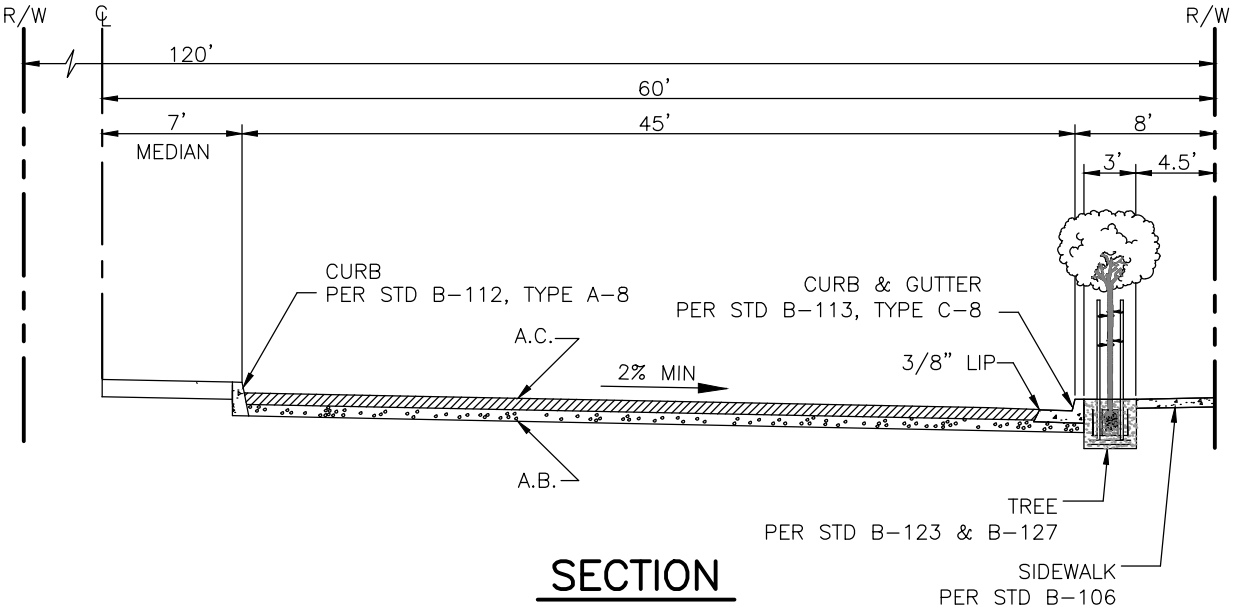
CITY OF GARDEN GROVE
PUBLIC WORKS STANDARD PLANS

SERIES B-100 STREET AND HIGHWAY

SECTIONS SYMMETRICAL
ABOUT ℄



SECTION

NOTES:

1. DETERMINE STRUCTURAL THICKNESS BY SOIL R-VALUE AND TRAFFIC INDEX. THE MINIMUM STRUCTURAL SECTION SHALL BE 6" A.C. OVER 12" A.B.
2. ASPHALT PAINT BINDER SHALL BE SS-1H AND APPLIED AS DIRECTED BY ENGINEER.
3. MINIMUM COMPACTION FOR A.C., A.B. AND UPPER 6" OF NATIVE SOIL IS 95% R.C.

City of Garden Grove California

GARDEN GROVE

MAJOR HIGHWAY TYPICAL SECTION

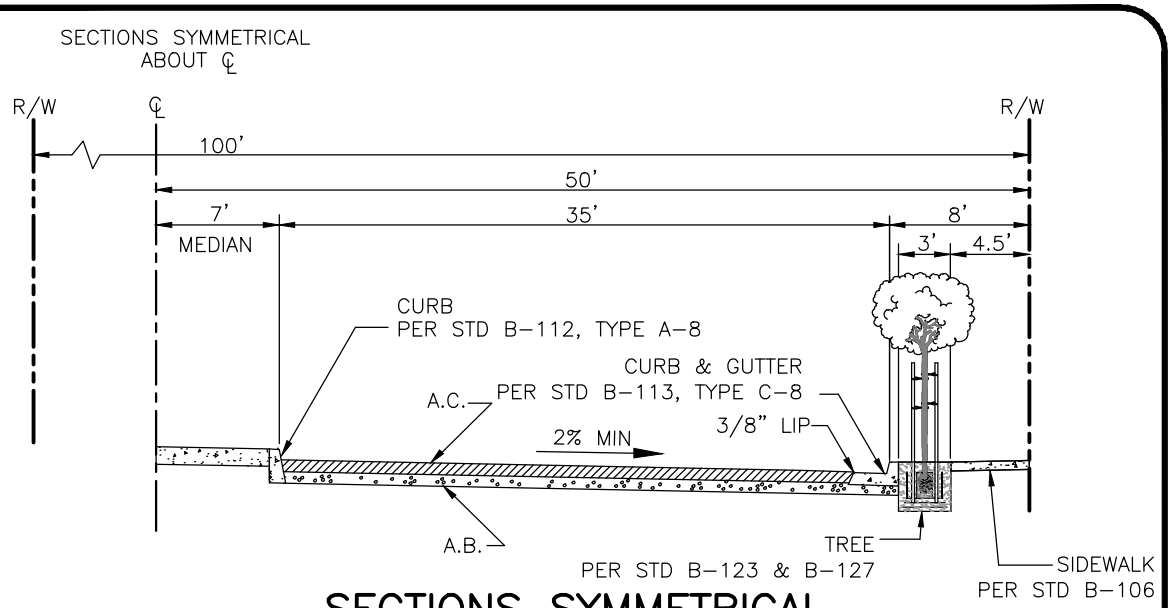
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

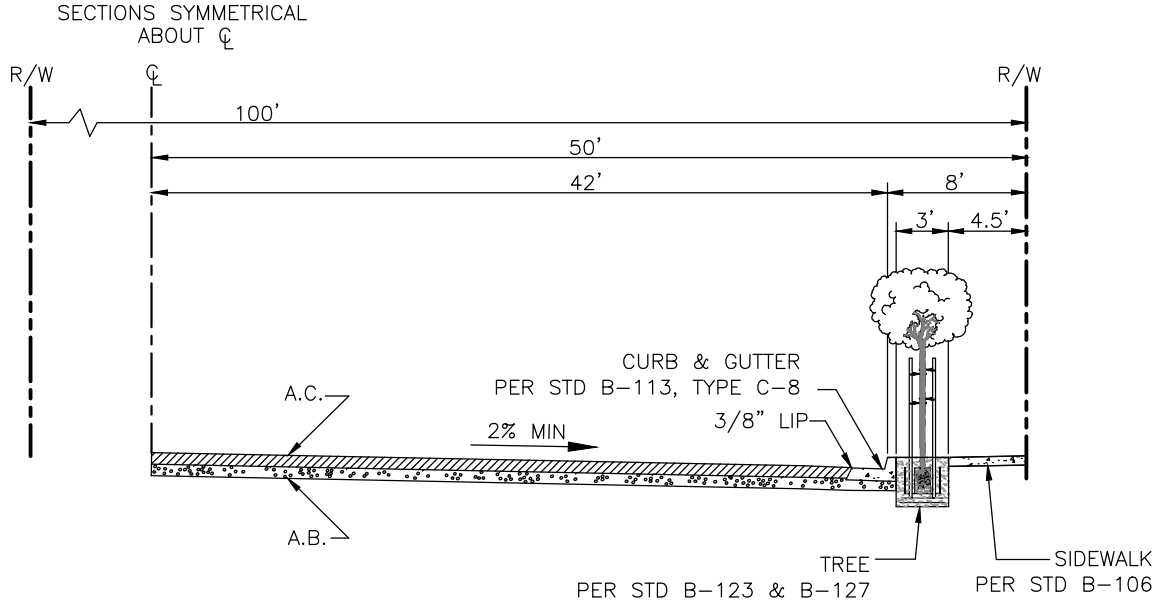
REVISIONS	BY	DATE

STD. PLAN NUMBER

B-101



SECTIONS SYMMETRICAL



ALTERNATE SECTION

NOTES:

1. DETERMINE STRUCTURAL THICKNESS BY SOIL R-VALUE AND TRAFFIC INDEX. THE MINIMUM STRUCTURAL SECTION SHALL BE 6" A.C. OVER 12" A.B.
2. ASPHALT PAINT BINDER SHALL BE SS-1H AND APPLIED AS DIRECTED BY THE ENGINEER.
3. MINIMUM COMPACTION FOR A.C., A.B. AND UPPER 6" OF NATIVE SOIL IS 95% R.C.

