



# CITY OF GARDEN GROVE PUBLIC WORKS STANDARD PLANS

B- 99 TITLE SHEET FORMAT

## SERIES B-100 STREET AND HIGHWAY

- B-101 MAJOR HIGHWAY – TYPICAL SECTION
- B-102 PRIMARY HIGHWAY – TYPICAL SECTION
- B-103 SECONDARY HIGHWAY – TYPICAL SECTION
- B-104 LOCAL STREET – TYPICAL SECTION
- B-105 RESIDENTIAL SIDEWALK
- B-106 COMMERCIAL AND ARTERIAL SIDEWALK
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- B-109 STANDARD KNUCKLE
- B-110 CONCENTRIC CUL-DE-SAC
- B-111 OFFSET CUL-DE-SAC
- B-112 CONCRETE CURB ONLY TYPE "A" AND TYPE "B".
- B-113 CONCRETE CURB AND GUTTER TYPE "C" AND TYPE "D".
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- B-116 ROLLED CURB AND GUTTER
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- B-128 TYPICAL ARTERIAL/ARTERIAL INTERSECTION LAYOUT

**A** BENCH MARK : \_\_\_\_\_ ELEV. : \_\_\_\_\_

**NOTES:**

1. STANDARD SHEET SIZE :  
OUTSIDE - 24" x 36", INSIDE - 23" x34".
2. SHEET 2 AND ALL SUCCEEDING SHEETS  
RECEIVE BLOCK H AND BORDER ONLY.
3. AREA ABOVE TITLE BLOCK MAY BE USED  
FOR CONSULTANTS NAME AND OTHER  
NECESSARY INFORMATION.

**B** DESIGNED BY \_\_\_\_\_ DRAWN BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_

PLANS PREPARED UNDER SUPERVISION OF \_\_\_\_\_

DATE \_\_\_\_\_ R.C.E. No. \_\_\_\_\_

**C**

REFERENCE PLANS FOR  
THESE IMPROVEMENTS

**D**

DATE	BY	DESCRIPTION	APP'D
REVISIONS			

**E** WATER SERVICES MGR. \_\_\_\_\_

STREET DIVISION MGR. \_\_\_\_\_

CITY TRAFFIC ENGR. \_\_\_\_\_

REAL PROPERTY AGENT \_\_\_\_\_

**F** APPROVED BY : \_\_\_\_\_ CITY ENGINEER R.C.E. No. 42977 \_\_\_\_\_ DIRECTOR OF PUBLIC WORKS

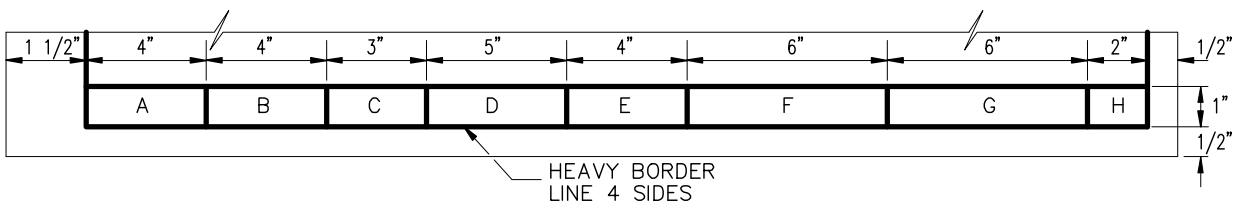
THIS PLAN IS SIGNED BY THE PUBLIC WORKS DEPARTMENT FOR CONCEPT AND ADHERENCE TO CITY STANDARDS AND REQUIREMENTS ONLY. THE PUBLIC WORKS DEPARTMENT IS NOT RESPONSIBLE FOR DESIGN, DESIGN ASSUMPTIONS OR ACCURACY.

**G** (TYPES OF IMPROVEMENT IN THIS SPACE ...)

(JOB TITLE & SHEET DESCRIPTION IN THIS SPACE ...)

**H** DRAWING NUMBER

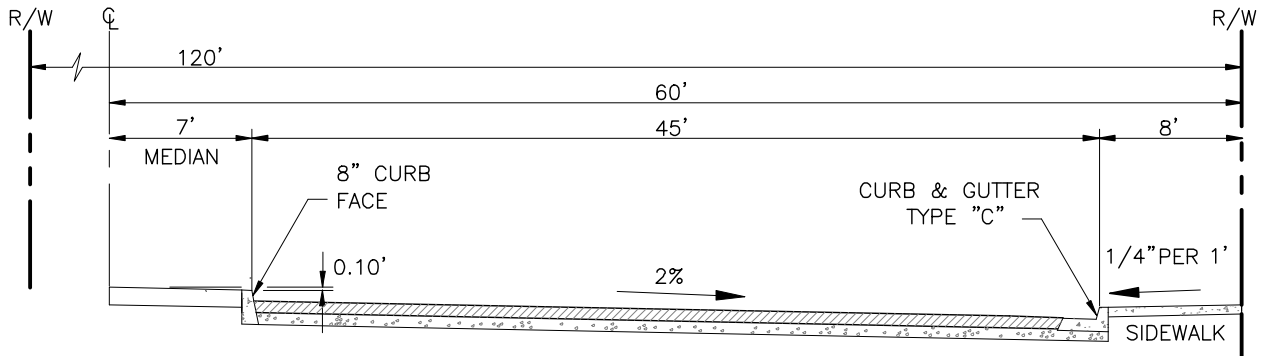
SHEET \_\_\_\_\_ OF \_\_\_\_\_



**TITLE SHEET FORMAT**

Approved _____	Date _____	REVISIONS	BY	DATE	STD. PLAN NUMBER
_____	_____	_____	_____	_____	<b>B-99</b>
City Engineer	R.C.E. 50353	Exp.06-30-09			

SECTIONS SYMMETRICAL  
ABOUT  $\zeta$



## SECTION

### NOTES:

1. THICKNESS OF IMPROVEMENT TO BE DETERMINED BY SOIL TEST, WITH MINIMUM OF 5" A.C. OVER 10" A.B.
2. PAINT BINDER SHALL BE SS-1H AND APPLIED AS DIRECTED BY CITY ENGINEER.
3. SEE STANDARD PLAN B-106 FOR DETAILS.
4. CONST. MIN. 6" AGGREGATE BASE UNDER CURB & GUTTER.
5. MINIMUM COMPACTION FOR A.C., A.B. AND UPPER 6" OF NATIVE SOIL IS 95% R.C.



City of  
Garden Grove  
California

## MAJOR HIGHWAY TYPICAL SECTION

Approved \_\_\_\_\_

Date \_\_\_\_\_

REVISIONS

BY

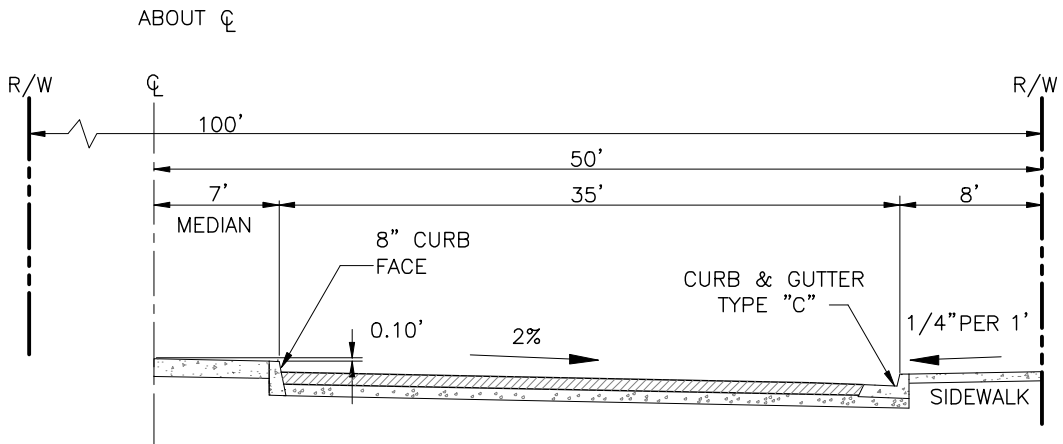
DATE

STD. PLAN NUMBER

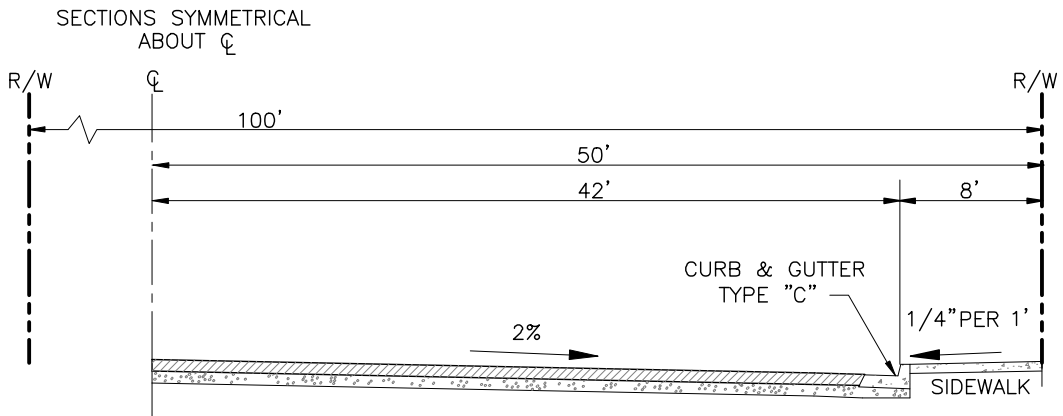
City Engineer

R.C.E. 50353 Exp.06-30-09

B-101



**SECTIONS SYMMETRICAL**



**ALTERNATE SECTION**

**NOTES:**

1. CONSTRUCT MIN. 6" AGGREGATE BASE UNDER CURB & GUTTER.
2. THICKNESS OF IMPROVEMENT TO BE DETERMINED BY SOILS TEST, WITH MINIMUM OF 5" A.C. OVER 10" A.B.
3. PAINT BINDER SHALL BE SS-1H AND APPLIED AS DIRECTED BY THE CITY ENGINEER.
4. MINIMUM COMPACTION FOR A.C., A.B. AND UPPER 6" OF NATIVE SOIL IS 95% R.C.



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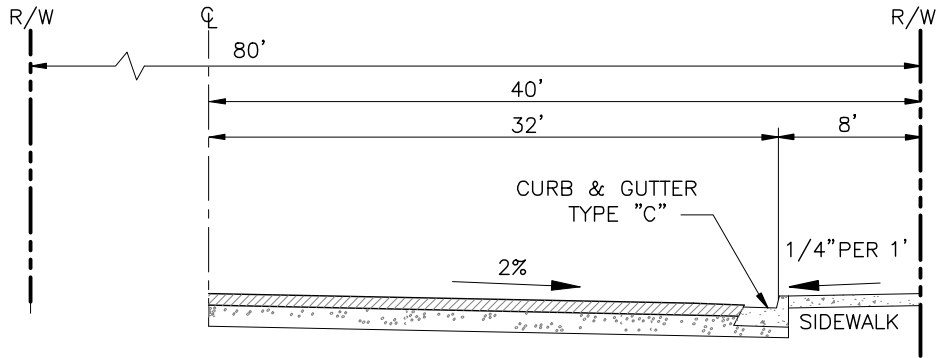
**PRIMARY HIGHWAY  
TYPICAL SECTION**

Approved \_\_\_\_\_ Date \_\_\_\_\_  
City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER  
**B-102**

SECTIONS SYMMETRICAL  
ABOUT  $\zeta$



## SECTION

### NOTES:

1. CONSTRUCT MIN. 6" AGGREGATE BASE UNDER CURB & GUTTER.
2. THICKNESS OF IMPROVEMENT TO BE DETERMINED BY SOILS TEST, WITH MINIMUM OF 4" A.C. OVER 8" A.B.
3. PAINT BINDER SHALL BE SS-1H AND APPLIED AS DIRECTED BY CITY ENGINEER.
4. MINIMUM COMPACTION FOR A.C., A.B. AND UPPER 6" OF NATIVE SOIL IS 95% R.C.

\* SIDEWALKS MAY NOT BE REQUIRED IN M-P ZONE.  
SEE STANDARD PLAN B-106 FOR SIDEWALK DETAILS.



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## SECONDARY HIGHWAY TYPICAL SECTION

Approved \_\_\_\_\_

Date \_\_\_\_\_

REVISIONS

BY

DATE

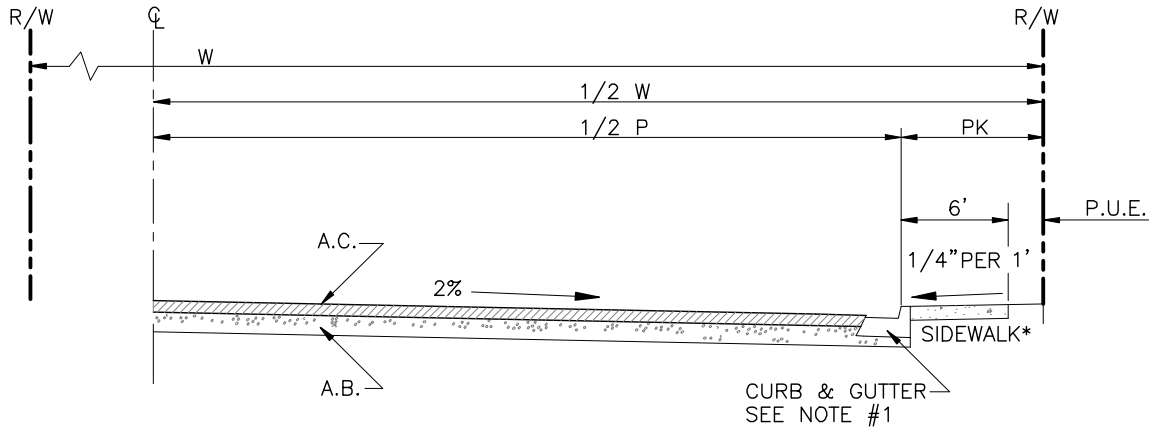
STD. PLAN NUMBER

City Engineer

R.C.E. 50353 Exp.06-30-09

**B-103**

SECTIONS SYMMETRICAL ABOUT  $\hat{C}$



**SECTION**

W	P	PK
50'	36'	7'
56'	36'	10'
60'	36'	12'

**LEGEND**

W= WIDTH OF R\W IN FEET  
P= WIDTH OF STREET IN FEET  
PK=WIDTH OF PARKWAY AND/OR SIDEWALK

**NOTES:**

1. CURB AND GUTTER SHALL BE TYPE "D", OR AS REQUIRED BY CITY ENGINEER.
2. THICKNESS OF IMPROVEMENTS TO BE DETERMINED BY SOIL TEST, WITH MINIMUM OF 3" A.C. OVER 6" A.B. (5" A.C. OVER 10" A.B. IN INDUSTRIAL AREAS.)
3. PAINT BINDER SHALL BE SS-1H AND APPLIED AS DIRECTED BY THE CITY ENGINEER.
4. CONSTRUCT 6" AGGREGATE BASE UNDER CURB & GUTTER.
5. MINIMUM COMPACTION FOR A.C., A.B. AND UPPER 6" OF NATIVE SOIL IS 95% R.C.

