revised: Res. 96-546; 06-010

STD. PLAN

112-1-0C

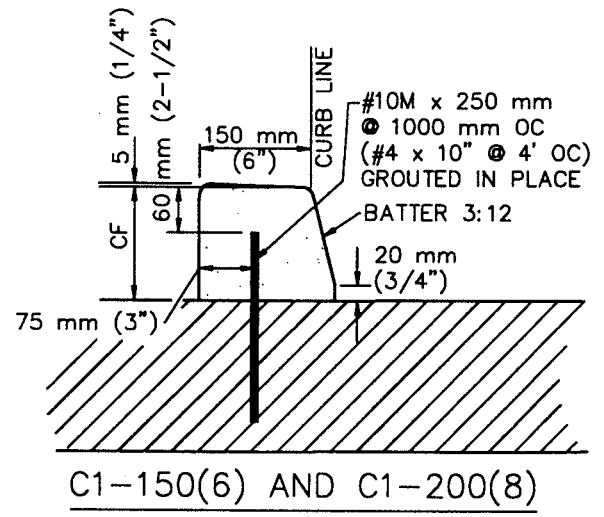
APWA STANDARD PLANS - CURB & SIDEWALK JOINTS

SHT. 1 OF 1



NOTES:

1. THE LAST NUMBER IN THE DESIGNATION IS THE CURB FACE (CF) HEIGHT, mm (INCHES).
2. GUTTER WIDTH, W, IS 600 mm (24") UNLESS OTHERWISE SPECIFIED.
3. TYPES A1, A2, A3 AND C1 SHALL BE CONSTRUCTED FROM PCC.
4. TYPE D1 CURB SHALL BE CONSTRUCTED FROM ASPHALT CONCRETE.
5. TYPE C1 CURB SHALL BE ANCHORED WITH STEEL DOWELS AS SHOWN OR WITH AN EPOXY APPROVED BY THE ENGINEER.
6. ALL EXPOSED CORNERS ON PCC CURBS AND GUTTERS SHALL BE ROUNDED WITH A 15 mm (1/2") RADIUS.
7. DIMENSIONS SHOWN ON THIS PLAN FOR METRIC AND ENGLISH UNITS ARE NOT EXACTLY EQUAL VALUES. USE EITHER METRIC OR ENGLISH VALUES, AS REQUIRED, BUT NOT BOTH, EXCEPT THAT ASTM 615 REINFORCING STEEL MAY BE SUBSTITUTED FOR ASTM 615M STEEL.



| | | |
|---|----------------------------------|---|
| AMERICAN PUBLIC WORKS ASSOCIATION - SOUTHERN CALIFORNIA CHAPTER | | |
| PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1984 REV. 1996 | CURB AND GUTTER — BARRIER | STANDARD PLAN METRIC 120 - 1 SHEET 1 OF 1 |
| USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION | | |

SEE RDMD STANDARD PLAN 120-1-OC FOR CONDITIONS

The following Standard Plans for Public Works Construction, 1997 Edition, of the American Public Works Association (Southern California Chapter) and Associated General Contractors of California (Southern California Districts) have been adopted by the Orange County Resources & Development Management Department (RDMD) with conditions which shall apply to RDMD use. The conditions are listed below.

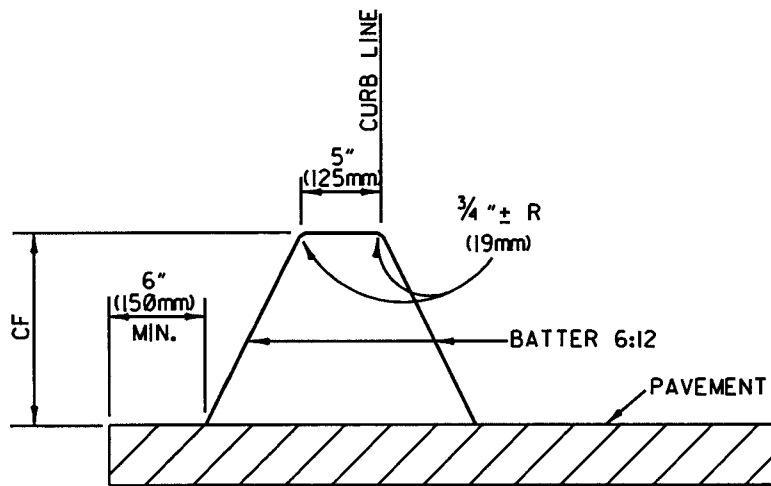
APWA # RDMD # Name and Conditions

120-1 120-1-0C Curb and Gutter-Barrier

1. Type A-2. Place asphalt concrete surfacing $\frac{3}{8}$ " (9mm) above P.C.C. gutter.
2. Type D-1. Tack A.C. pavement with emulsified asphalt at rate of 0.05 gallon/square yard (0.23 liters/square meter) prior to placing A.C. curb. Alternate D1 curb may be constructed using a batter of 6:12 and 5" (125mm) top width as shown below .