City of Garden Grove California

PRIMARY HIGHWAY TYPICAL SECTION

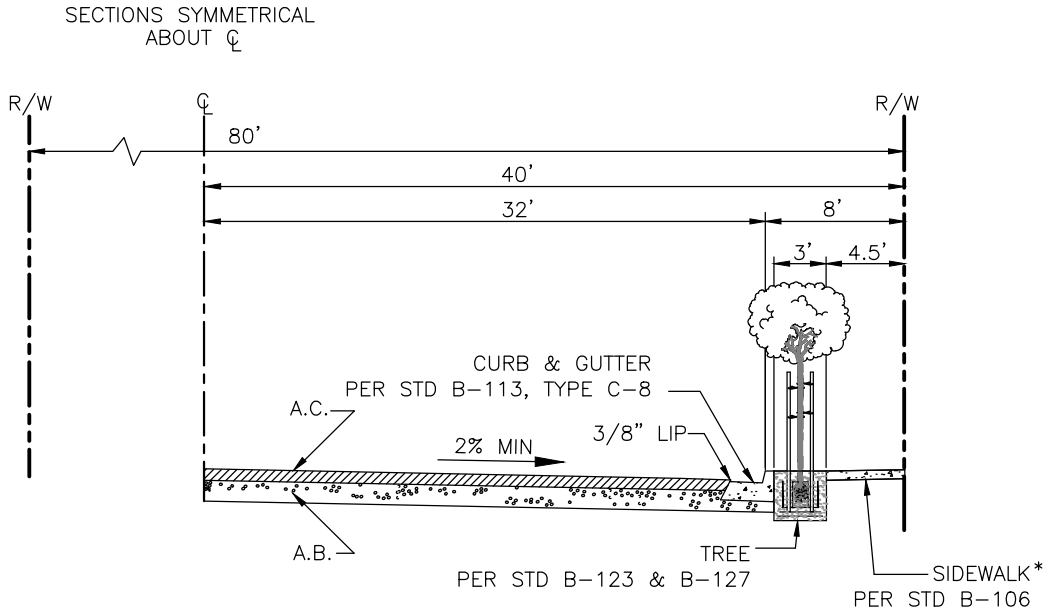
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-102



SECTION

NOTES:

1. DETERMINE STRUCTURAL THICKNESS BY SOIL R-VALUE AND TRAFFIC INDEX. THE MINIMUM STRUCTURAL SECTION SHALL BE 5" A.C. OVER 10" A.B.
2. ASPHALT PAINT BINDER SHALL BE SS-1H AND APPLIED AS DIRECTED BY THE ENGINEER.
3. 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.

City of Garden Grove California

SECONDARY HIGHWAY TYPICAL SECTION

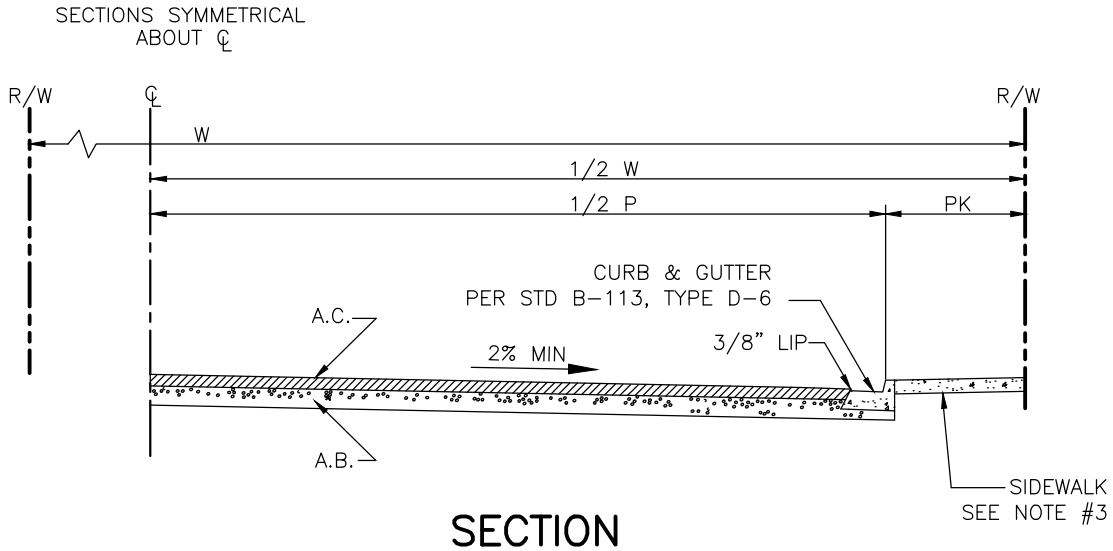
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-103



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. DETERMINE STRUCTURAL THICKNESS BY SOIL R-VALUE AND TRAFFIC INDEX. THE MINIMUM STRUCTURAL SECTION SHALL BE 4" A.C. OVER 6" A.B. (5" A.C. OVER 10" A.B. IN INDUSTRIAL AREAS).
2. ASPHALT PAINT BINDER SHALL BE SS-1H AND APPLIED AS DIRECTED BY THE ENGINEER.
3. SEE STANDARD PLAN B-105 FOR RESIDENTIAL SIDEWALK DETAILS AND STANDARD PLAN B-106 FOR COMMERCIAL AND ARTERIAL SIDEWALK ZONES. SIDEWALKS MAY NOT BE REQUIRED IN M-P ZONE.
4. MINIMUM COMPACTION FOR A.C., A.B. AND UPPER 6" OF NATIVE SOIL IS 95% R.C.

City of Garden Grove California

LOCAL STREET TYPICAL SECTION

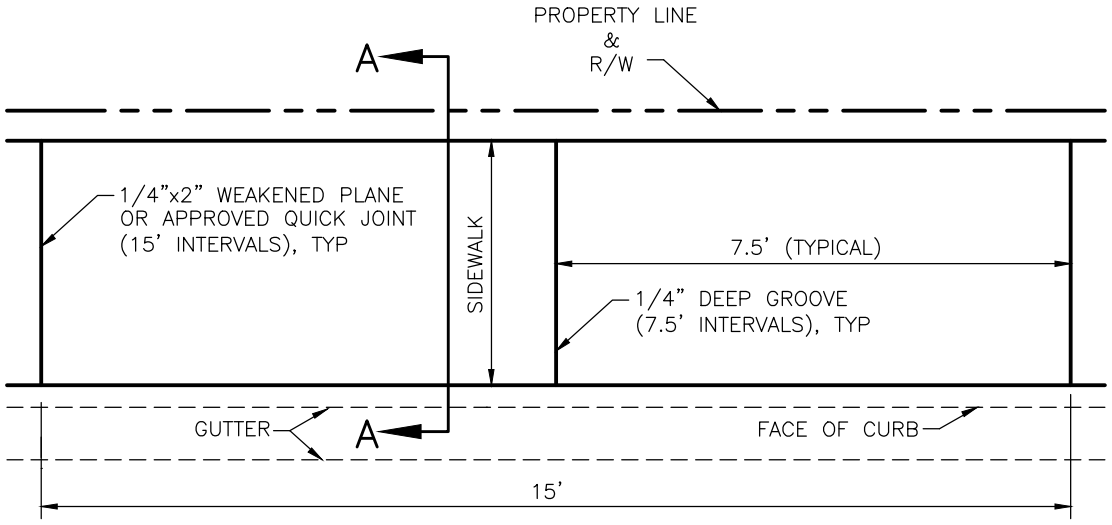
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

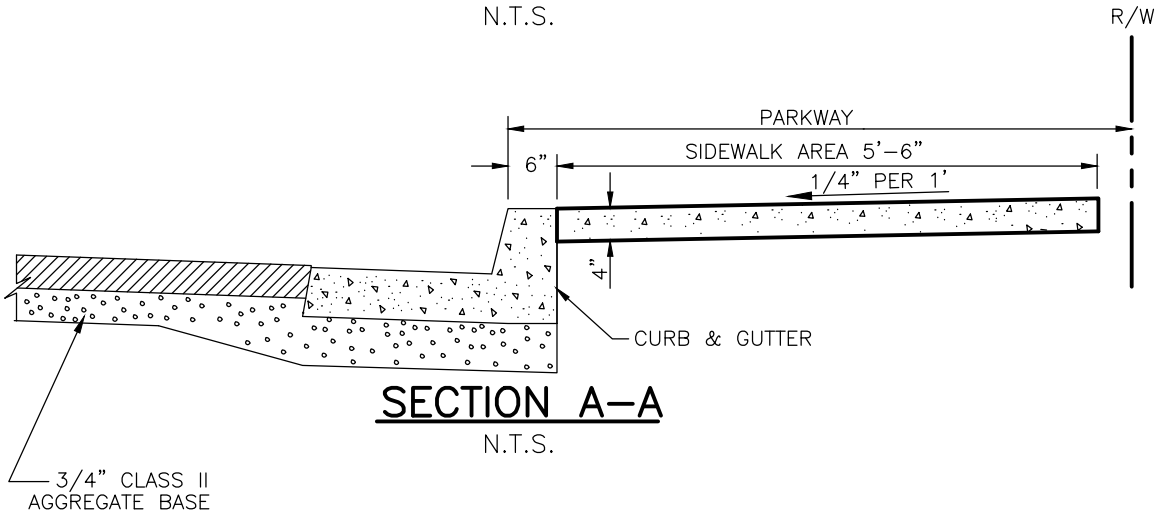
STD. PLAN NUMBER

B-104



PLAN VIEW OF SIDEWALK

N.T.S.



SECTION A–A

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 CLASS 520–C–2500 AND 4" THICK.
5. 90% RELATIVE COMPACTION REQUIRED UNDER SIDEWALK.
6. COLORED ADDITIVES OR PATTERNED CONCRETE SHALL NOT BE USED IN PUBLIC R/W.