\* SEE STD PLAN B-105 FOR RESIDENTIAL ZONES.  
SEE STD PLAN B-106 FOR COMMERCIAL & OFFICE PROFESSIONAL ZONES.  
SIDEWALKS MAY NOT BE REQUIRED IN M-P ZONE.



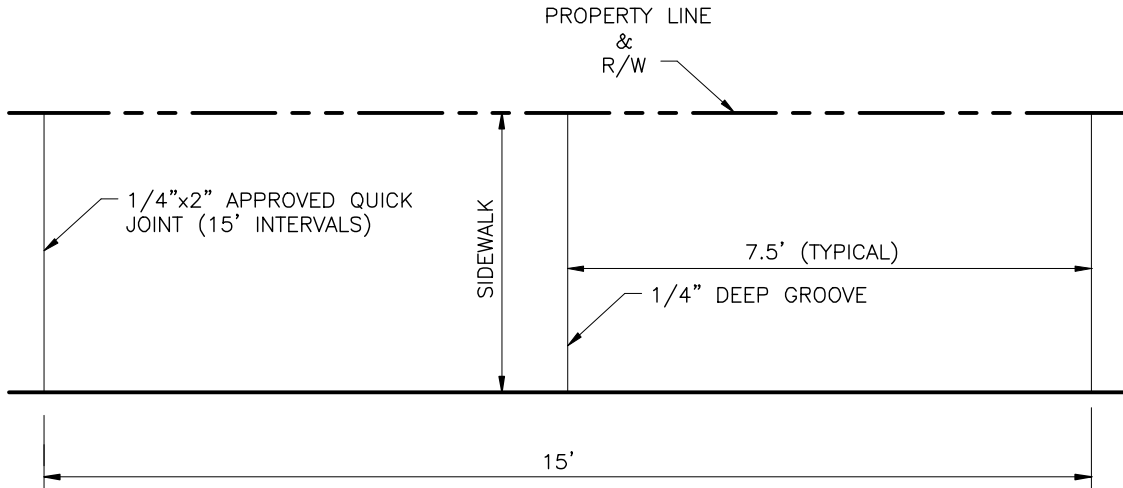
City of  
**Garden Grove**  
California

**LOCAL STREET  
TYPICAL SECTION**

Approved \_\_\_\_\_ Date \_\_\_\_\_  
City Engineer R.C.E. 50353 Exp.06-30-09

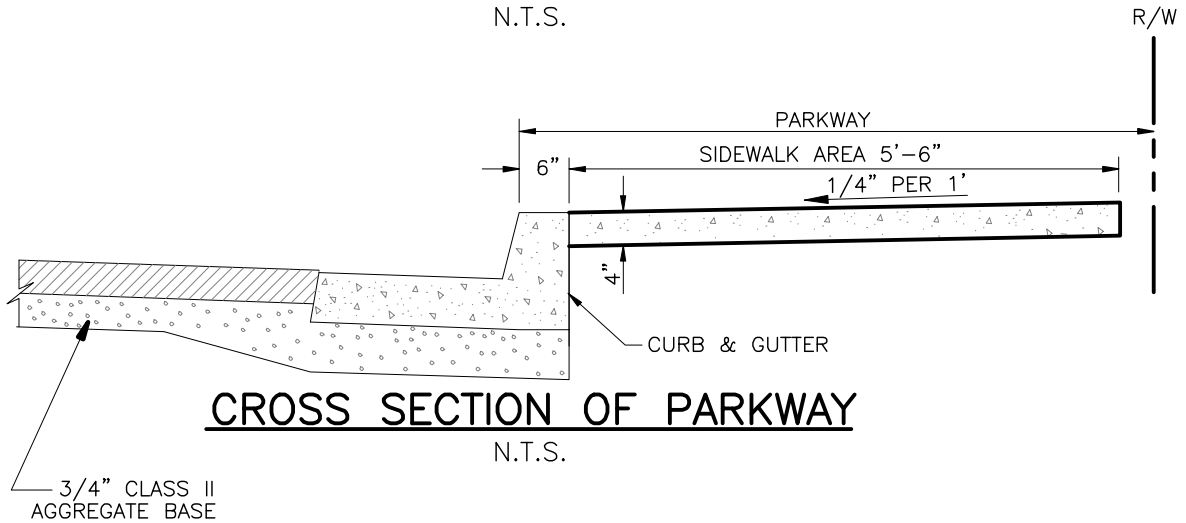
REVISIONS	BY	DATE

STD. PLAN NUMBER  
**B-104**



**PLAN VIEW OF SIDEWALK**

N.T.S.



**CROSS SECTION OF PARKWAY**

N.T.S.

**NOTES:**

1. SIDEWALK SHALL BE CONSTRUCTED NEXT TO CURB.
2. 3/4"x4" FELT EXPANSION JOINTS SHALL BE PLACED AT THE ENDS OF ALL CURB RETURNS AND AT TOP OF DRIVEWAYS. 1/4"x2" WEAKENED PLANE JOINTS SHALL BE PLACED AT 15' INTERVALS. SCORING LINES SHALL BE PLACED AT 7-1/2' INTERVALS. EXPANSION JOINTS TO BE INSTALLED AT 45' MAXIMUM SPACING.
3. 1/4"x2" APPROVED QUICK JOINTS FOR SIDEWALK SHALL BE PLACED TO COINCIDE WITH JOINTS OF THE CURB.
4. ALL CONCRETE SHALL BE 5 1/2 SACK WITH 3/4" AGGREGATE AND 4" THICK.
5. 90% RELATIVE COMPACTION REQUIRED UNDER SIDEWALK.



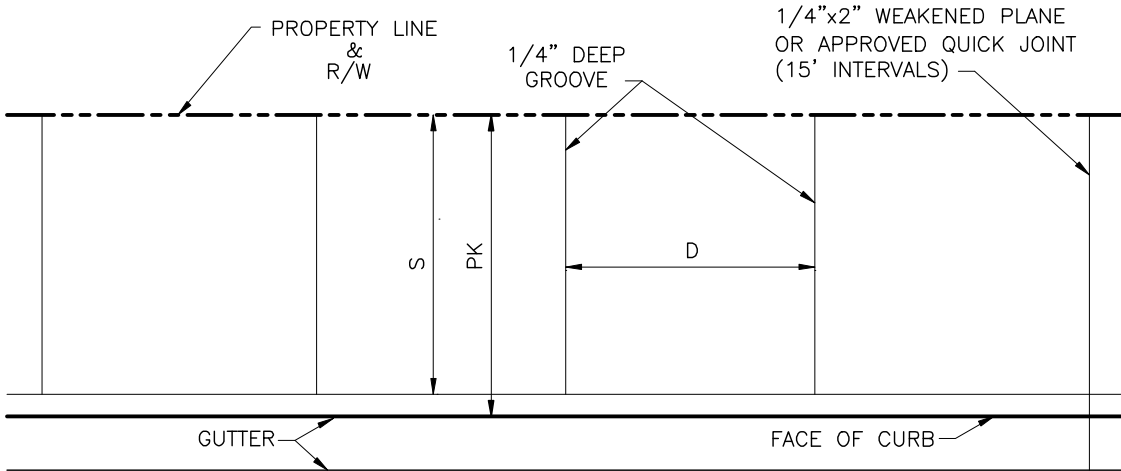
City of  
Garden Grove  
California

**RESIDENTIAL SIDEWALK**

Approved \_\_\_\_\_ Date \_\_\_\_\_  
City Engineer R.C.E. 50353 Exp.06-30-09

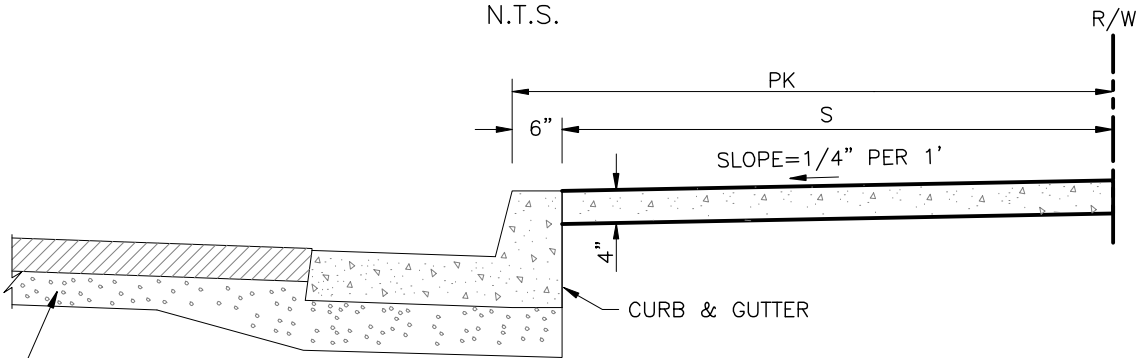
REVISIONS	BY	DATE

STD. PLAN NUMBER  
**B-105**



### PLAN VIEW OF PARKWAY

N.T.S.



### CROSS SECTION OF PARKWAY

N.T.S.

PK	S	D
7'	6.5'	7.5'

PK	S	D
8'	7.5'	7.5'
10'	9.5'	7.5'
12'	11.5'	7.5'
13'	12.5'	7.5'

PK = WIDTH OF PARKWAY  
 S = WIDTH OF SIDEWALK  
 D = DISTANCE BETWEEN SCORE LINES

### NOTES:

- 3/4"x4" FELT EXPANSION JOINTS SHALL BE PLACED AT THE ENDS OF ALL CURB RETURNS AND AT TOP OF "X" AT DRIVEWAYS. 1/4"x2" WEAKENED PLANE JOINTS SHALL BE PLACED AT 15' INTERVALS. SCORING LINES SHALL BE PLACED AT 7-1/2' INTERVALS. EXPANSION JOINTS TO BE INSTALLED AT 45' MAX. SPACING.
- 1/4"x2" APPROVED QUICK JOINTS FOR SIDEWALK SHALL BE PLACED TO COINCIDE WITH JOINTS OF THE CURB.
- REFER TO STD. PLAN B-305 FOR TRAFFIC CONTROL SIGN INSTALLATION.
- ALL CONCRETE SHALL BE 5 1/2 SACK WITH 3/4" AGGREGATE AND 4" THICK.
- 90% RELATIVE COMPACTION REQUIRED UNDER SIDEWALK.
- S MAY BE REDUCED TO 5' WITH ADEQUATE PROVISION FOR MAINTENANCE OF REMAINING PARKING.



City of  
Garden Grove  
California

## COMMERCIAL AND ARTERIAL SIDEWALK

Approved \_\_\_\_\_

Date \_\_\_\_\_

REVISIONS

BY

DATE

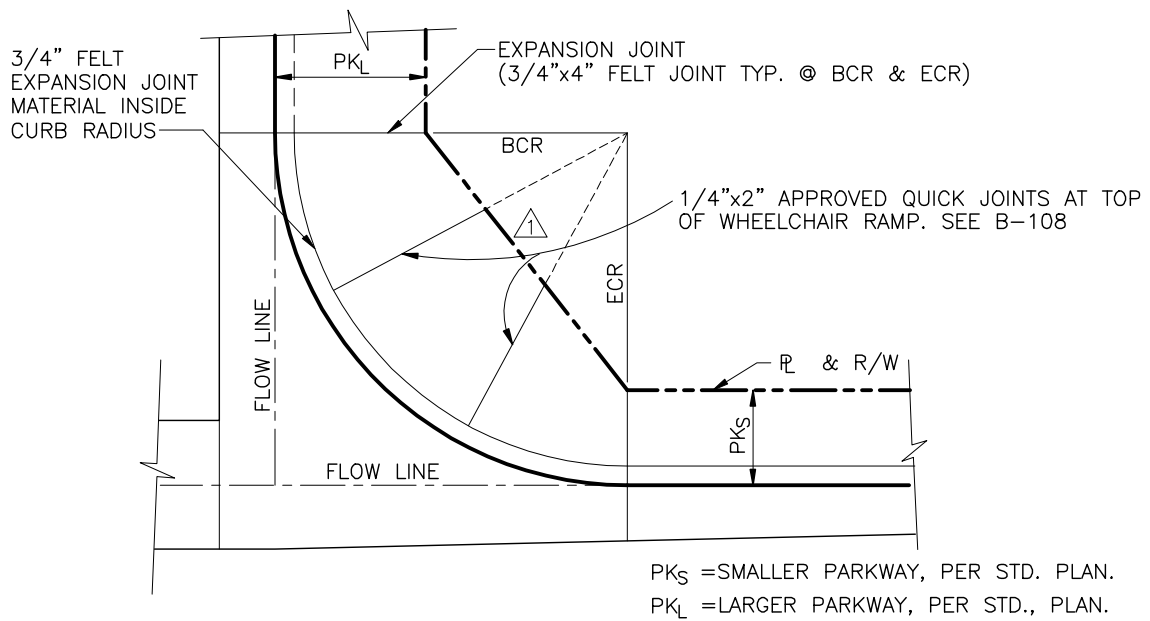
STD. PLAN NUMBER

B-106

City Engineer

R.C.E. 50353 Exp.06-30-09





**COMMERCIAL LANDING**  
N.T.S.

CORNER DATA	
CURB RADIUS	APPLICATION-INTERSECTION OF:
25'	1. TWO LOCAL STREETS 2. LOCAL STREET & ARTERIAL HWY.
35'	TWO ARTERIAL HIGHWAYS