3. TABLE OF CURB TYPE AND W FOR USE WITH
RDMD STANDARD ROADWAY TYPICAL SECTION

| | |
|-----------|-------|
| STD 120-1 | "W" |
| A3-200(8) | 1' |
| A2-200(8) | 2' |
| A2-150(6) | 1'-6" |



ALTERNATE D1-150(6) & D1-200(8)

ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

Approved

H. I. Nakasone
H. I. Nakasone, Chief Engineer

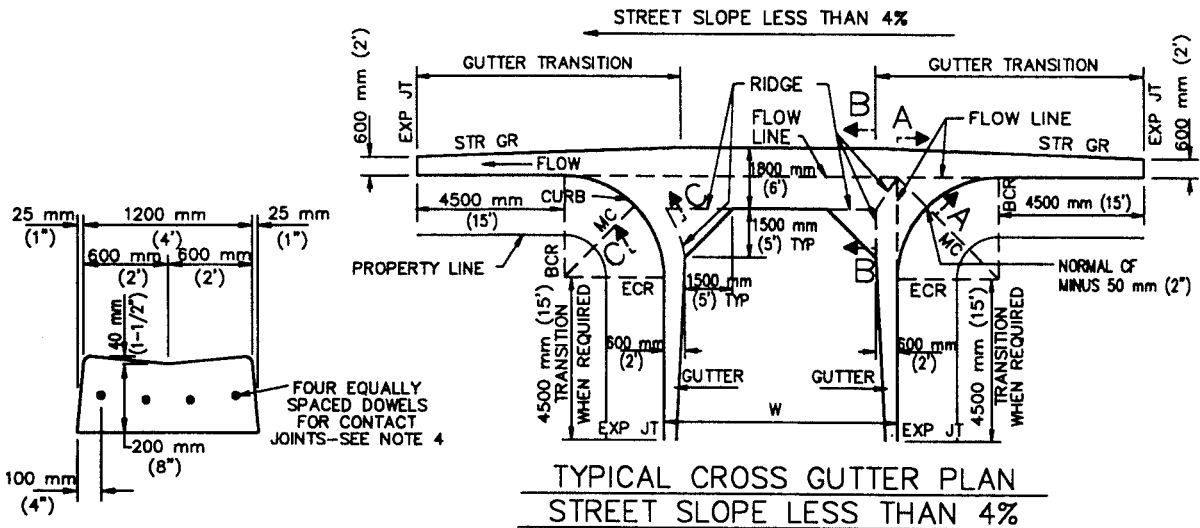
Adopted: Res. 91-1481 Revised: Res. 96-546; 06-010

STD. PLAN

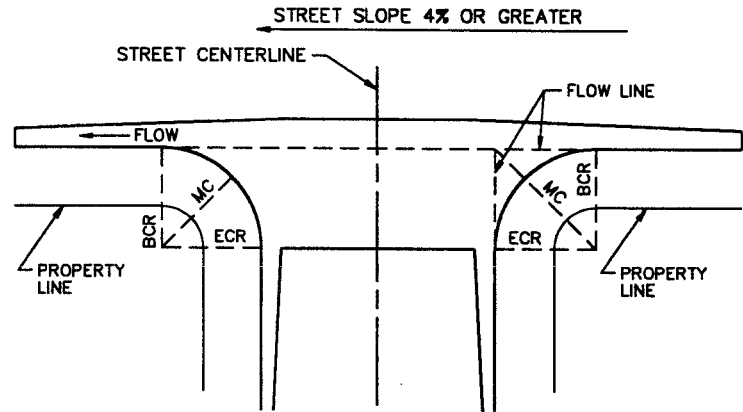
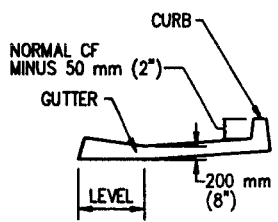
120-1-0C