City of Garden Grove
California

RESIDENTIAL SIDEWALK

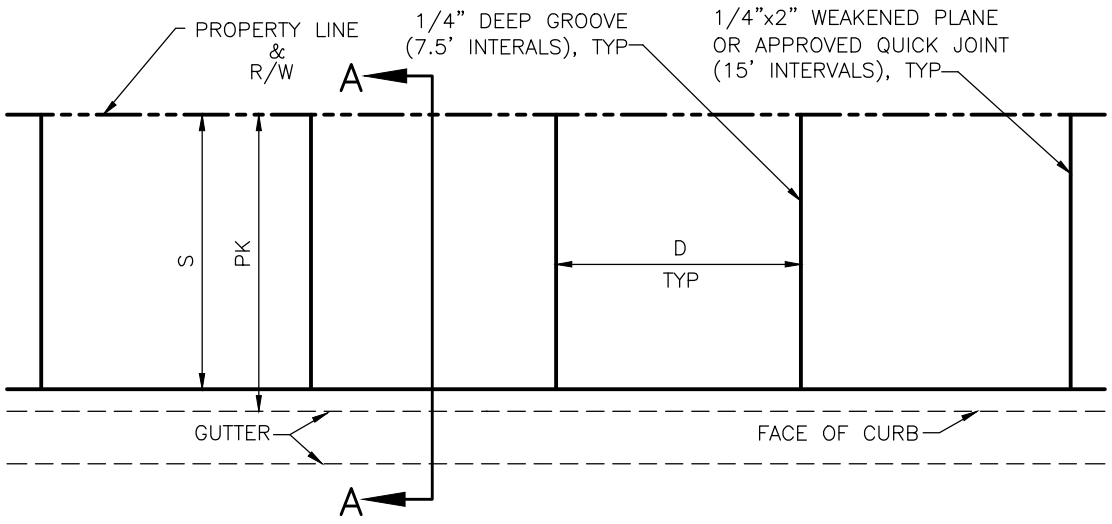
Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

REVISIONS	BY	DATE

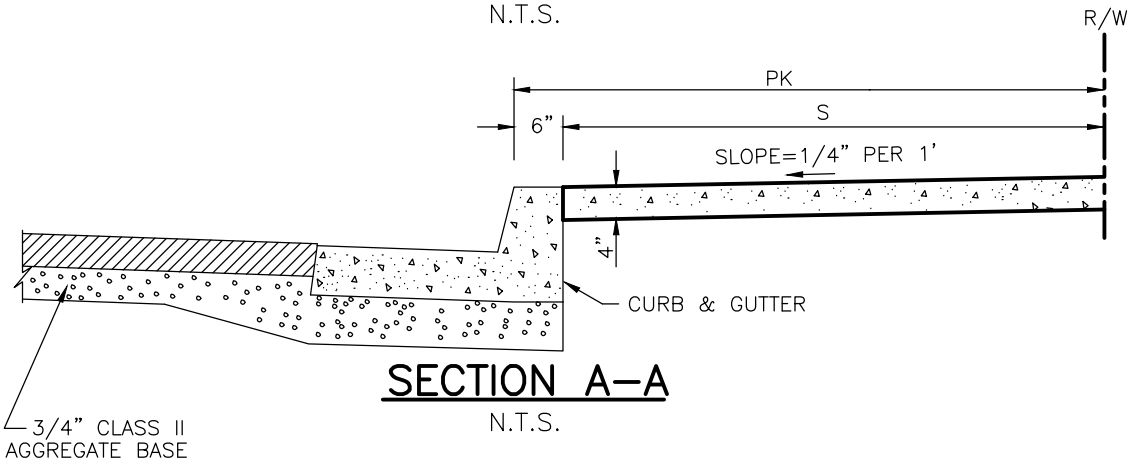
STD. PLAN NUMBER

B–105



PLAN VIEW OF PARKWAY

N.T.S.



SECTION A–A

N.T.S.

PK	S	D
7'	6.5'	7.5'
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:

1. 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.
2. 1/4"x2" APPROVED QUICK JOINTS FOR SIDEWALK SHALL BE PLACED TO COINCIDE WITH JOINTS OF THE CURB.
3. REFER TO STD. PLAN B–305 FOR TRAFFIC CONTROL SIGN INSTALLATION.
4. ALL CONCRETE SHALL BE CLASS 520–C–2500 AND 4" THICK.
5. 90% RELATIVE COMPACTION REQUIRED UNDER SIDEWALK.
6. S MAY BE REDUCED TO 5' WITH ADEQUATE PROVISION FOR MAINTENANCE OF REMAINING PARKWAY.

City of
Garden Grove
California

COMMERCIAL AND ARTERIAL SIDEWALK

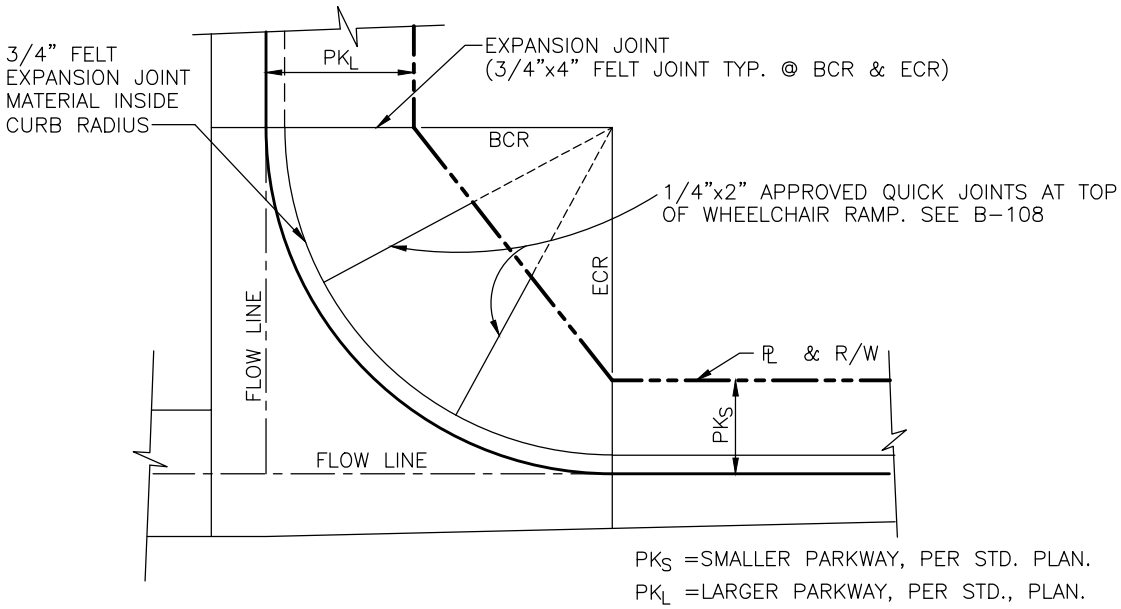
Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B–106



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 CLASS 520–C–2500 AND 4" THICK.
2. SEE STD. PLAN B–108 FOR WHEELCHAIR RAMPS.

City of Garden Grove California

SIDEWALK LANDINGS

Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B–107

REFER TO LATEST CALTRANS STANDARD PLAN NO. A88A AND A88B FOR APPROPRIATE ADA ACCESS RAMP DESIGN

YOU MAY VISIT : www.dot.ca.gov FOR INFORMATION

SPECIAL CONDITION RAMPS MUST BE DETAILED ON DESIGN PLANS AND BE IN FULL CONFORMANCE WITH LATEST EDITION OF DEPT. OR JUSTICE STANDARDS & TITLE 24.

GARDEN GROVE

City of Garden Grove California

CURB RETURN ADA ACCESS RAMP

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-108

CURVE DATA

CURB RADIUS = 50'