**NOTES:**

1. ALL CONCRETE SHALL BE 5 1/2 SACK WITH 3/4" AGGREGATE AND 4" THICK.
2. SEE STD. PLAN B-108 FOR WHEELCHAIR RAMPS.



**SIDEWALK LANDINGS**

Approved _____	Date _____	REVISIONS	BY	DATE	STD. PLAN NUMBER
City Engineer	R.C.E. 50353				<b>B-107</b>
	Exp.06-30-09				

REFER TO LATEST  
 CALTRANS STANDARDS  
 FOR APPROPRIATE  
 WHEELCHAIR RAMP DESIGN

YOU MAY VISIT : [www.dot.ca.gov](http://www.dot.ca.gov) FOR INFORMATION



City of  
 Garden Grove  
 California

**CURB RETURN  
 WHEELCHAIR RAMP**

Approved \_\_\_\_\_ Date \_\_\_\_\_

City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER

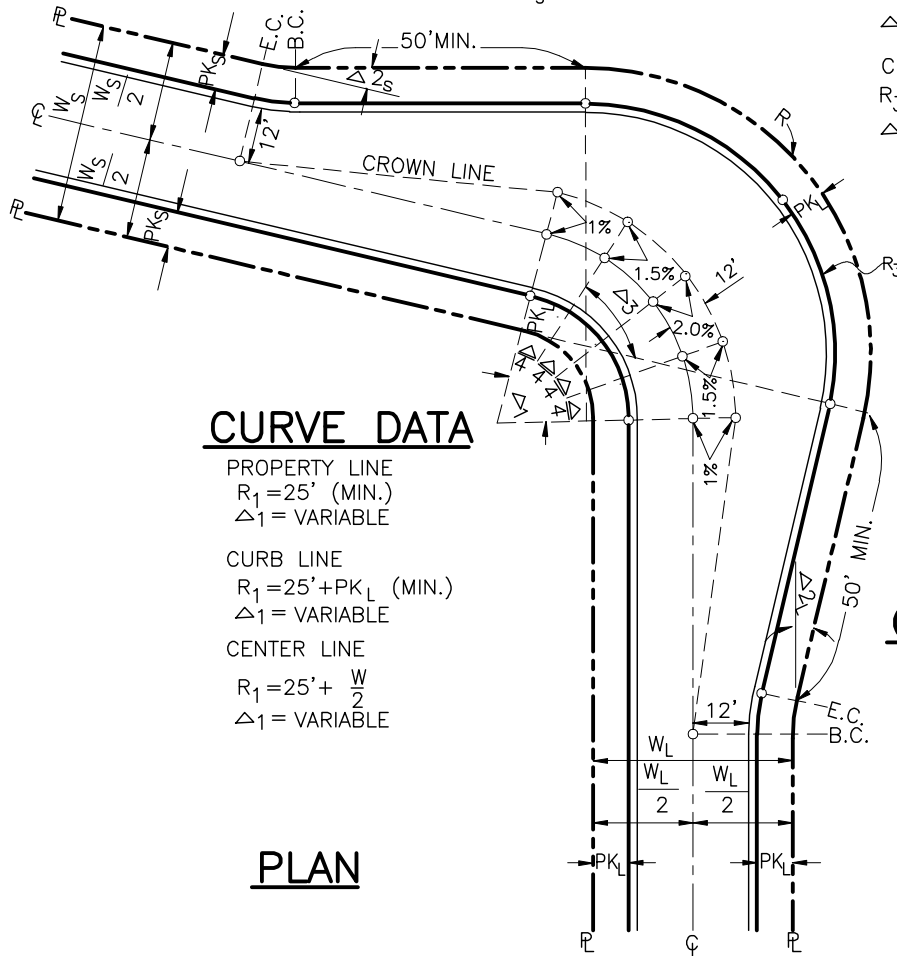
**B-108**

### CURVE DATA

CURB RADIUS = 50'  
 $R_L$  RADIUS = 50' - PK<sub>S</sub>

### CURVE DATA

PROPERTY LINE  
 $R = W_L + 10'$   
 $\Delta_3 = \Delta_1 + \Delta_{2S} + \Delta_{2L}$   
 CURB LINE  
 $R_3 = W_L + 10' - PK_L$   
 $\Delta_3 = \Delta_1 + \Delta_{2S} + \Delta_{2L}$



### CURVE DATA

PROPERTY LINE  
 $R_1 = 25'$  (MIN.)  
 $\Delta_1 = \text{VARIABLE}$   
 CURB LINE  
 $R_1 = 25' + PK_L$  (MIN.)  
 $\Delta_1 = \text{VARIABLE}$   
 CENTER LINE  
 $R_1 = 25' + \frac{W}{2}$   
 $\Delta_1 = \text{VARIABLE}$

### CURVE DATA

CURB RADIUS = 50'  
 $R_L$  RADIUS = 50' - PK<sub>L</sub>

### PLAN

### NOTES:

1. USE NORMAL SECTION FROM INNER CURB TO CENTER LINE.
2. FROM CROWN LINE TO OUTER CURB THE MAXIMUM SLOPE IS 1" PER FOOT.
3. SUBSCRIPTS "S" AND "L" DENOTE SMALLER AND LARGER STREETS RESPECTIVELY
4. SUPERELEVATION PERCENTAGES SHOWN ARE STRAIGHT FROM CENTER LINE TO CROWN LINE.
5. ELEVATIONS ARE REQUIRED WHERE CIRCLED<sup>o</sup>.



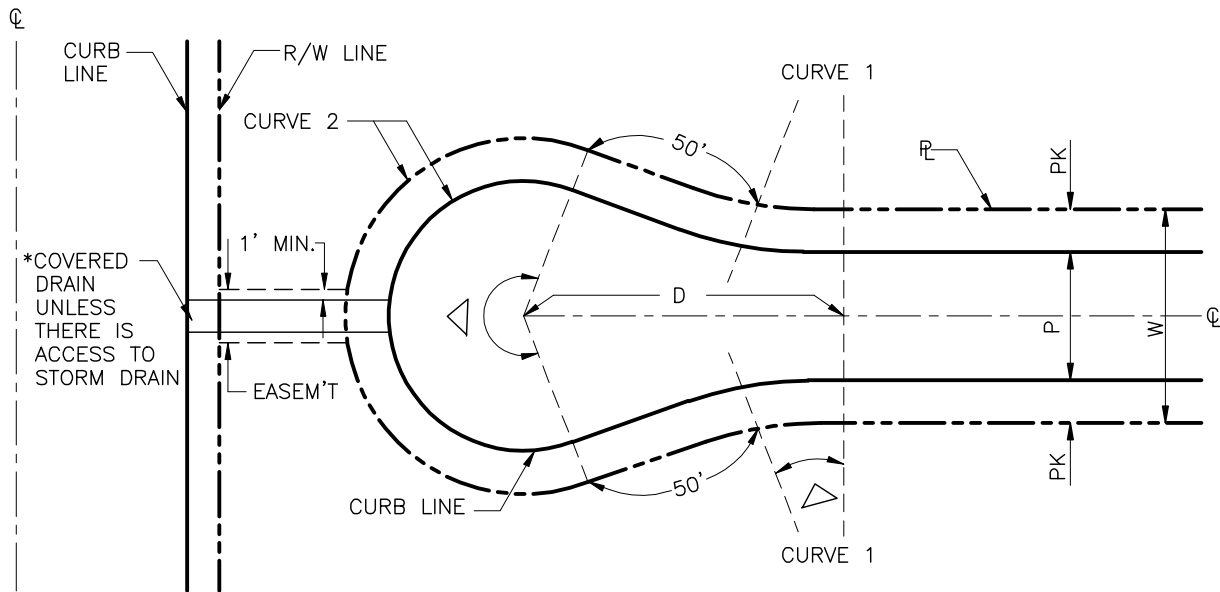
City of  
 Garden Grove  
 California

### STANDARD KNUCKLE

Approved \_\_\_\_\_ Date \_\_\_\_\_  
 City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER  
**B-109**



**PLAN**

**CURVE 1**

W	P	PK	D	△	CURB			PROP. LINE		
					R	L	T	R	L	T
54'	40'	7'	84.52'	15' 14' 33"	100'	26.60'	13.38'	93'	24.74'	12.44'
60'	40'	10'	87.75'	16' 31' 20"	100'	28.84'	14.52'	90'	25.95'	13.07'

**CURVE 2**

W	P	PK	D	△	CURB		PROP. LINE	
					R	L	R	L
54'	40'	7'	84.52'	210' 29' 06"	38'	139.60'	45'	165.31'
60'	40'	10'	87.75'	213' 02' 40"	40'	148.73'	50'	185.92'

**NOTE:**

\* IN THE CASE WHERE THE CUL-DE SAC BACKS INTO AN ARTERIAL HIGHWAY AND DRAINS TOWARDS IT AND NO STORM DRAIN IS AVAILABLE, A COVERED DRAIN SHALL BE PROVIDED THRU A DRAINAGE EASEMENT A MINIMUM OF 2' WIDER THAN THE DRAIN AS SHOWN ABOVE. PLANS SHALL INCLUDE ALL INFORMATION PERTINENT TO THE DRAIN, EXACT LOCATION, SIZE, REINFORCEMENT, EASEMENT, FLOW LINES, CURB-FACE OPENINGS, LOCAL DEPRESSIONS, CAPACITIES, ETC. AND ADDRESS PROVISIONS FOR SECONDARY OVERFLOW.



City of  
Garden Grove  
California

**CONCENTRIC  
CUL-DE-SAC**

Approved \_\_\_\_\_ Date \_\_\_\_\_

City Engineer R.C.E. 50353 Exp.06-30-09

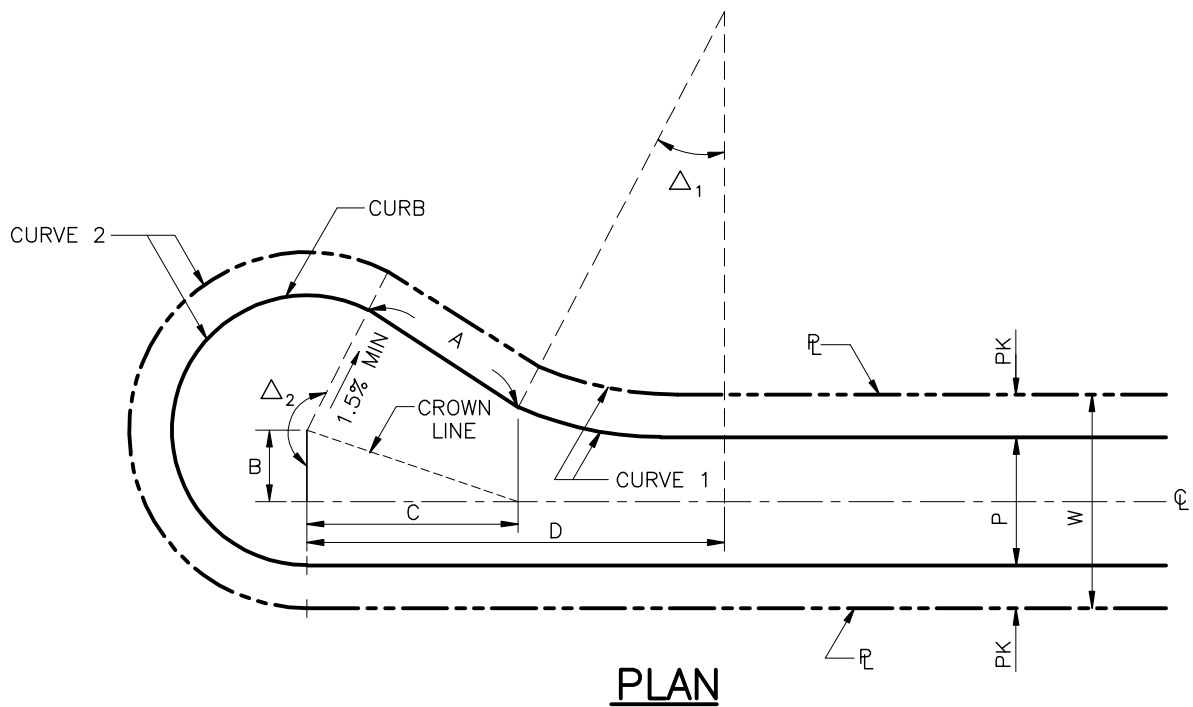
REVISIONS

BY

DATE

STD. PLAN NUMBER

**B-110**



### CURVE 1

W	P	PK	$\Delta_1$	CURB			PROP.LINE		
				R	L	T	R	L	T
54'	40'	7'	26' 03' 45"	100'	45.49'	23.14'	93'	42.30'	21.52'
60'	40'	10'	28' 04' 22"	100'	49.00'	25.00'	90'	44.10'	22.50'

### CURVE 2

W	P	PK	A	B	C	D	$\Delta_2$	CURB		PROP.LINE	
								R	L	R	L
54'	40'	7'	50'	18'	61.61'	105.55'	206' 03' 45"	38'	136.67'	45'	161.84'
60'	40'	10'	50'	20'	62.94'	110.00'	208' 04' 22"	40'	145.26'	50'	181.58'



City of  
Garden Grove  
California

## OFFSET CAL-DE-SAC

Approved \_\_\_\_\_

Date \_\_\_\_\_

REVISIONS

BY

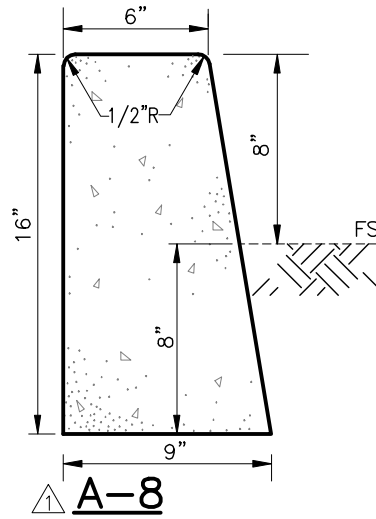
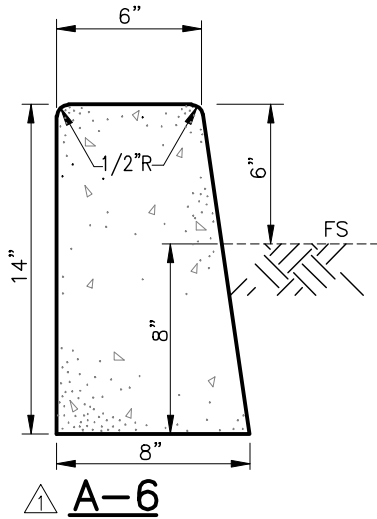
DATE

STD. PLAN NUMBER

City Engineer

R.C.E. 50353 Exp.06-30-09

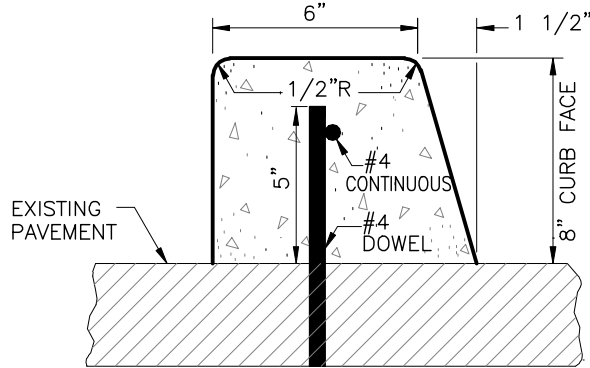
**B-111**



\* NOT FOR USE IN PUBLIC RIGHT-OF-WAY.