APWA STANDARD PLAN - CURB AND GUTTER-BARRIER

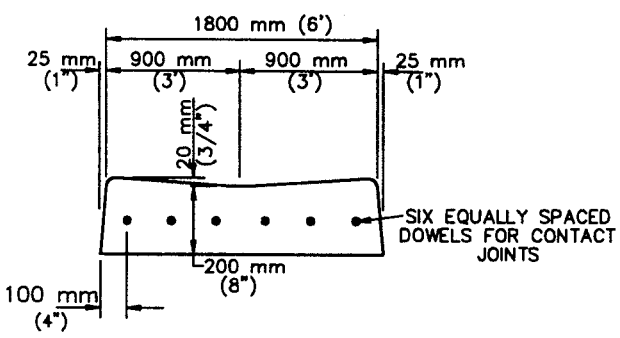
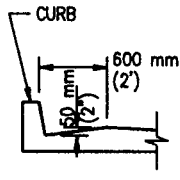
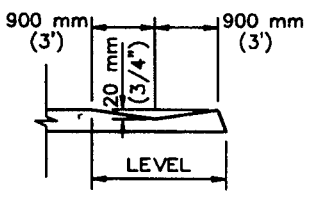
SHT. 1 OF 1



LONGITUDINAL
GUTTER

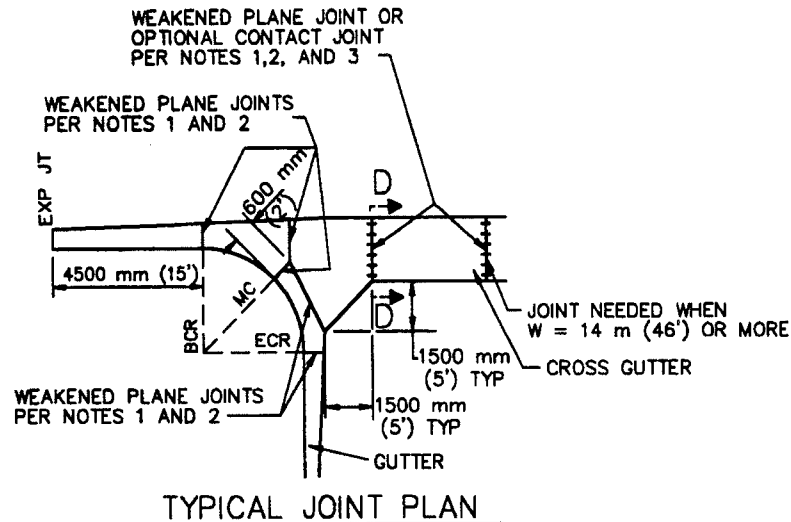


TYPICAL CROSS GUTTER PLAN
STREET SLOPE MORE THAN 4%



| | | |
|---|---|--|
| AMERICAN PUBLIC WORKS ASSOCIATION - SOUTHERN CALIFORNIA CHAPTER | | |
| PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1984 REV. 1996 | <h2 style="margin: 0;">CROSS AND LONGITUDINAL GUTTERS</h2> <p style="margin: 0;">USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION</p> | STANDARD PLAN METRIC <h1 style="margin: 0;">122 - 1</h1> SHEET 1 OF 2 |

SEE RDMD STANDARD PLAN 122-1-OC FOR CONDITIONS



NOTES:

1. WEAKENED PLANE AND/OR CONTACT JOINTS SHALL BE PLACED IN CURB AND GUTTER AT LOCATIONS SHOWN ON THE TYPICAL JOINT PLAN HEREON.
2. WEAKENED PLANE JOINTS SHALL BE PLASTIC CONTROL JOINTS OR 40 mm (1-1/2") DEEP SAW CUTS. CONCRETE SAWING SHALL TAKE PLACE WITHIN 24 HOURS AFTER CONCRETE IS PLACED.
3. DOWELS FOR CONTACT JOINTS SHALL BE #15M BARS 450 mm LONG (#4 BARS 18" LONG).
4. PLACE A WEAKENED PLANE OR CONTACT JOINT WHERE LONGITUDINAL ALLEY GUTTER JOINS CONCRETE ALLEY INTERSECTION.
5. ALL EXPOSED CORNERS ON PCC GUTTERS SHALL BE ROUNDED WITH 15 mm (1/2") RADIUS.
6. CONCRETE SHALL BE INTEGRAL WITH CURB UNLESS OTHERWISE SPECIFIED.
7. DIMENSIONS SHOWN ON THIS PLAN FOR METRIC AND ENGLISH UNITS ARE NOT EXACTLY EQUAL VALUES. IF METRIC UNITS ARE USED, ALL VALUES USED FOR CONSTRUCTION SHALL BE METRIC VALUES. IF ENGLISH UNITS ARE USED, ALL VALUES USED FOR CONSTRUCTION SHALL BE ENGLISH VALUES. HOWEVER, ASTM 615 REINFORCING STEEL MAY BE SUBSTITUTED FOR ASTM 615M STEEL.