℄ RADIUS = 50'−PK_S

CURVE DATA

PROPERTY LINE

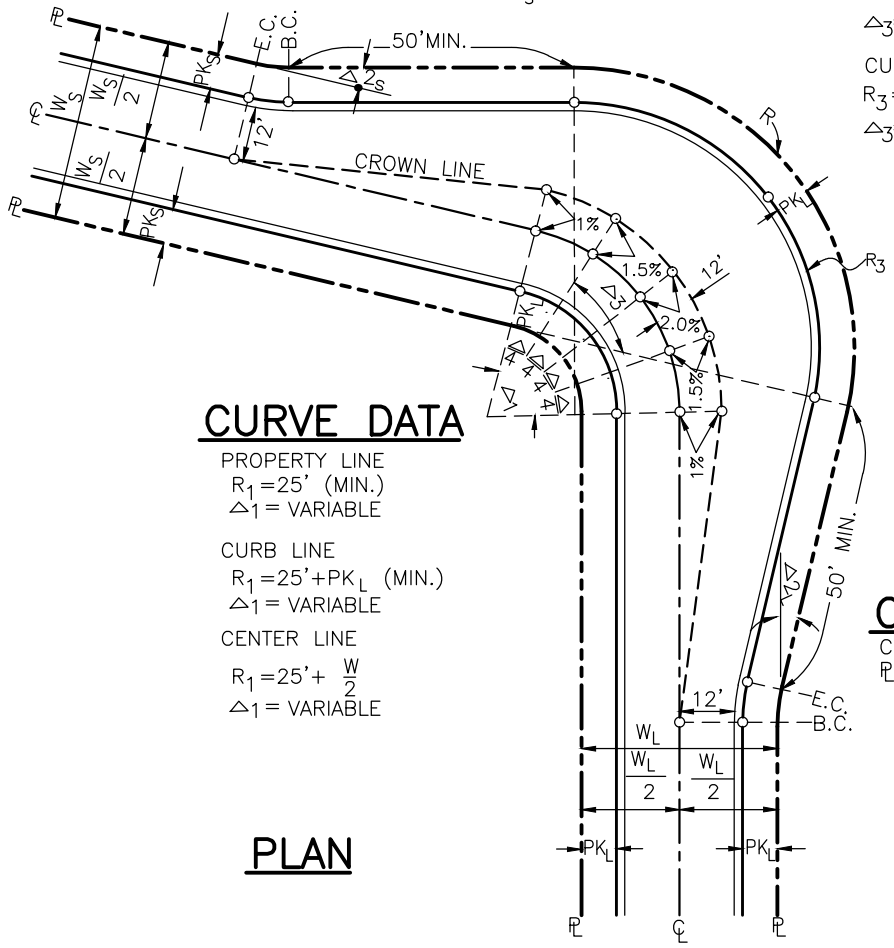
$R=W_L+10'$

$\triangle_3=\triangle_1+\triangle_{2S}+\triangle_{2L}$

CURB LINE

$R_3=W_L+10'-PK_L$

$\triangle_3=\triangle_1+\triangle_{2S}+\triangle_{2L}$



CURVE DATA

PROPERTY LINE

$R_1=25'$ (MIN.)

$\triangle_1$ = VARIABLE

CURB LINE

$R_1=25'+PK_L$ (MIN.)

$\triangle_1$ = VARIABLE

CENTER LINE

$R_1=25'+\frac{W}{2}$

$\triangle_1$ = VARIABLE

CURVE DATA

CURB RADIUS=50'

℄ RADIUS=50'−PK_L

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 AT POINTS INDICATED BY "o".

City of Garden Grove California

GARDEN GROVE

STANDARD KNUCKLE

Approved _____ Date 12−8−15

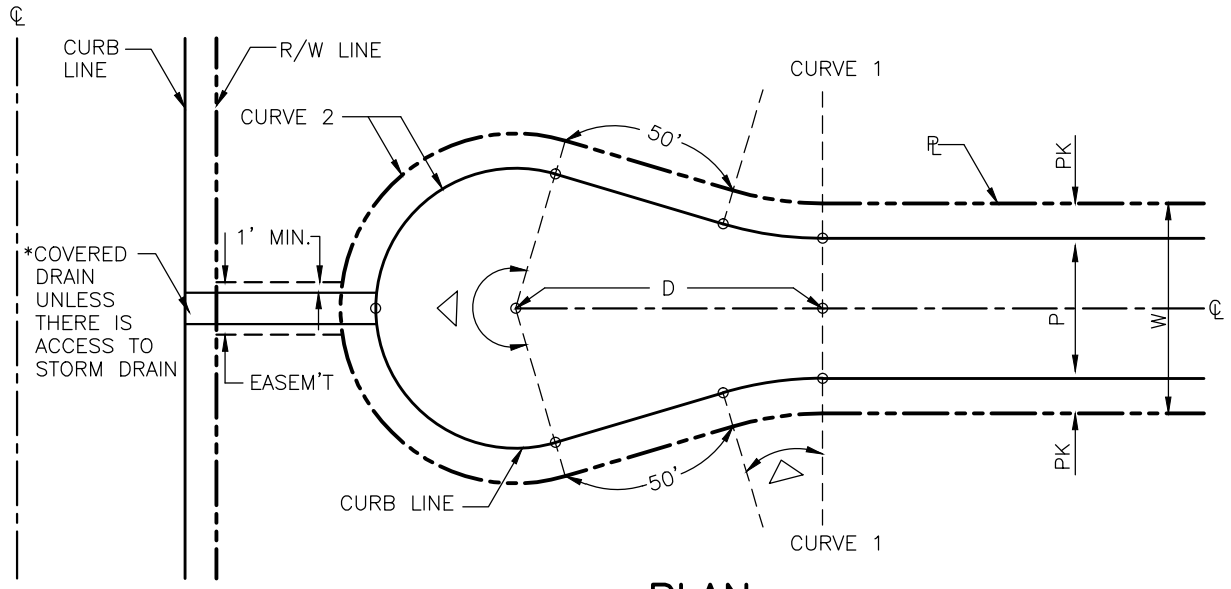
City Engineer R.C.E. 52125 Exp.12−31−16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B−109

ELEVATIONS ARE REQUIRED AT POINTS INDICATED BY "o".



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	
				CURB	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 PER CITY STD. PLAN NO. B-209 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. EASEMENTS MUST SPECIFY FOR DRAINAGE AND MAINTENANCE ACCESS.

GARDEN GROVE

City of Garden Grove California

CONCENTRIC CUL-DE-SAC

Approved _____ Date 12-8-15

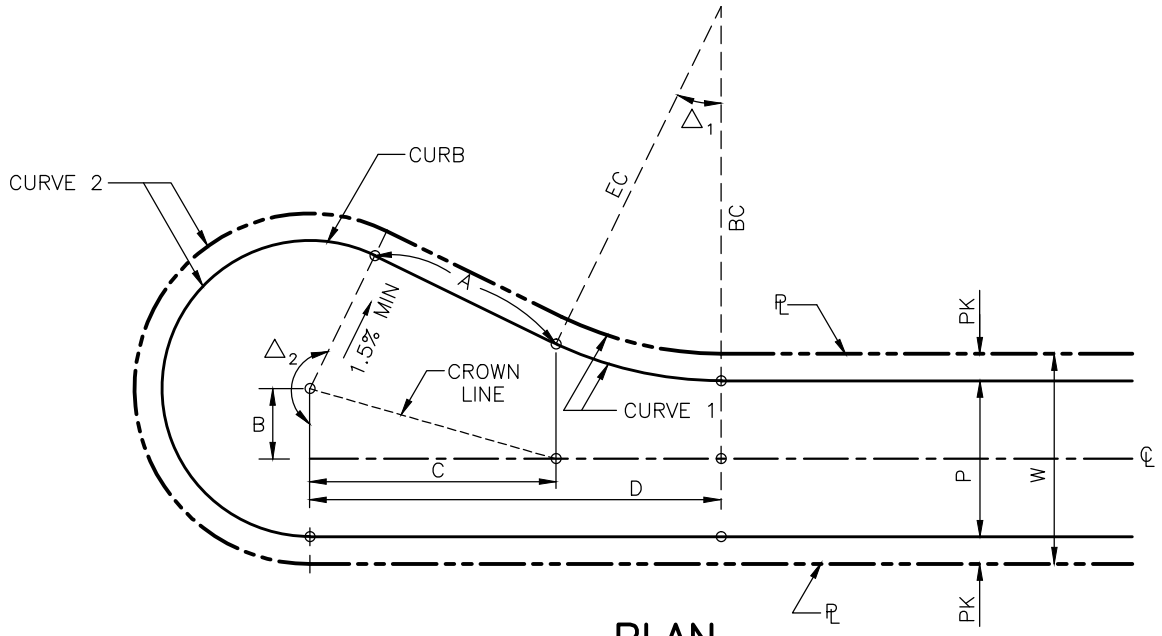
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-110

ELEVATIONS ARE REQUIRED AT POINTS INDICATED BY "o".



PLAN

CURVE 1									
W	P	PK	$\triangle_1$	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	$\triangle_2$	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

GARDEN GROVE

OFFSET CUL-DE-SAC

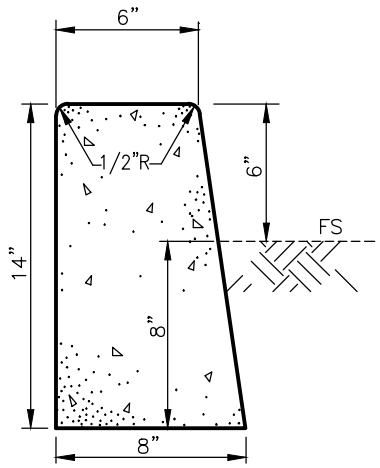
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

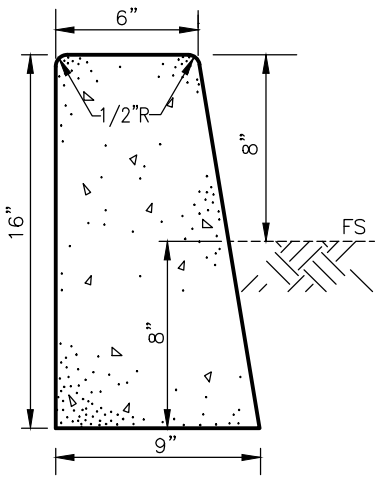
REVISIONS	BY	DATE

STD. PLAN NUMBER

B-111



A–6*



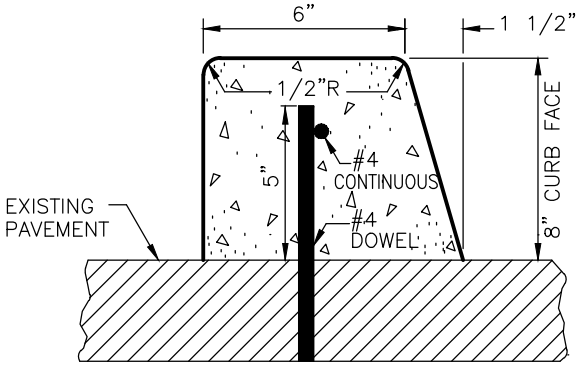
A–8

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 520–C–2500.
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 A–6 CURB SHALL NOT TO BE USED IN THE PUBLIC RIGHT–OF–WAY WITHOUT APPROVAL OF CITY ENGINEER.