**NOTES**

1. CONCRETE PER LIN. FT. = 0.025 C.Y. FOR 6" C.F. AND 0.031 C.Y. FOR 8" C.F.
2. CONCRETE SHALL BE 5 1/2 SACK WITH 3/4" AGGREGATE.
3. FULL FACE 3/4" FELT EXPANSION JOINTS SHALL BE PLACED AT THE END OF ALL CURB RETURNS. 1/4"x2" WEAKENED PLANE JOINTS SHALL BE PLACED AT 15' INTERVALS WITH 3/4" FULL FACE FELT EXPANSION JOINTS AT 45' O.C. MAX.
- \* 4. STANDARD FOR 6" CURB FACE IS NOT TO BE USED IN THE PUBLIC RIGHT OF WAY WITHOUT APPROVAL OF CITY ENGINEER.



**B-8**  
N.T.S.

**NOTES:**

1. BOND CURB TO PAVEMENT SURFACE WITH APPROVED ADHESIVE. ADHESIVE TO COVER ENTIRE BASE AREA OF CURB.
2. CONCRETE PER LIN. FT. = 0.0138 C.Y.
3. CONCRETE SHALL BE 5 1/2 SACK WITH 3/4" AGGREGATE.
4. 1/4" x 2" WEAKENED PLANE JOINTS SHALL BE PLACED AT 15' INTERVALS.
5. INSTALL DOWELS AT 6'-0" ON CENTER. EMBED INTO PAVEMENT MIN. OF 6".



**CONCRETE CURB ONLY  
TYPE "A" & "B"**

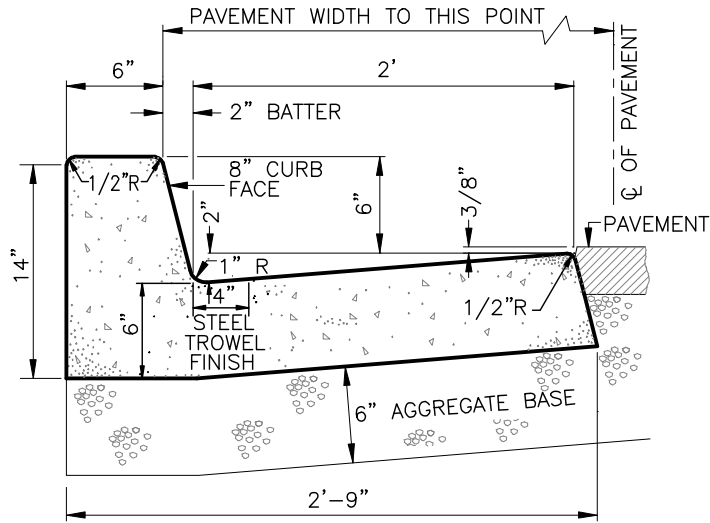
Approved \_\_\_\_\_ Date \_\_\_\_\_

REVISIONS	BY	DATE
△ GENERAL UPDATE	DJC	7/1/00

STD. PLAN NUMBER

**B-112**

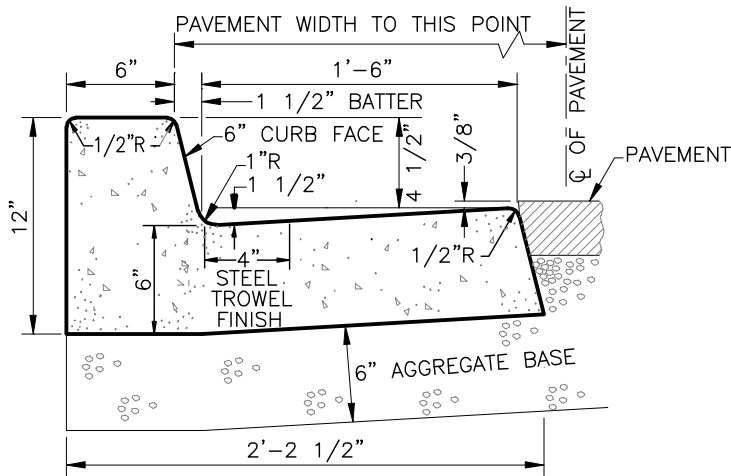
City Engineer R.C.E. 50353 Exp.06-30-09



△ **C-8**

**NOTES:**

1. CONCRETE PER LIN. FT. = 0.0645 C.Y.
2. CONCRETE SHALL BE 5 1/2 SACK WITH 3/4" AGGREGATE.
3. FULL FACE 3/4" FELT EXPANSION JOINTS SHALL BE PLACED AT THE END OF ALL CURB RETURNS. 1/4"x2" WEAKENED PLANE JOINTS SHALL BE PLACED AT 15' INTERVALS WITH 3/4" FULL FACE FELT EXPANSION JOINTS AT 45' O.C. MAX. AND AT THE TOP OF "X'S" ON ALL DRIVEWAY APPROACHES.
4. AGGREGATE BASE SHALL BE CLASS II 3/4".



△ **D-6**

**NOTES:**

1. CONCRETE PER LIN. FT. = 0.0505 C.Y.
2. CONCRETE SHALL BE 5 1/2 SACK WITH 3/4" AGGREGATE.
3. FULL FACE 3/4" FELT EXPANSION JOINTS SHALL BE PLACED AT THE END OF ALL CURB RETURNS. 1/4"x2" WEAKENED PLANE JOINTS SHALL BE PLACED AT 15' INTERVALS WITH 3/4" FULL FACE FELT EXPANSION JOINTS AT 45' O.C. MAX. AND AT THE TOP OF "X'S" ON ALL DRIVEWAY APPROACHES.
4. AGGREGATE BASE SHALL BE CLASS II 3/4".



City of  
Garden Grove  
California

**CONCRETE CURB &  
GUTTER TYPE "C" & "D"**

Approved \_\_\_\_\_

Date \_\_\_\_\_

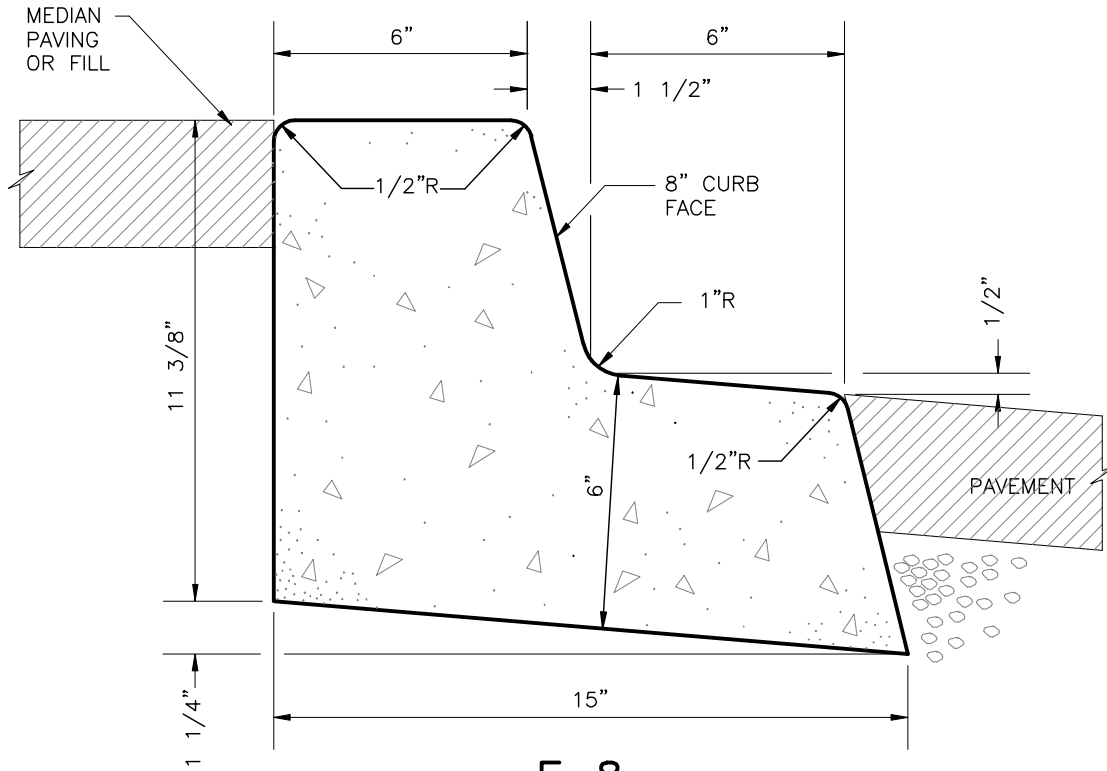
REVISIONS
△ GENERAL UPDATE

BY	DATE
DJC	7/1/00

STD. PLAN NUMBER

**B-113**

City Engineer R.C.E. 50353 Exp.06-30-09



**F-8**

**NOTES:**

1. CONCRETE PER LIN. FT. = .032 C.Y.
2. CONCRETE SHALL BE 5 1/2 SACK WITH 3/4" AGGREGATE.
3. WEAKENED PLANE JOINT SHALL BE PLACED AT 15' INTERVALS. INSTALL 3/4" FELT JOINT 60' O.C. AND AT ALL CHANGES IN DIRECTION.

DO NOT USE THIS STANDARD FOR NEW CONSTRUCTION – TO BE USED ONLY FOR REPLACEMENT OF EXISTING MEDIAN CURB ORIGINALLY BUILT TO THIS STANDARD.



City of  
Garden Grove  
California

**CONCRETE CURB &  
GUTTER TYPE "F"**

Approved \_\_\_\_\_ Date \_\_\_\_\_

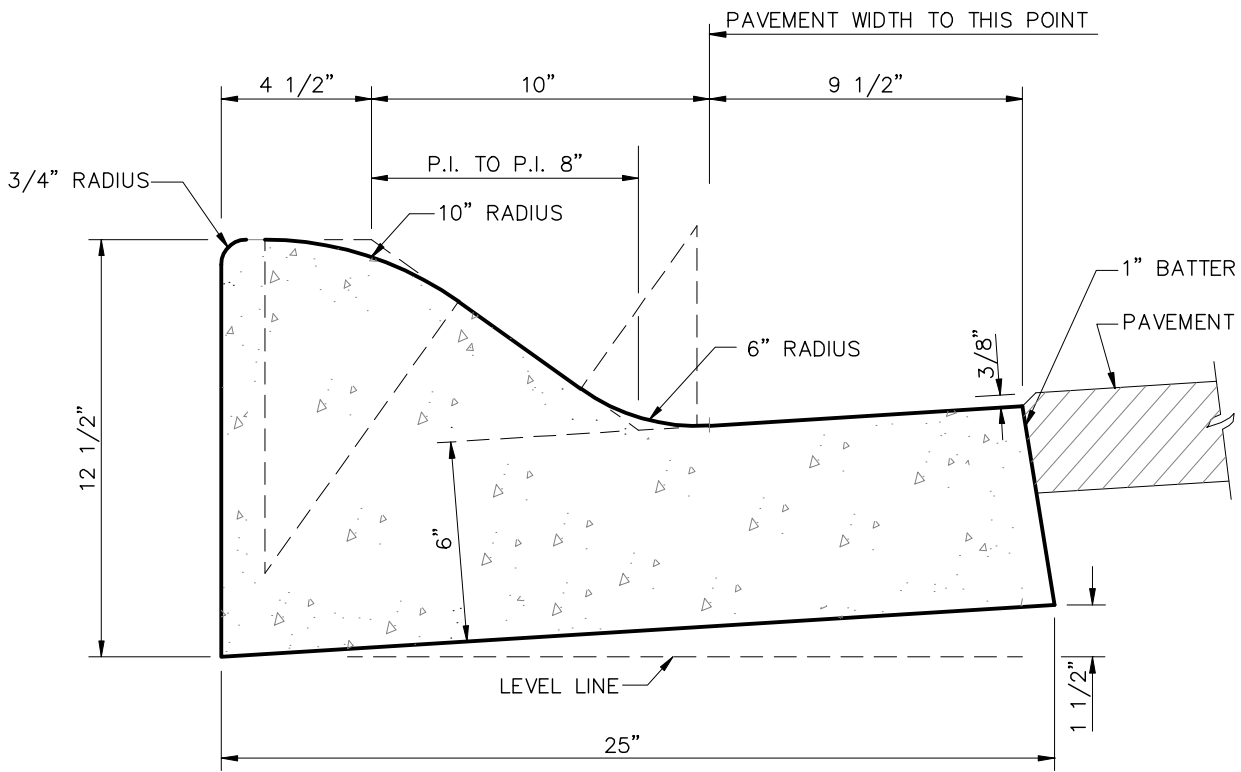
City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER

**B-115**





**SECTION**

**NOTES:**

1. TO BE USED FOR REPLACEMENT-IN-KIND ONLY - NOT FOR NEW CONSTRUCTION.
2. CONCRETE PER LIN. FT.= 0.0502 C.Y.
3. CONCRETE TO BE 5 1/2" SACK WITH 3/4" AGGREGATE.