AMERICAN PUBLIC WORKS ASSOCIATION - SOUTHERN CALIFORNIA CHAPTER

STANDARD PLAN
METRIC

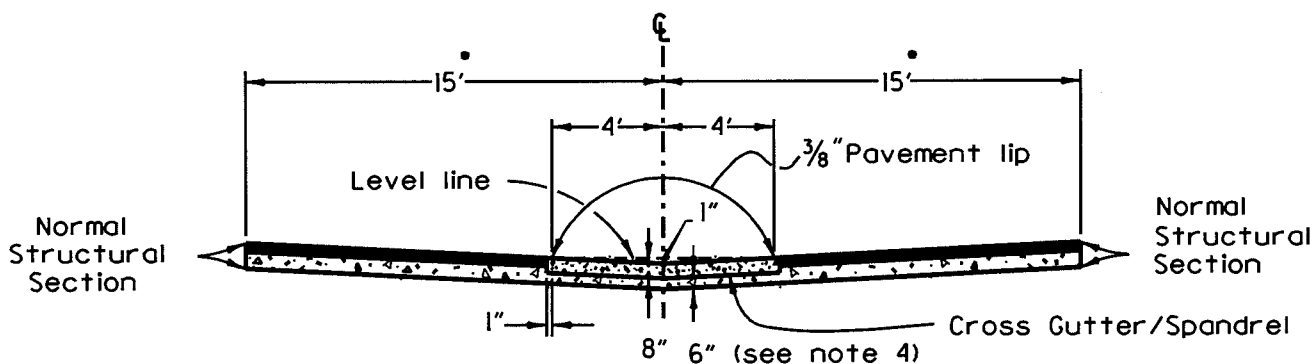
CROSS AND LONGITUDINAL GUTTERS

122 - 1
SHEET 2 OF 2

The following Standard Plans for Public Works Construction, 1997 Edition, of the American Public Works Association (Southern California Chapter) and Associated General Contractors of California (Southern California Districts) have been adopted by the Orange County Resources & Development Management Department (RDMD) with conditions which shall apply to RDMD use. The conditions are listed below.

| <u>APWA *</u> | <u>RDMD *</u> | <u>Name and Conditions</u> |
|---------------|---------------|---------------------------------------|
| 122-1 | 122-1-0C | <u>Cross and Longitudinal Gutters</u> |

1. Gutter width shall be 8 feet (see Section D-D and the Typical Section below).
2. Smooth trowel 8-inch wide flowline in Cross Gutter and Aprons where grades are less than 0.5%.
3. Place 6-inch thick A.B. under Cross gutter and spandrels, per Typical Section below.
4. When full depth A.C. is used, A.B. as shown in the Typical Section below shall not be placed and the PCC Cross Gutter/Spandrel section shall be increased to 9".
5. Delete 2-foot dimension at gutter transition and add "join curb & gutter."
6. Delete the Detail entitled "Typical Cross Gutter Plan Street Slope More Than 4%" as shown on 122-1.
7. Revise the Detail name "Typical Cross Gutter Plan Street Slope Less Than 4%" to read "Typical Cross Gutter Plan" and delete all references to "Street Slope Less Than 4%" thereon.
8. Revise note 3 of APWA Standard Plan 122-1 to read "Dowels shall be required at cross gutter and where longitudinal alley gutter joins concrete alley intersection. Dowels for weakened plane or contact joints shall be #4 bars 18" long (#15M bars 450mm long)."
9. Delete Note 4 of APWA Standard Plan 122-1.