5. 95% RELATIVE COMPACTION REQUIRED IN UPPER 6" OF SUBGRADE.



B–8
N.T.S.

NOTES:

1. TYPE B SHALL BE USED FOR REPLACEMENT–IN–KIND ONLY – NOT FOR NEW CONSTRUCTION AND SHALL NOT BE USED TO REPLACE MEDIAN NOSES UP TO 10' FROM NOSE.
2. BOND CURB TO PAVEMENT SURFACE WITH APPROVED ADHESIVE. ADHESIVE SHALL COVER ENTIRE BASE AREA OF CURB.
3. CONCRETE PER LIN. FT. = 0.0138 C.Y.
4. CONCRETE SHALL BE CLASS 520–C–2500.
5. 1/4" x 2" WEAKENED PLANE JOINTS SHALL BE PLACED AT 15' INTERVALS.
6. INSTALL DOWELS AT 6'–0" ON CENTER. EMBED INTO PAVEMENT MIN. OF 6".

City of Garden Grove California

CONCRETE CURB ONLY TYPE "A" & "B"

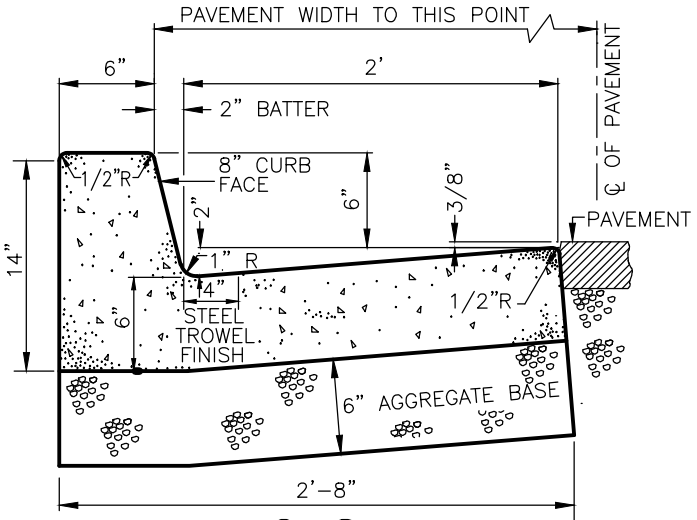
Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

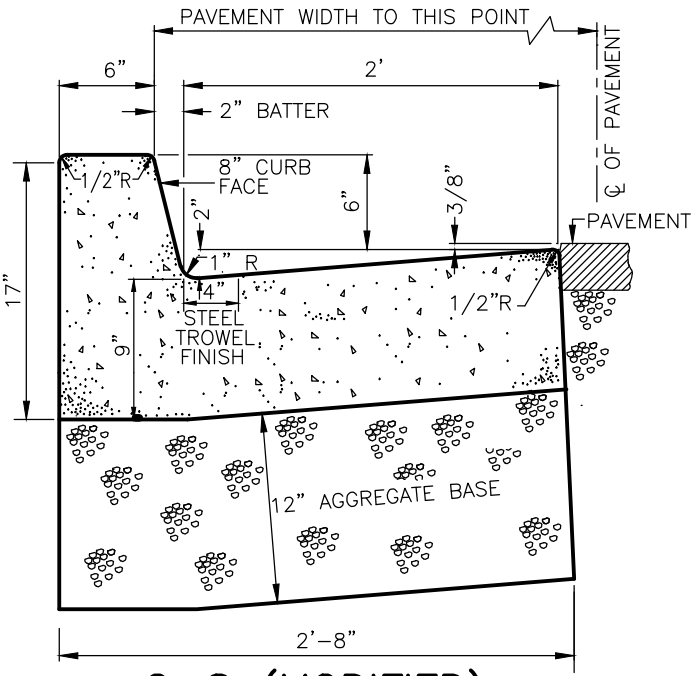
REVISIONS	BY	DATE

STD. PLAN NUMBER

B–112



C-8



C-8 (MODIFIED)

NOTES:

1. CONCRETE PER LIN. FT. = 0.0645 C.Y. FOR TYPE C-8 AND 0.0892 C.Y. FOR TYPE C-8 (MODIFIED).
2. CONCRETE SHALL BE CLASS 520-C-2500 FOR TYPE C-8 AND 660-CW-4000 FOR TYPE C-8 (MODIFIED).
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".
5. 95% RELATIVE COMPACTION REQUIRED FOR FULL DEPTH OF AGGREGATE BASE.

GARDEN GROVE

City of Garden Grove California

CONCRETE CURB & GUTTER TYPE "C"

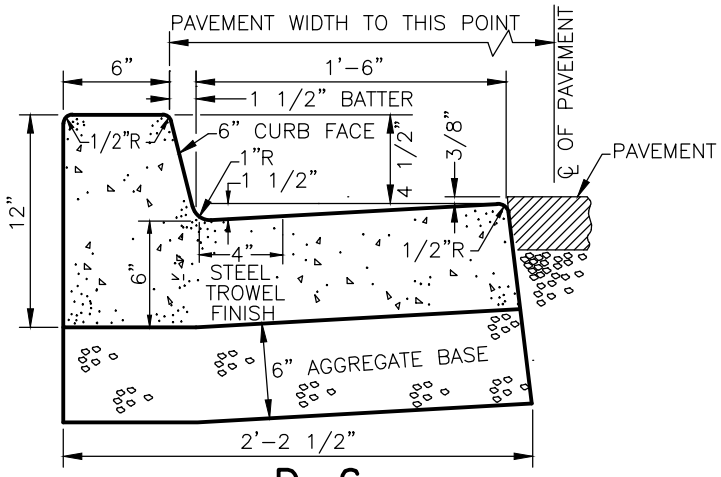
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-113



D-6

NOTES:

1. CONCRETE PER LIN. FT. = 0.0505 C.Y.
2. CONCRETE SHALL BE CLASS 520-C-2500.
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".
5. 95% RELATIVE COMPACTION REQUIRED FOR FULL DEPTH OF AGGREGATE BASE.

GARDEN GROVE

City of Garden Grove California

CONCRETE CURB & GUTTER TYPE "D"

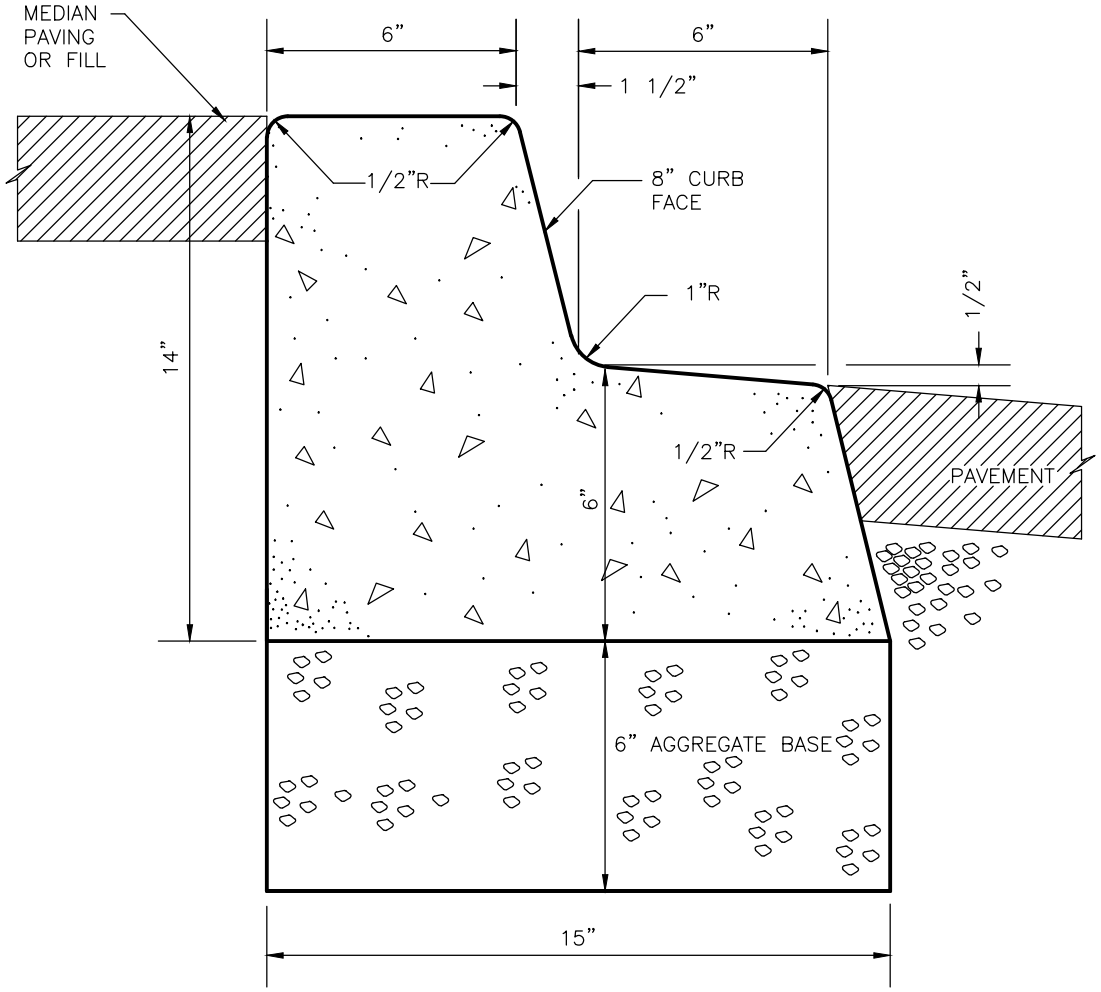
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-114