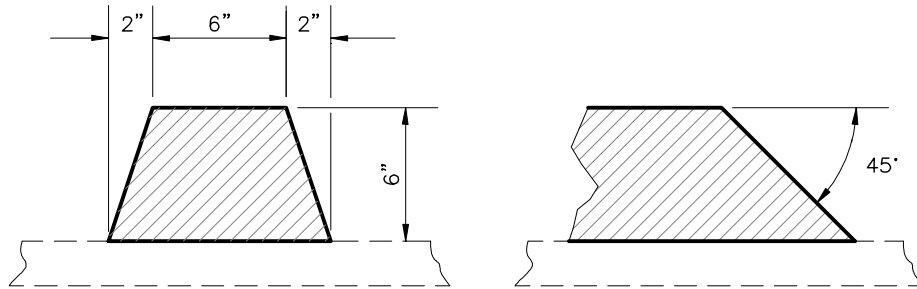


**ROLLED CURB  
& GUTTER**

Approved \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_\_\_  
 City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

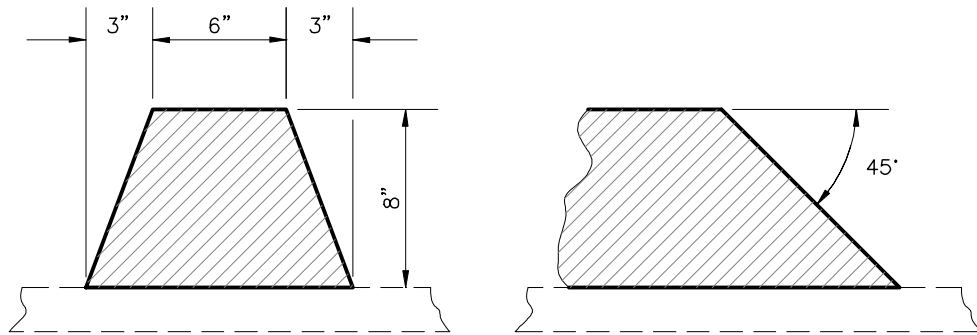
STD. PLAN NUMBER  
**B-116**



SECTION

END SIDE VIEW

6" A.C. BERM



SECTION

END SIDE VIEW

8" A.C. BERM



City of  
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California

A.C. BERM

Approved \_\_\_\_\_ Date \_\_\_\_\_

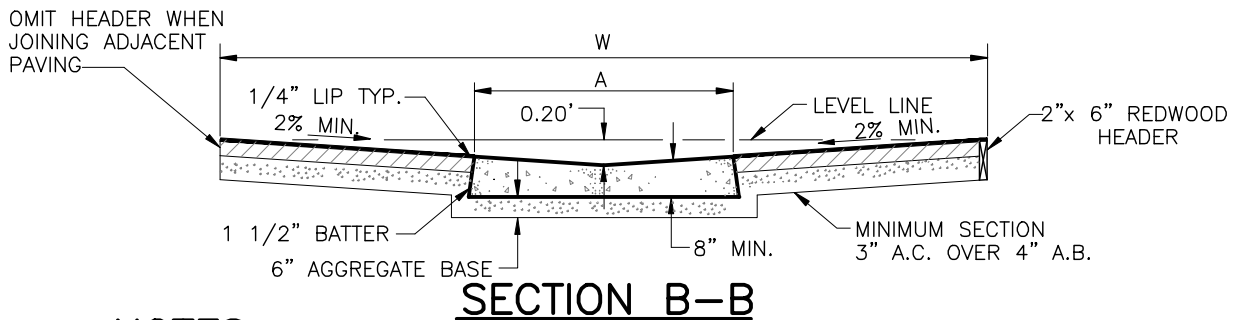
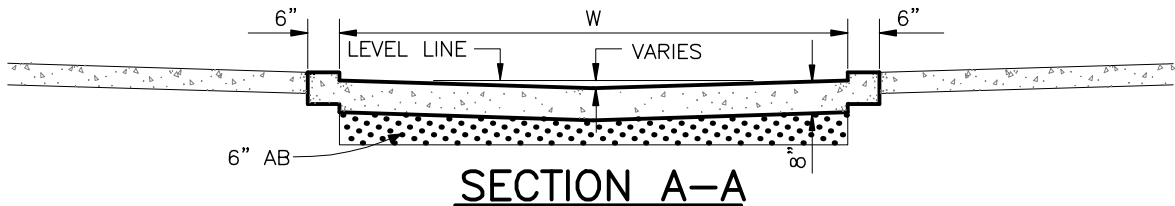
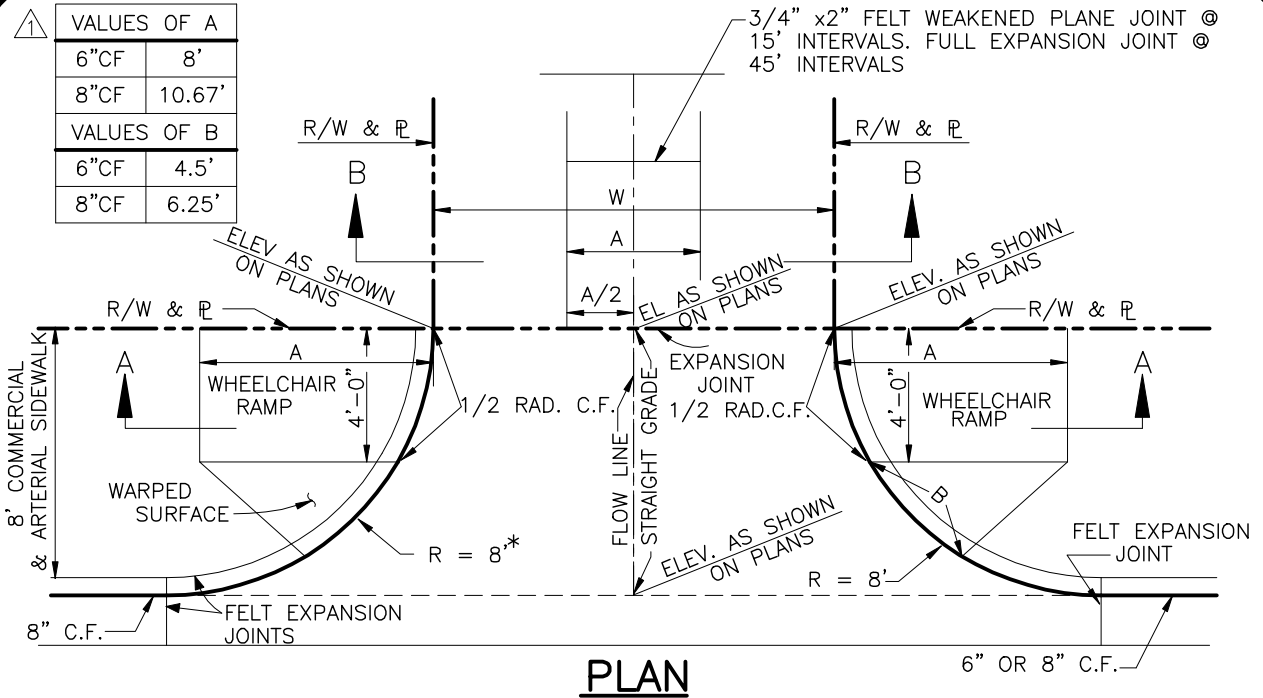
City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER

**B-117**

VALUES OF A	
6"CF	8'
8"CF	10.67'
VALUES OF B	
6"CF	4.5'
8"CF	6.25'



### NOTES:

1. A=4.0' WHERE ALLEY DOES NOT RECEIVE DRAINAGE FROM THE STREET.  
A=6.0' WHERE ALLEY DOES RECEIVE DRAINAGE FROM THE STREET.
2. W=R/W WIDTH. (20' MIN.)
3. ALL CONCRETE SHALL BE 5 1/2 SACK WITH 3/4" AGGREGATE.
- \*4. 8' MIN. RADIUS. USE RADIUS EQUAL TO PARKWAY WIDTH IF PARKWAY WIDTH IS LARGER THAN 8'.

DO NOT USE THIS STANDARD FOR NEW CONSTRUCTION. USE ONLY FOR REPAIRS TO EXISTING APRONS. USE STANDARD B-120 FOR ALL NEW ALLEY ENTRANCES.



City of  
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## ALLEY AND ALLEY APRON

Approved \_\_\_\_\_

Date \_\_\_\_\_

REVISIONS

BY

DATE

STD. PLAN NUMBER

△ ADDED TABLE

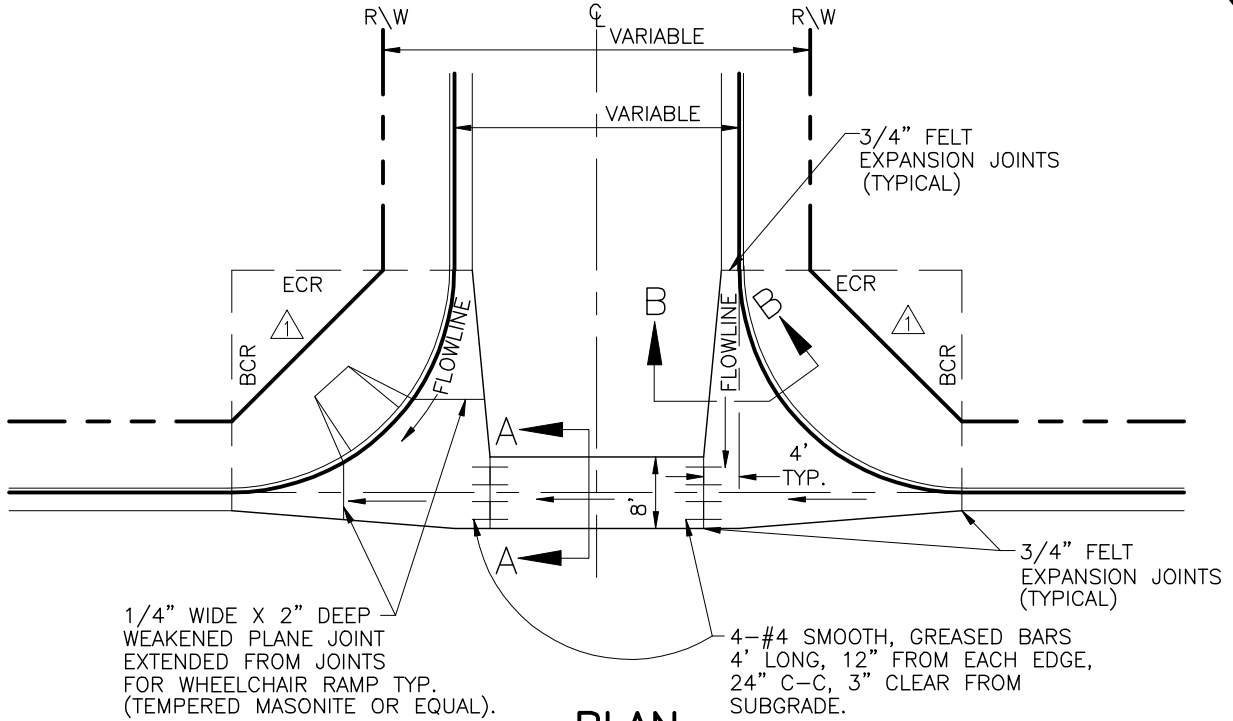
DJC

7/1/00

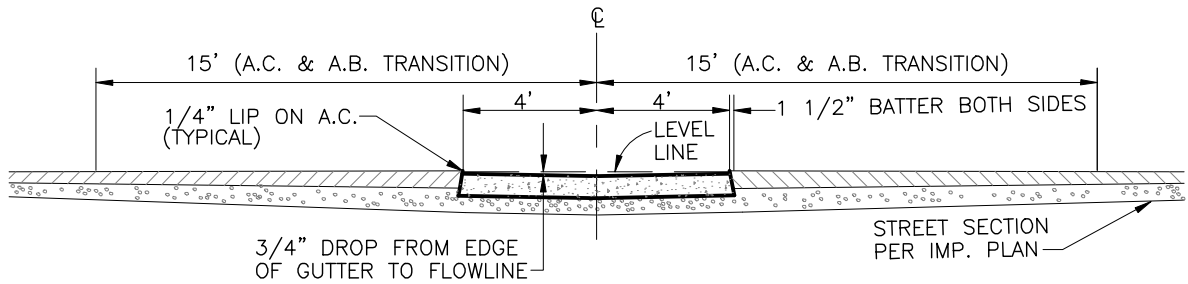
B-118

City Engineer

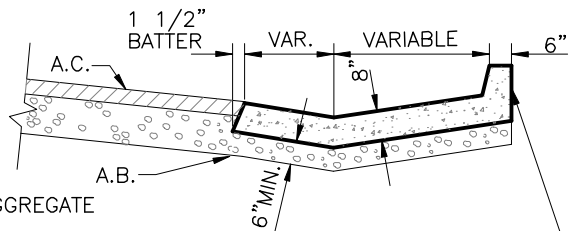
R.C.E. 50353 Exp.06-30-09



**PLAN**



**SECTION A-A**



CURB IS INCLUDED IN SPANDREL AREA.

**SECTION B-B**

**NOTES:**

1. ALL CONCRETE SHALL BE 6 OR 7 SACK WITH 3/4" AGGREGATE AS REQUIRED BY CITY ENGINEER.
2. STEEL TROWEL 8" WIDE FLOWLINE IN GUTTER AND APRONS.
3. AVOID ADVERSE FLOW LINES ON STREETS WHICH ARE NOT PERPENDICULAR TO EACH OTHER BY CONSTRUCTING FLOW LINES PERPENDICULAR TO EACH OTHER.
4. SEE STD. PLAN B-108 FOR WHEELCHAIR RAMPS.