TYPICAL SECTION

- Subgrade transition

ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

Approved

H. I. Nakasone
H. I. Nakasone, Chief Engineer

Adopted: Res. 91-1481

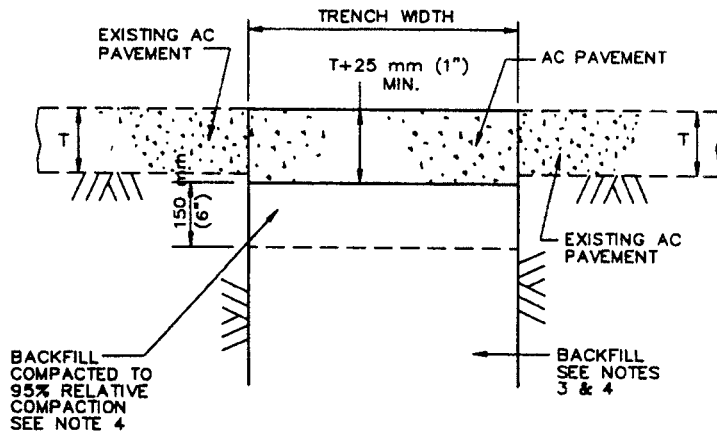
Revised: Res. 96-546; 97-117; 06-010

STD. PLAN

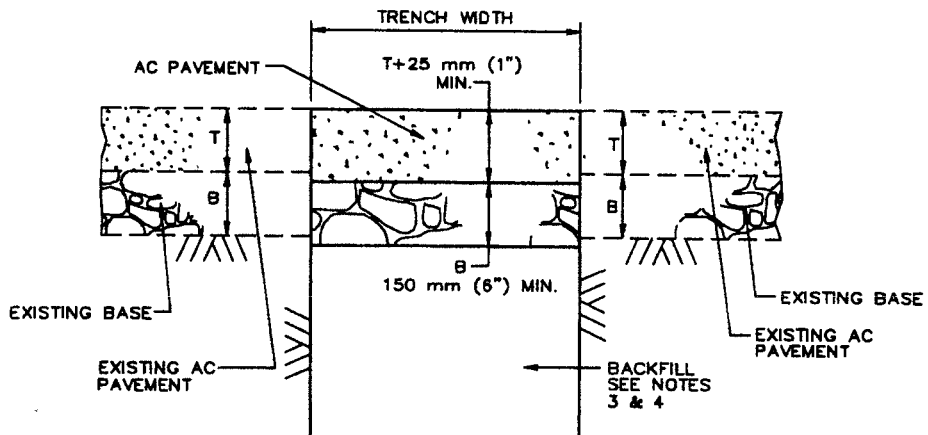
122-1-0C

APWA STANDARD PLAN - CROSS AND LONGITUDINAL GUTTERS

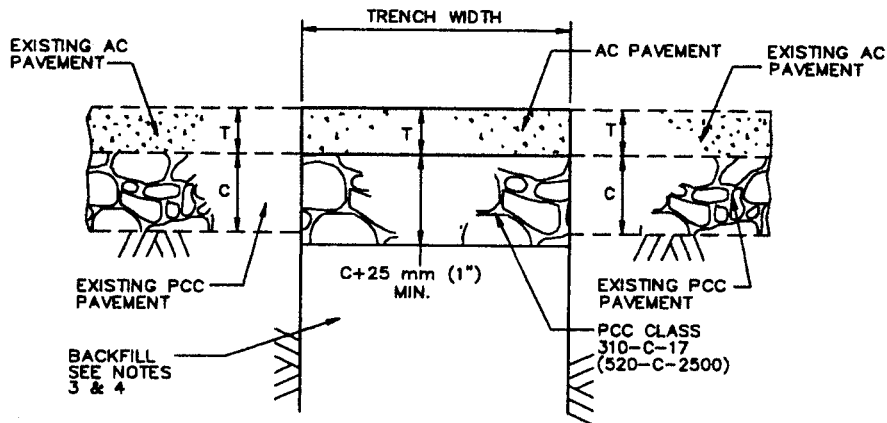
SHT. 1 OF 1



CASE I: (WITHOUT BASE)