F–8

NOTES:

1. CONCRETE PER LIN. FT. = .032 C.Y.
2. CONCRETE SHALL BE CLASS 520–C–2500.
3. WEAKENED PLANE JOINT SHALL BE PLACED AT 15' INTERVALS. INSTALL 3/4" FELT JOINT 60' O.C. AND AT ALL CHANGES IN DIRECTION.
4. AGGREGATE BASE SHALL BE CLASS II 3/4".
5. 95% RELATIVE COMPACTION REQUIRED IN UPPER 6" OF SUBGRADE.

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"

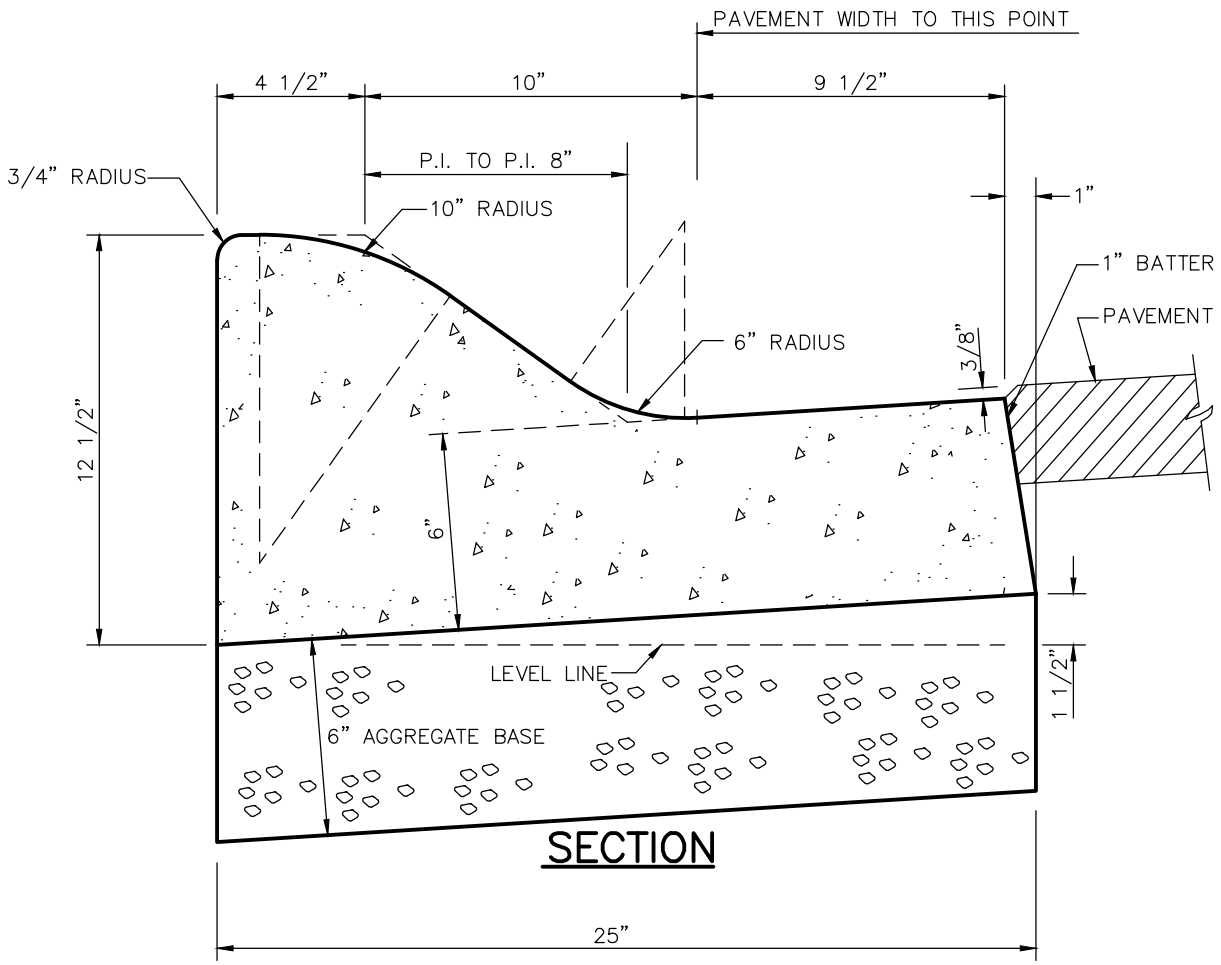
Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B–115



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 SHALL BE CLASS 520–C–2500.
4. AGGREGATE BASE SHALL BE CLASS II 3/4".
5. 95% RELATIVE COMPACTION REQUIRED IN UPPER 6" OF SUBGRADE.

City of Garden Grove California

GARDEN GROVE

ROLLED CURB & GUTTER

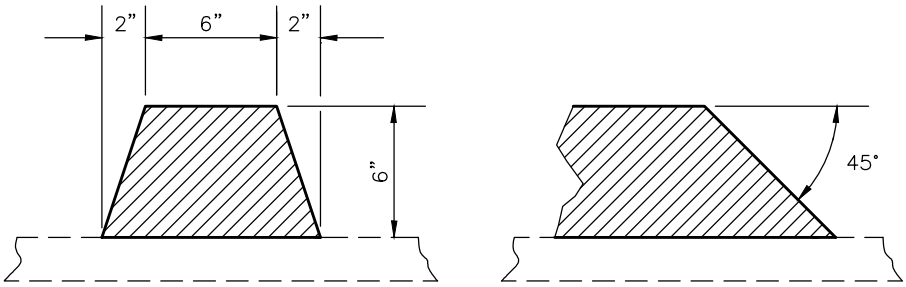
Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