**CROSS GUTTER**

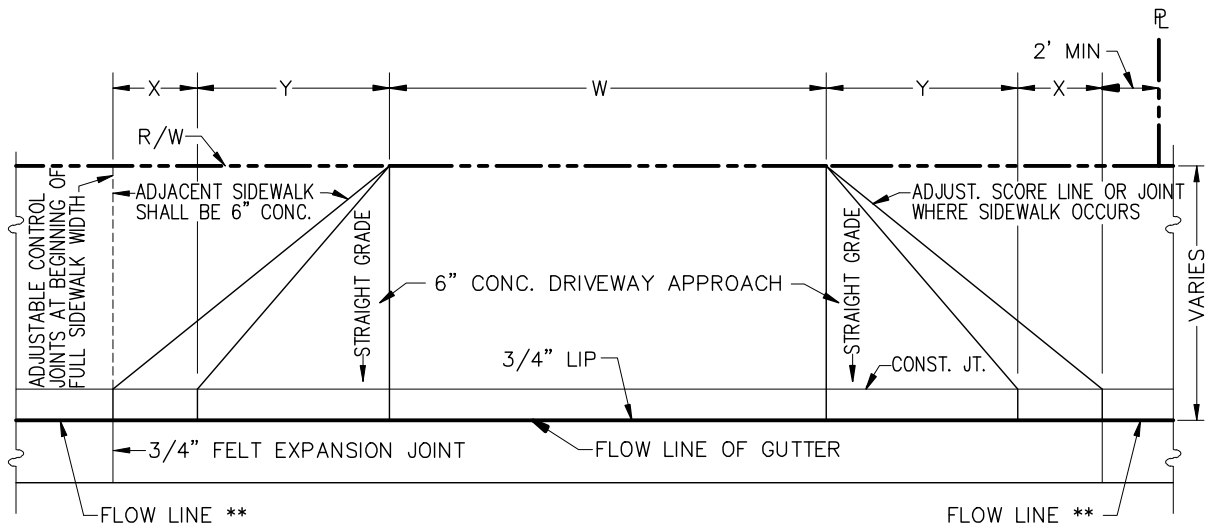
Approved \_\_\_\_\_ Date \_\_\_\_\_

City Engineer R.C.E. 50353 Exp.06-30-09

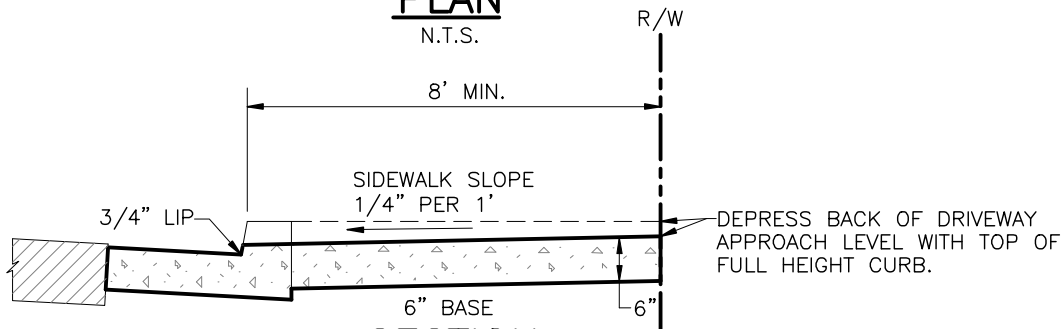
REVISIONS	BY	DATE
△ CUT-OFF	DJC	7/1/00

STD. PLAN NUMBER

**B-119**



**PLAN**  
N.T.S.



**SECTION**  
N.T.S.

VALUES OF "X"		VALUES OF "Y"*		VALUES OF "W"		
SIDEWALK	CURB HEIGHT	8' PARKWAY	8'	RESIDENTIAL	MIN.	MAX.
	6" 8"	9' PARKWAY	8'		18'	30'
ADJACENT TO CURB	4' 4'	10' PARKWAY	8'	COMMERCIAL INDUSTRIAL & MULTI- RESIDENTIAL	30'	
FULL PARKWAY	4' 4'					

\* VALUES OF "Y" MAY BE REDUCED UNDER EXTENUATING CIRCUMSTANCES.

DRIVEWAY NOTES ON SHEET 2

\*\* A POSITIVE FLOWLINE SHALL BE MAINTAINED. EXISTING CURB AND GUTTER SHALL BE REMOVED AND REPLACED, AS DETERMINED BY THE CITY ENGINEER, TO ACHIEVE PROPER DRAINAGE.



**ARTERIAL STREET DRIVEWAY**

Approved \_\_\_\_\_ Date \_\_\_\_\_  
City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER  
**B-120**  
SHEET 1 OF 2

**NOTES:**

1. SIDEWALK AND RAMP THICKNESS SHALL BE 6"(MIN.). P.C.C. SHALL BE CLASS "A" CONCRETE 6 OR 7 SACK WITH 3/4" AGGREGATE.
2. TWO (2) FEET (MIN.) OF FULL HEIGHT CURB SHALL BE REQUIRED BETWEEN THE DRIVEWAY AND THE SIDE PROPERTY LINE EXTENDED.
3. A MINIMUM OF 22' OF FULL HEIGHT CURB SHALL BE REQUIRED BETWEEN DRIVEWAYS SERVING THE SAME PARCEL.
4. COLOR ADDITIVES OR PATTERN STAMPED CONCRETE SHALL NOT BE USED IN PUBLIC RIGHT-OF-WAY.
5. INSTALL 3/4"x6" FELT JOINT AT TOP OF "X" AND 3/4"x2" FELT JOINT AT 15' O.C.
6. 95% RELATIVE COMPACTION REQUIRED IN UPPER 6" OF SUBGRADE.
7. NO HORIZONTAL CURB CUTS ALLOWED.
8. FOR NEW DRIVEWAY LOCATIONS REMOVE AND RECONSTRUCT CURB AND GUTTER SEPARATELY FROM DRIVEWAY. INSPECTOR'S APPROVAL IS REQUIRED PRIOR TO ANY SAWCUT.



City of  
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**ARTERIAL STREET DRIVEWAY**

Approved \_\_\_\_\_ Date \_\_\_\_\_

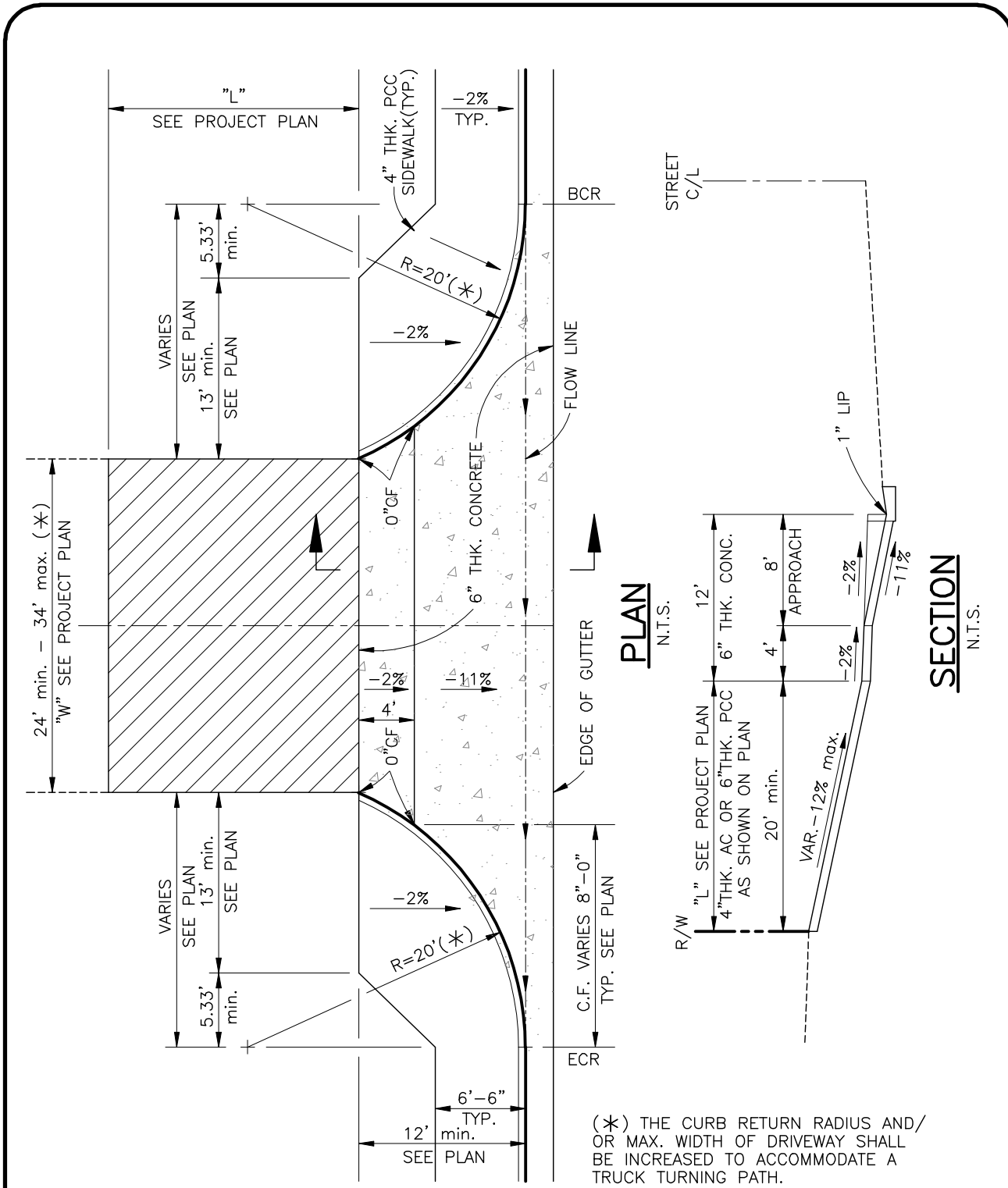
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City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER

**B-120**

SHEET 2 OF 2



NOTE : FOR GENERAL NOTES SEE S.B. COUNTY STANDARD 129.

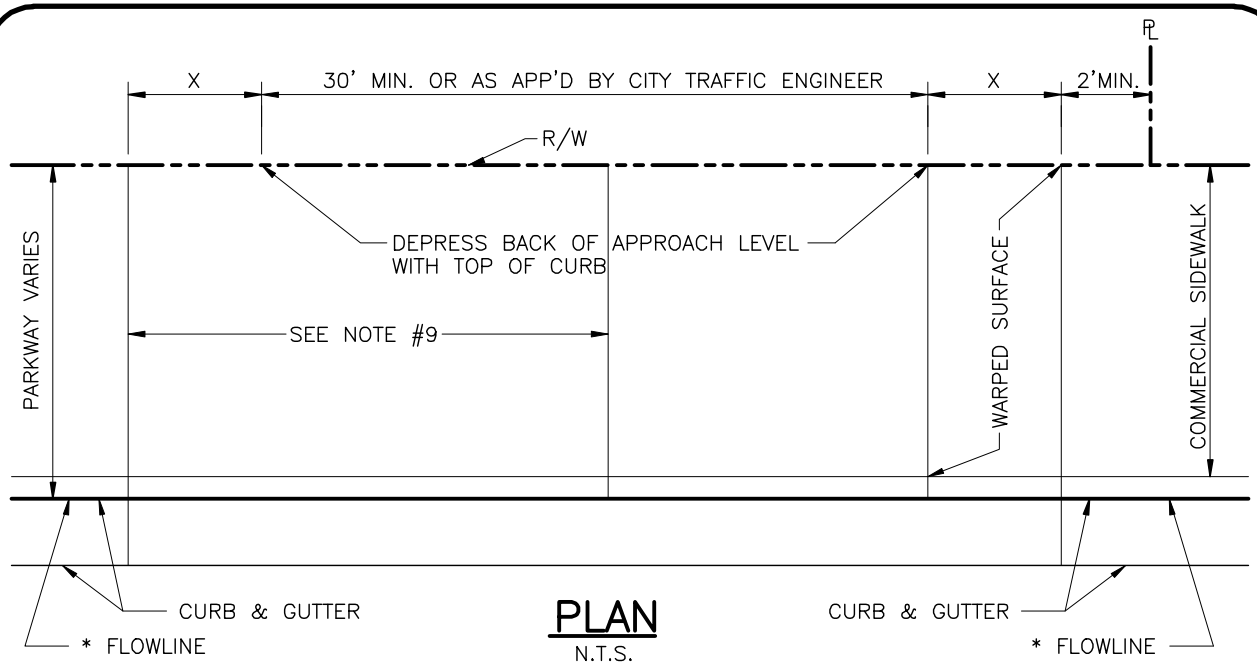


# ARTERIAL STREET DRIVEWAY

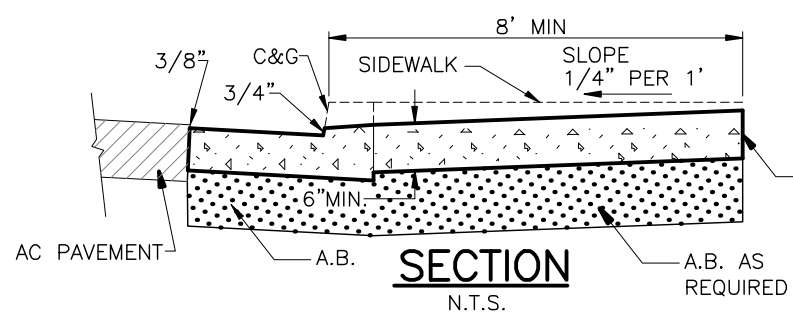
Approved \_\_\_\_\_ Date \_\_\_\_\_  
 City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE	STD. PLAN NUMBER

B-120a



**PLAN**  
N.T.S.



**SECTION**  
N.T.S.

\* A POSITIVE FLOWLINE SHALL BE MAINTAINED. EXISTING CURB & GUTTER SHALL BE REMOVED & REPLACED, AS DETERMINED BY THE CITY ENGINEER, TO ACHIEVE PROPER DRAINAGE.