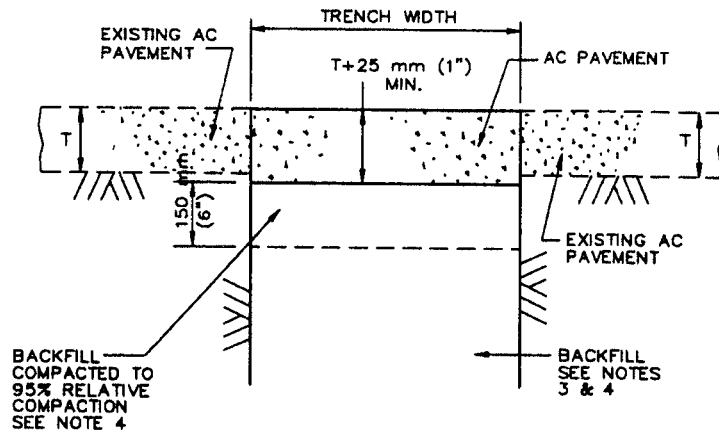
CASE II: (WITH BASE)



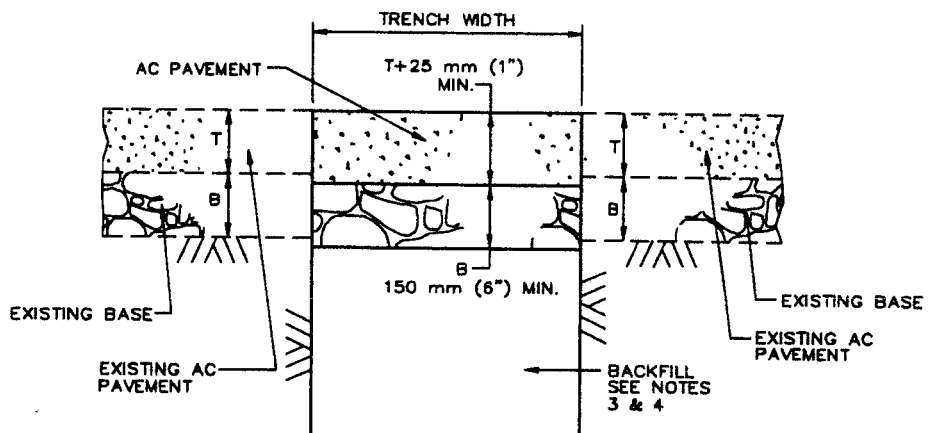
CASE III: (WITH AC PVMT ON PCC PVMT)

| | | |
|---|---|--|
| AMERICAN PUBLIC WORKS ASSOCIATION - SOUTHERN CALIFORNIA CHAPTER | | |
| PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1993 REV. 1996 | <h2 style="margin: 0;">ASPHALT CONCRETE PAVEMENT REPLACEMENT</h2> | STANDARD PLAN METRIC <h1 style="margin: 0;">133 - 1</h1> SHEET 1 OF 2 |
| USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION | | |

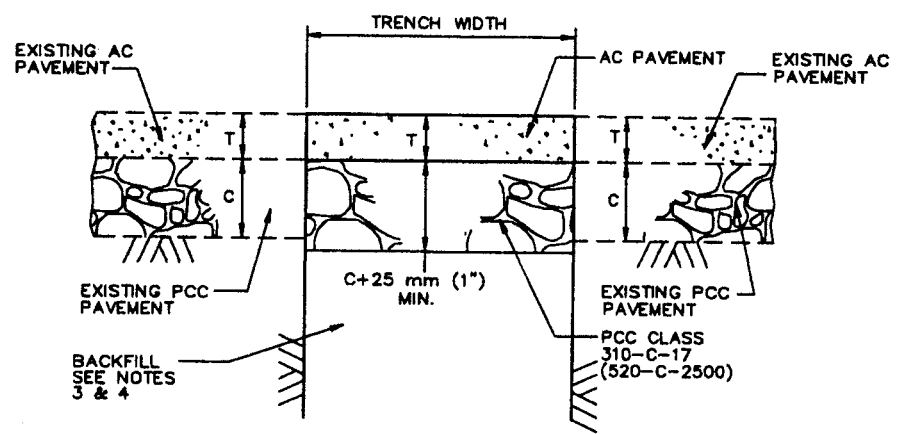
SEE RDMD STANDARD PLAN 133-1-OC FOR CONDITIONS



CASE I: (WITHOUT BASE)



CASE II: (WITH BASE)



CASE III: (WITH AC PVMT ON PCC PVMT)

| | | |
|---|---|--|
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| SHEET 1 OF 2 | | |

SEE RDMD STANDARD PLAN 133-1-OC FOR CONDITIONS