REVISIONS	BY	DATE

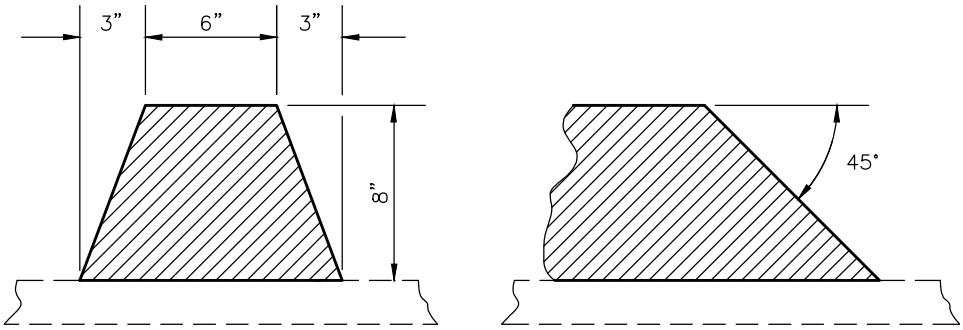
STD. PLAN NUMBER

B–116



SECTION END SIDE VIEW

6" A.C. BERM



SECTION END SIDE VIEW

8" A.C. BERM

City of Garden Grove California

GARDEN GROVE

A.C. BERM

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

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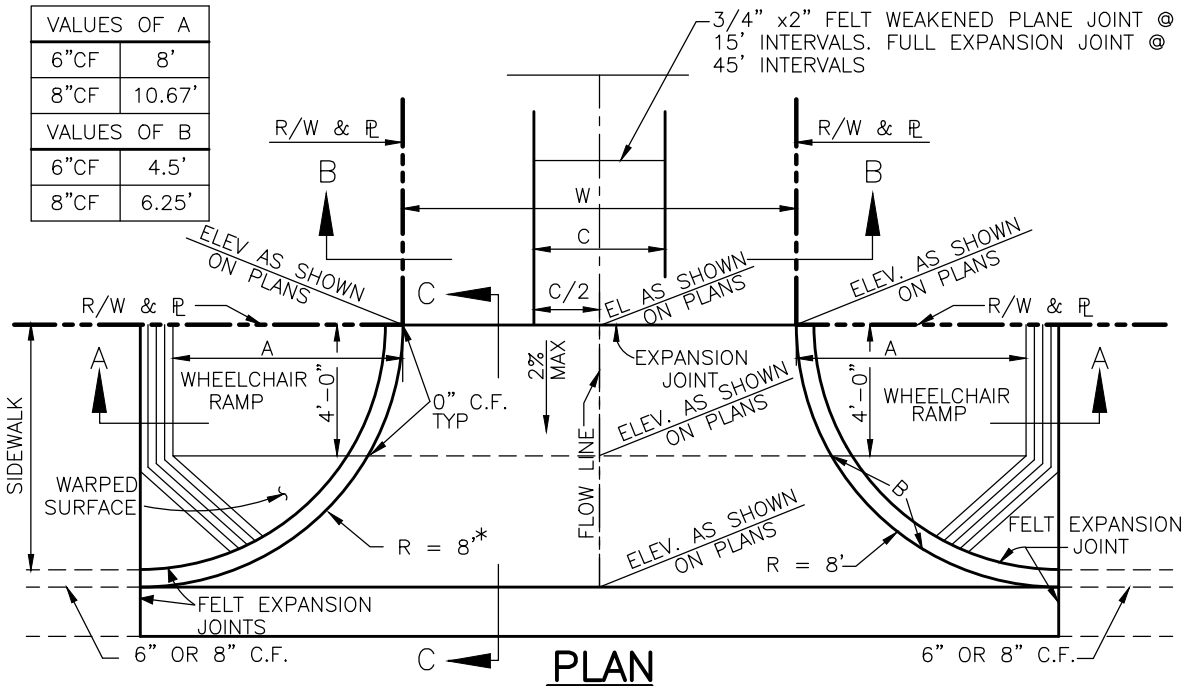
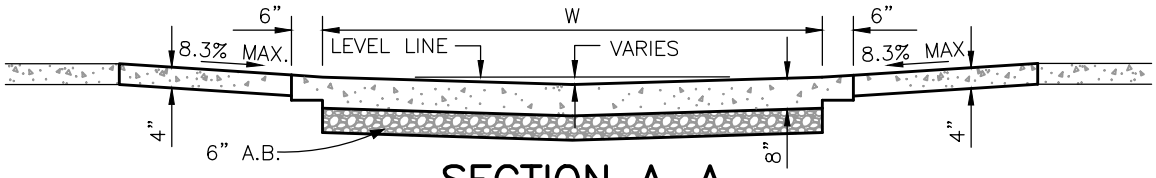
B-117

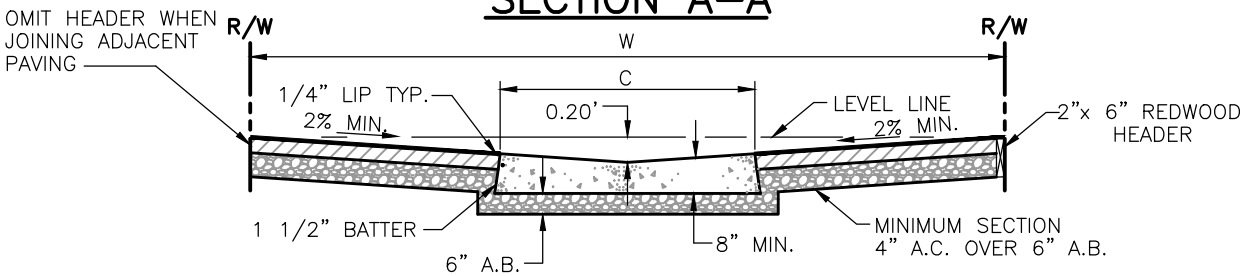
VALUES OF A	
6"CF	8'
8"CF	10.67'
VALUES OF B	
6"CF	4.5'
8"CF	6.25'



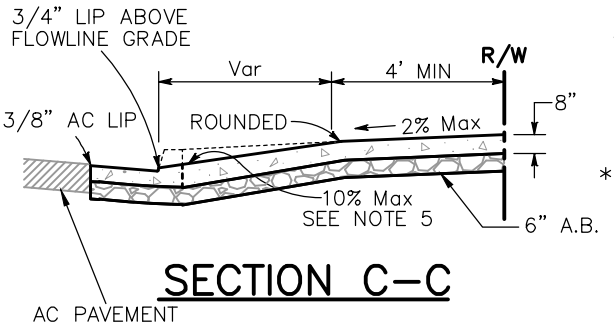
PLAN



SECTION A–A



SECTION B–B



SECTION C–C

NOTES:

1. C=4.0' WHERE ALLEY DOES NOT RECEIVE DRAINAGE FROM THE STREET. C=6.0' WHERE ALLEY DOES RECEIVE DRAINAGE FROM THE STREET.
2. W=R/W OR P/L WIDTH. (20' MIN.)
3. ALL CONCRETE SHALL BE 520–C–2500.
*4. 8' MIN. RADIUS. USE RADIUS EQUAL TO PARKWAY WIDTH IF PARKWAY WIDTH IS LARGER THAN 8'.
5. DIFFERENCE IN SLOPE OF THE ALLEY RAMP AND THE SLOPE OF A LINE BETWEEN THE GUTTER AND A POINT ON THE ROADWAY 5' FROM GUTTER LINE SHALL NOT EXCEED 15%. REDUCE ALLEY RAMP SLOPE, NOT GUTTER SLOPE, WHERE REQUIRED.

City of Garden Grove California

ALLEY AND ALLEY APRON

Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

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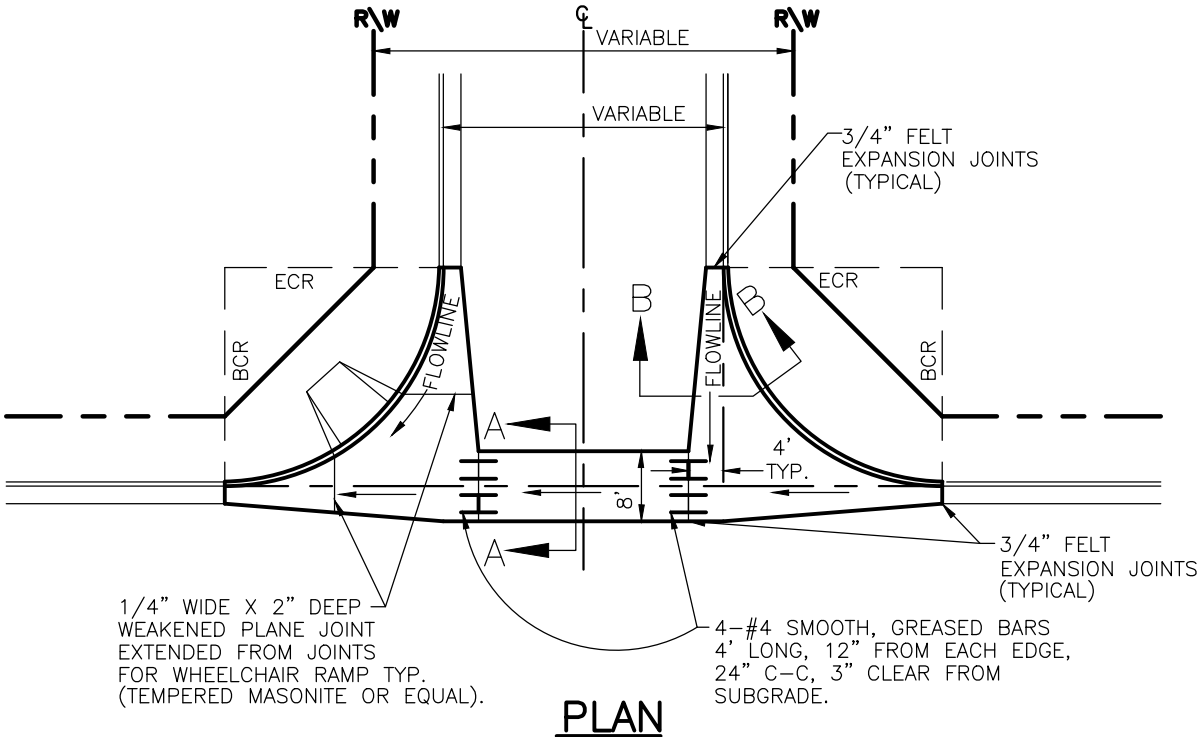
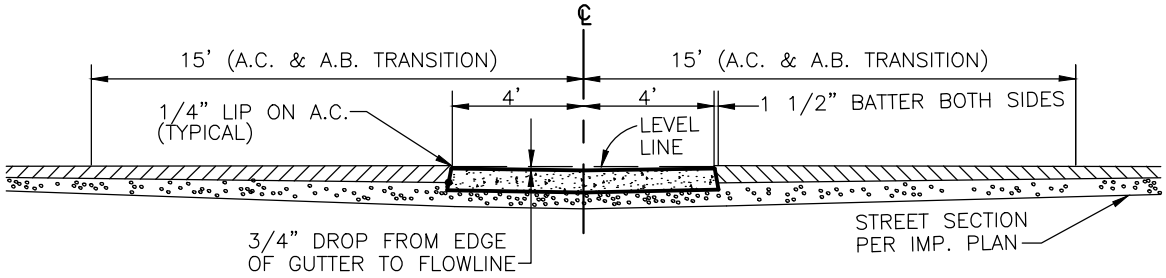
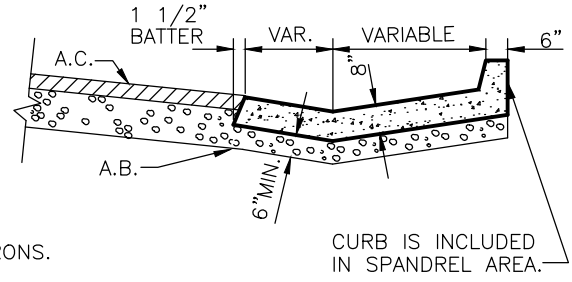
B–118