**NOTES:**

1. ALL CONCRETE SHALL BE CLASS "A" 6 SACK. PRIOR TO ANY SAWCUT, INSPECTOR'S APPROVAL IS REQUIRED.
2. APPROACH AND SIDEWALK SHALL BE 6" MINIMUM THICKNESS.
3. X=3' FOR 6" CF, X=4' FOR 8" CF.
4. TWO FEET (MIN.) OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAY AND SIDE PROPERTY LINE EXTENDED.
5. A MINIMUM OF 22' OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAYS SERVING THE SAME PARCEL.
6. 95% RELATIVE COMPACTION REQ'D IN UPPER 6" OF SUBGRADE. AGGREGATE BASE MAY BE REQUIRED BY CITY ENGINEER.
7. FOR NEW DRIVEWAY LOCATIONS REMOVE AND RECONSTRUCT CURB & GUTTER SEPARATELY FOR DRIVEWAY.
8. NO HORIZONTAL CURB CUTS ALLOWED.
9. INSTALL 3/4"x2" FELT JOINTS AT 15' O.C. AND 3/4"x6" FELT JOINTS AT TOP OF X'S.
10. SEE CITY STANDARD PLAN B-120 FOR COMMERCIAL DRIVEWAYS ON ARTERIAL STREETS.
11. COLORED ADDITIVES OR PATTERNED CONCRETE SHALL NOT BE USED IN PUBLIC R/W.



**NON-ARTERIAL MULTI-RESIDENTIAL & COMMERCIAL DRIVEWAY**

Approved \_\_\_\_\_ Date \_\_\_\_\_  
 City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER  
**B-121**





**NOTES:**

1. ALL CONCRETE SHALL BE 5 1/2" SACK 3/4" AGGREGATE. PRIOR TO ANY SAWCUT, INSPECTOR'S APPROVAL IS REQUIRED.
2. APPROACH AND SIDEWALK SHALL BE 6" MINIMUM THICKNESS, GUTTER SHALL BE 6" MINIMUM.
3. WHEN INSTALLING A NEW DRIVE APPROACH WHERE CURB AND GUTTER EXIST, SAWCUT THE CURB AT RIGHT ANGLES TO THE STREET CENTER LINE AND REMOVE THE ENTIRE CURB AND GUTTER. POUR DRIVE APPROACH MONOLITHICALLY WITH THE CURB DEPRESSION AND GUTTER. IF THE SAWCUT IS WITHIN 5' OF AN EXPANSION JOINT, WEAKENED PLANE JOINT, OR A CRACK, THEN REMOVE AND REPLACE THE CURB TO THE JOINT OR SAWCUT ON THE FAR SIDE OF THE CRACK.
4. TWO FEET (MIN) OF FULL HEIGHT CURB SHALL BE REQUIRED BETWEEN DRIVEWAY AND SIDE PROPERTY LINE EXTENDED.
5. X=3' FOR 6" CURB FACE.  
X=4' FOR 8" CURB FACE.
6. R.C. 95% MIN. REQUIRED IN UPPER 6" SUBGRADE.
7. A MINIMUM OF 22' OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAYS SERVING THE SAME PARCEL.
8. HORIZONTAL CURB CUTS MAY BE ALLOWED ON A LIMITED BASIS AS DETERMINED BY THE CITY ENGINEER.
9. INSTALL 3/4"x6" FELT JOINT AT TOP OF X AND 3/4"x2" FELT JOINT AT 15' O.C.
10. COLORED ADDITIVES OR PATTERNED CONCRETE SHALL NOT BE USED IN PUBLIC R/W.



City of  
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**LOCAL STREET  
DRIVEWAY**

Approved \_\_\_\_\_ Date \_\_\_\_\_

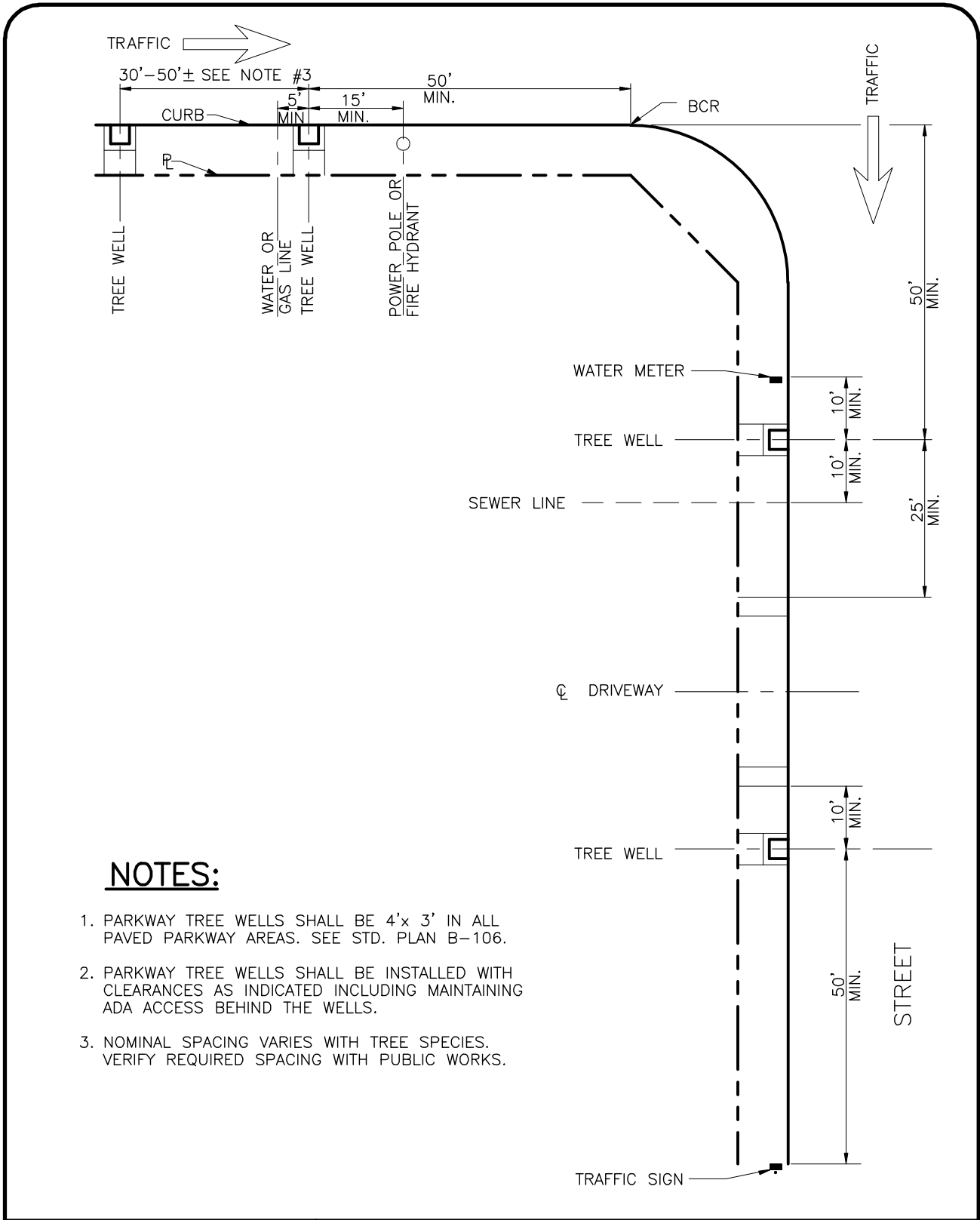
City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER

**B-122**

SHEET 2 OF 2



**NOTES:**

1. PARKWAY TREE WELLS SHALL BE 4'x 3' IN ALL PAVED PARKWAY AREAS. SEE STD. PLAN B-106.
2. PARKWAY TREE WELLS SHALL BE INSTALLED WITH CLEARANCES AS INDICATED INCLUDING MAINTAINING ADA ACCESS BEHIND THE WELLS.
3. NOMINAL SPACING VARIES WITH TREE SPECIES. VERIFY REQUIRED SPACING WITH PUBLIC WORKS.



**TYPICAL PARKWAY TREE WELL INSTALLATION**

Approved _____	Date _____	REVISIONS	BY	DATE	STD. PLAN NUMBER
City Engineer	R.C.E. 50353				<b>B-123</b>
	Exp.06-30-09				



1. ALL POSTS SHALL BE STANDARD (SCHEDULE 40) GALVANIZED PIPE & SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

SIZE OF PIPE	WT. PER LIN. FT. BEFORE GALV.
2 1/2 IN.	5.79 LBS.
2 "	3.65 "
3 "	7.58 "
4 IN.	10.79 LBS.
2 "	3.65 "
1 1/2 "	2.72 "
2 1/2 "	5.79 "
3 1/2 "	8.11 "

END, CORNER & INTERMEDIATE POSTS

DRIVE GATE POSTS--SINGLE TO 6' OR DOUBLE TO 12' OPENINGS.  
 DRIVE GATE POSTS--SINGLE OVER 6' TO 13' OR DOUBLE OVER 12' TO 26' OPENINGS.

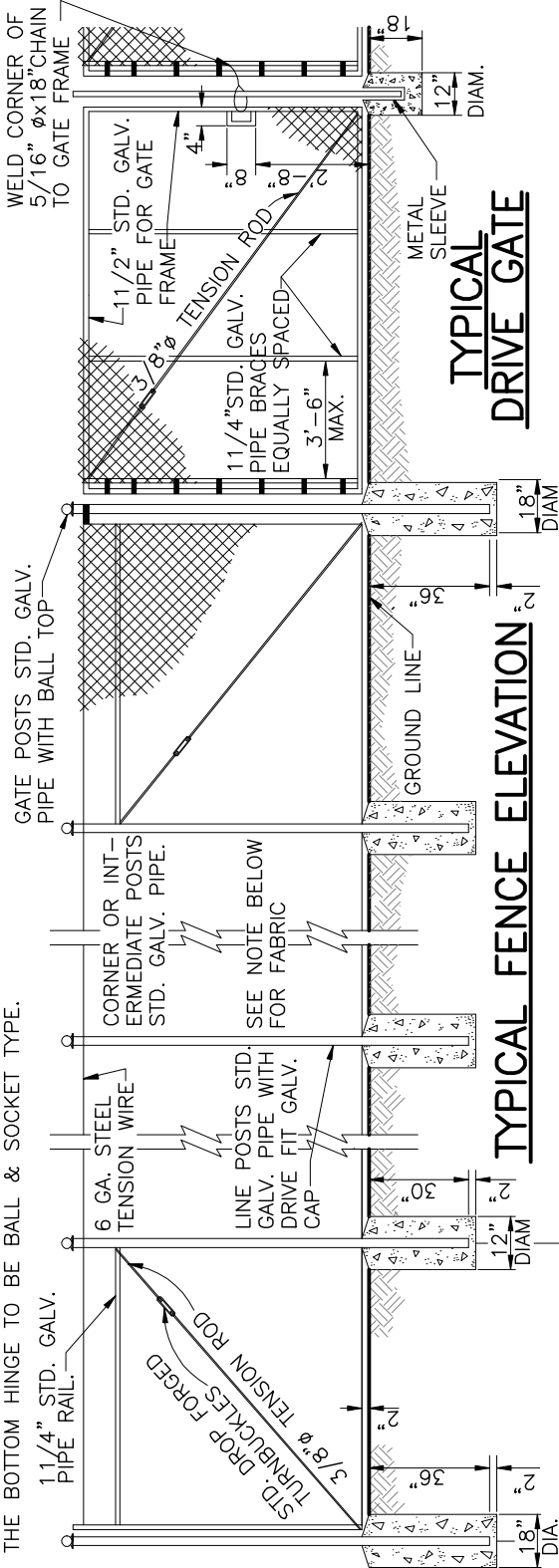
FOR FENCE LESS THAN 72"

END, CORNER & INTERMEDIATE POSTS

DRIVE GATE POSTS--SINGLE TO 6' OR DOUBLE TO 12' OPENINGS.  
 DRIVE GATE POSTS--SINGLE OVER 6' TO 13' OR DOUBLE OVER 12' TO 26' OPENINGS.

2. ALL POSTS SHALL BE FITTED WITH APPROVED TOPS.

3. ALL WALK & DRIVE GATES SHALL BE HUNG BY TWO MALLEABLE IRON HINGES THE BOTTOM HINGE TO BE BALL & SOCKET TYPE.



**TYPICAL DRIVE GATE**

9 GA-2" GALV. MESH CHAIN LINK FABRIC TO BE USED UNLESS OTHERWISE SPECIFIED BY ENGINEER. FASTEN FABRIC TO LINE POSTS AT INTERVALS OF APPROX. 12". WIRE TO TOP RAILS & TENSION WIRES, AT INTERVALS OF APPROX. 18" WITH 12 GA. GALV. OR ALUM. TIE WIRES.

**TYPICAL FENCE ELEVATION**

NOTE: CHAIN LINK FENCE FABRIC SHALL HAVE TWISTED & BARBED FINISH ON ALL EDGES. CHAIN LINK FENCE FABRIC SHALL BE FASTENED ON THE SIDE OF POSTS DESIGNATED BY ENGINEER. GATE SHALL HAVE A FULL HEIGHT LOCKING BAR WITH NOT FEWER THAN TWO SETS OF LOCKING PRONGS & A PAIR OF PERFORATED LUGS, OR EQUIVALENT DEVICE FOR INSTALLATION OF A PADLOCK.

INTERMEDIATE POSTS ARE TO BE BRACED & TRUSSED TO ADJACENT LINE POSTS AT 300' INTERVALS ALONG FENCE LINE & AT ALIGNMENT DEFLECTION ANGLES OF 15 DEGREES OR MORE.



City of Garden Grove California

**CHAIN LINK FENCE DETAIL**

Approved \_\_\_\_\_

Date \_\_\_\_\_

REVISIONS

BY

DATE

STD. PLAN NUMBER

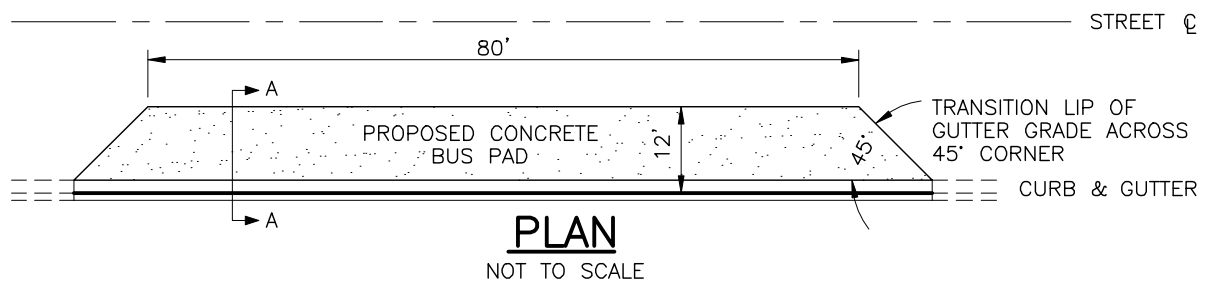
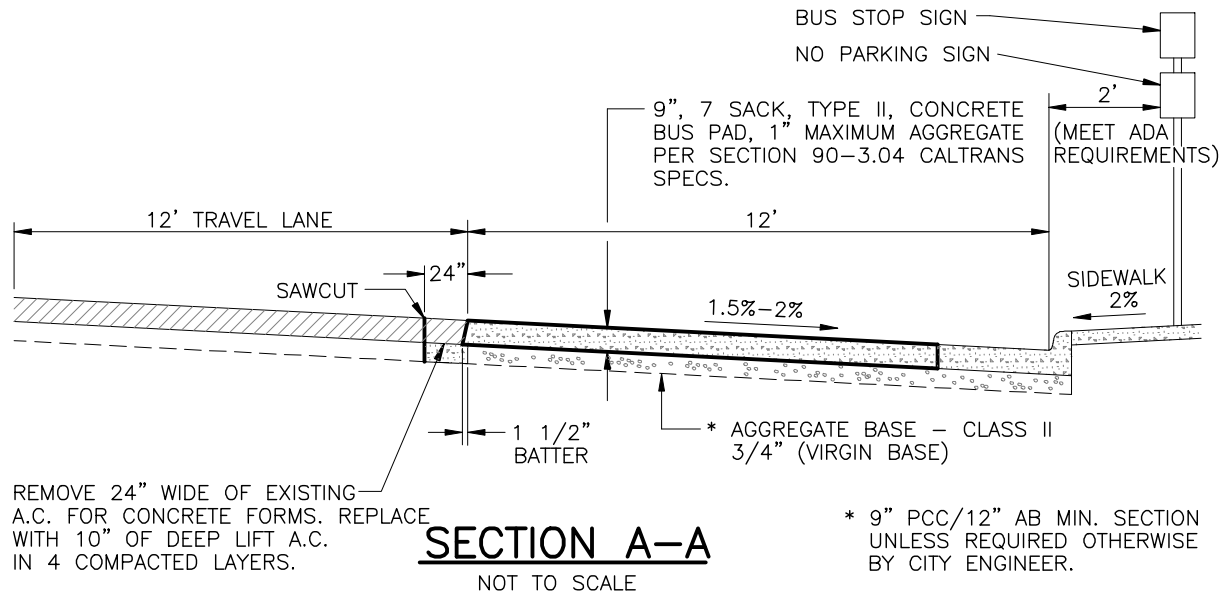
**B-125**

City Engineer

R.C.E. 50353 Exp.06-30-09

# CONSTRUCTION NOTES:

1. COMPACTION ON THE UPPER 6" OF NATIVE SOIL AND AGGREGATE SHALL BE 95%.
2. CONCRETE CYLINDER TESTS SHALL BE TAKEN AS REQUIRED BY INSPECTOR.
3. CONCRETE SHALL HAVE A MAXIMUM OF 4" SLUMP.
4. NO FLY ASH PERMITTED IN CEMENT OR AS AN ADDITIVE.
5. CURING COMPOUND WITH FUGITIVE DYE SHALL BE APPLIED IMMEDIATELY AFTER FINAL FINISHING.
6. 3/4" X 3" DEEP FELT JOINTS TO BE INSTALLED AT 15' OC.
7. CONTRACTOR SHALL MAINTAIN TRAFFIC DETOUR, INCLUDING FLASHING ARROW BOARDS FOR A MINIMUM OF 5 DAYS TO ALLOW CONCRETE BUS PAD TO CURE BEFORE PLACING TRAFFIC ON IT.
8. FINAL LOCATION OF BUS PAD TO BE APPROVED IN FIELD BY OCTA PRIOR TO EXCAVATION.
9. CONTRACTOR SHALL FINISH CONCRETE PAD WITH MEDIUM TO HEAVY BROOM FINISH.



City of  
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## CONCRETE BUS PAD

Approved \_\_\_\_\_ Date \_\_\_\_\_

City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS

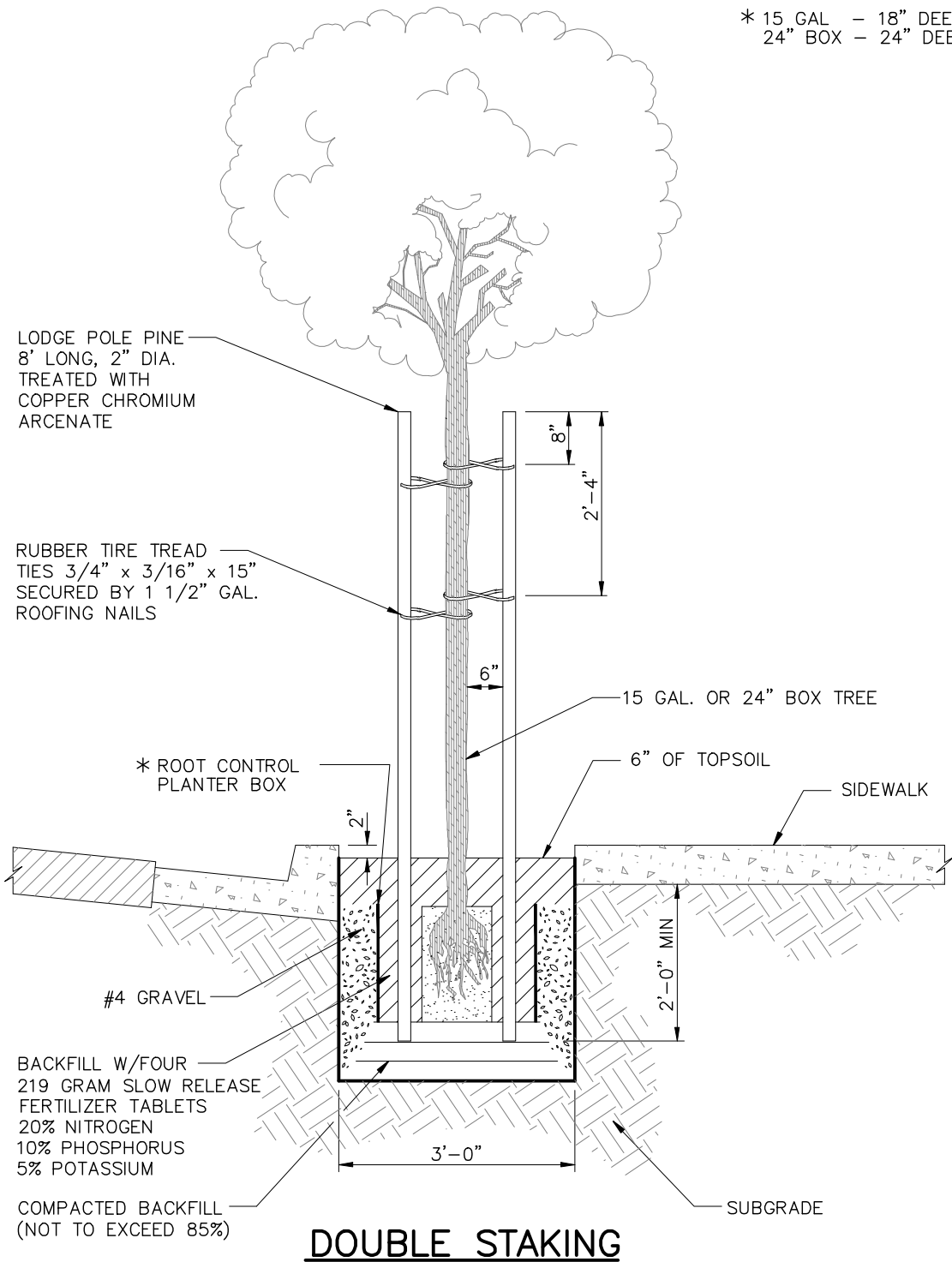
BY

DATE

STD. PLAN NUMBER

**B-126**

\* 15 GAL. - 18" DEEP  
 24" BOX - 24" DEEP



**DOUBLE STAKING**

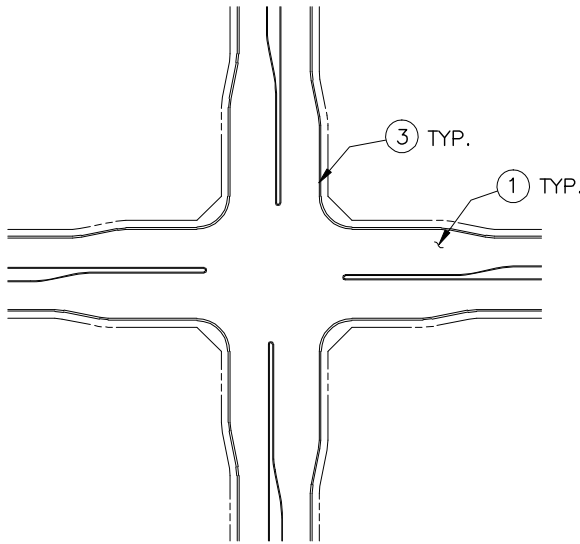


**STREET TREE PLANTING DETAIL**

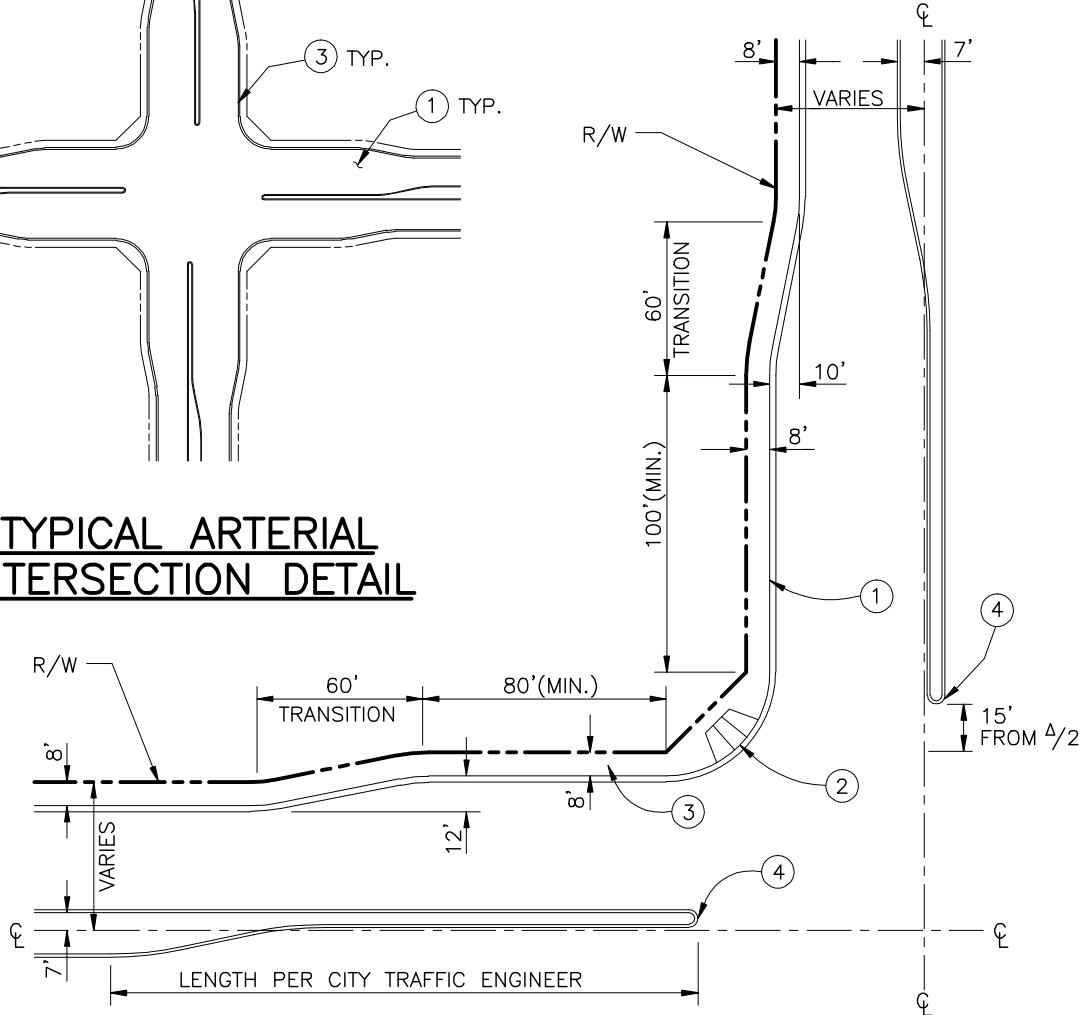
Approved \_\_\_\_\_ Date \_\_\_\_\_  
 City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER  
**B-127**



**TYPICAL ARTERIAL INTERSECTION DETAIL**



**TYPICAL CORNER DETAIL**

**NOTES:**

- ① RIGHT TURN POCKET DESIGN PER CITY STD. PLAN B-129 AT LOCATIONS AS REQUIRED BY CITY ENGINEER.
- ② WHEEL CHAIR ACCESS RAMP PER CITY STD. PLAN B-108.
- ③ BUS TURNOUT DESIGN PER CITY STD. PLAN B-131 AT LOCATIONS AS REQUIRED BY CITY ENGINEER.
- ④ RECONSTRUCT MEDIAN NOSE 15' BACK FROM A LINE CROSSING AT  $\Delta/2$  OF CURB RETURNS. DO NOT BLOCK CROSSWALK.
- ⑤ REFER TO ORANGE COUNTY R.D.M.D. STANDARD PLAN No. 1117 FOR INTERSECTION SIGHT DISTANCE REQUIREMENTS.



City of  
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California

**TYPICAL ARTERIAL/  
ARTERIAL INTERSECTION LAYOUT**

Approved \_\_\_\_\_ Date \_\_\_\_\_  
City Engineer R.C.E. 50353 Exp.06-30-09

REVISIONS	BY	DATE

STD. PLAN NUMBER  
**B-128**