PLAN



SECTION A-A



SECTION B-B

NOTES:

1. ALL CONCRETE SHALL BE CLASS 560-C-3250.
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.

City of Garden Grove California

GARDEN GROVE

CROSS GUTTER

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

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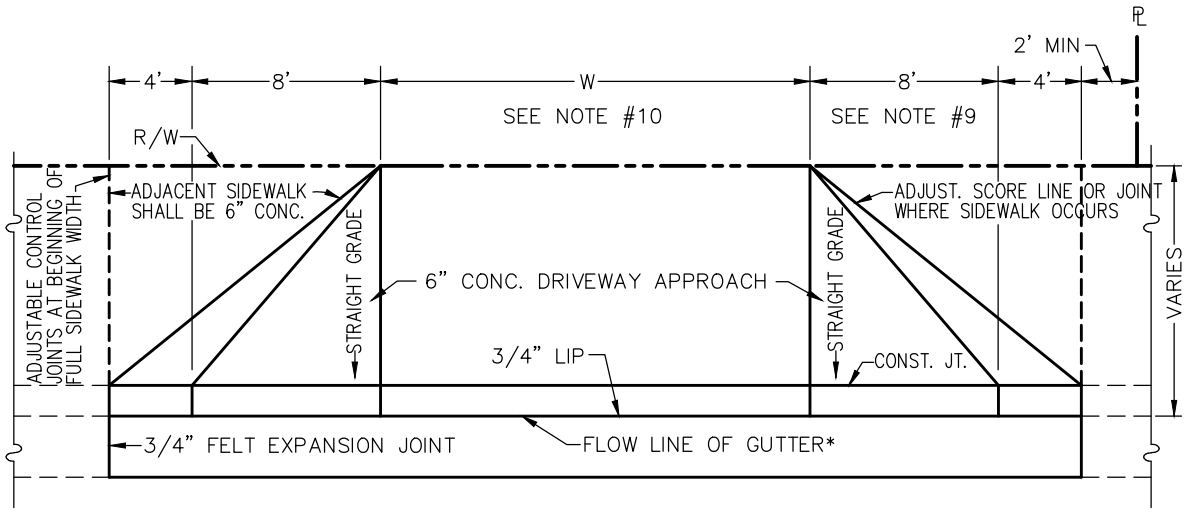
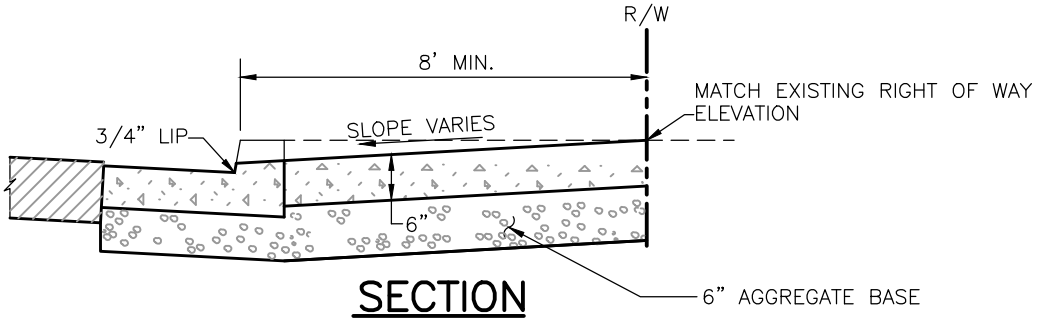
B-119



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

PLAN – OPTION #1

N.T.S.



SECTION

N.T.S.

NOTES:

1. SIDEWALK AND RAMP THICKNESS SHALL BE 6"(MIN.). P.C.C. AND SHALL BE CONCRETE CLASS 560–C–3250.
2. TWO FEET (MIN.) OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAY AND EXTENDED SIDE PROPERTY LINE.
3. A MINIMUM OF 22' OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAYS SERVING THE SAME PARCEL.
4. COLORED ADDITIVES OR PATTERNED CONCRETE SHALL NOT BE USED IN PUBLIC R/W.
5. INSTALL 3/4"x2" FELT JOINTS AT 15' O.C. AND 3/4"x6" FELT JOINTS AT TOP OF X'S.
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 & GUTTER SEPARATELY FROM DRIVEWAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
9. WIDTH MAY BE REDUCED UNDER EXTENUATING CIRCUMSTANCES.
10. FOR RESIDENTIAL AREAS, W=18' MIN AND 30' MAX. FOR COMMERCIAL INDUSTRIAL & MULTI RESIDENTIAL W=30' OR AS APPROVED BY THE CITY TRAFFIC ENGINEER.

City of Garden Grove California

GARDEN GROVE

ARTERIAL STREET DRIVEWAY OPTION #1

Approved _____ Date 12–8–15

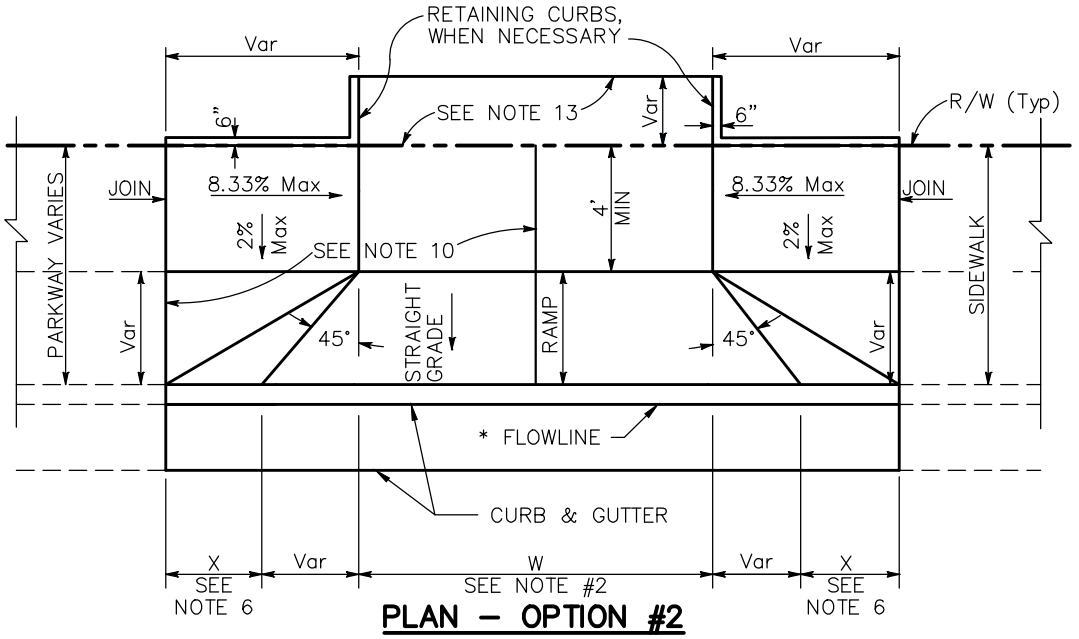
City Engineer R.C.E. 52125 Exp.12–31–16

REVISIONS	BY	DATE

STD. PLAN NUMBER

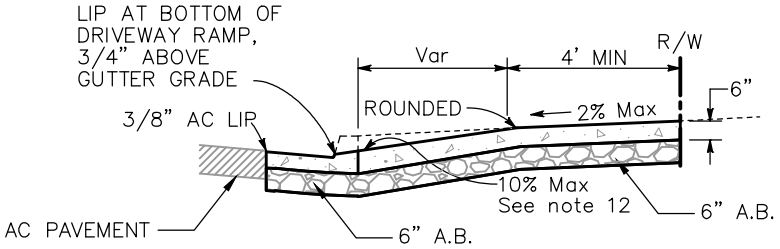
B–120

SHEET 1 OF 4



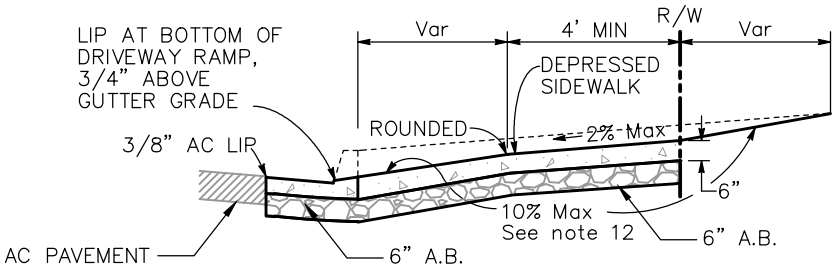
PLAN – OPTION #2

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



CASE A

Typical driveway, sidewalk not depressed



CASE B

Driveway with depressed sidewalk

SECTIONS

NOTE: FOR GENERAL NOTES SEE SHEET 4.

City of Garden Grove California

ARTERIAL STREET DRIVEWAY OPTION #2

Approved _____ Date 12-8-15

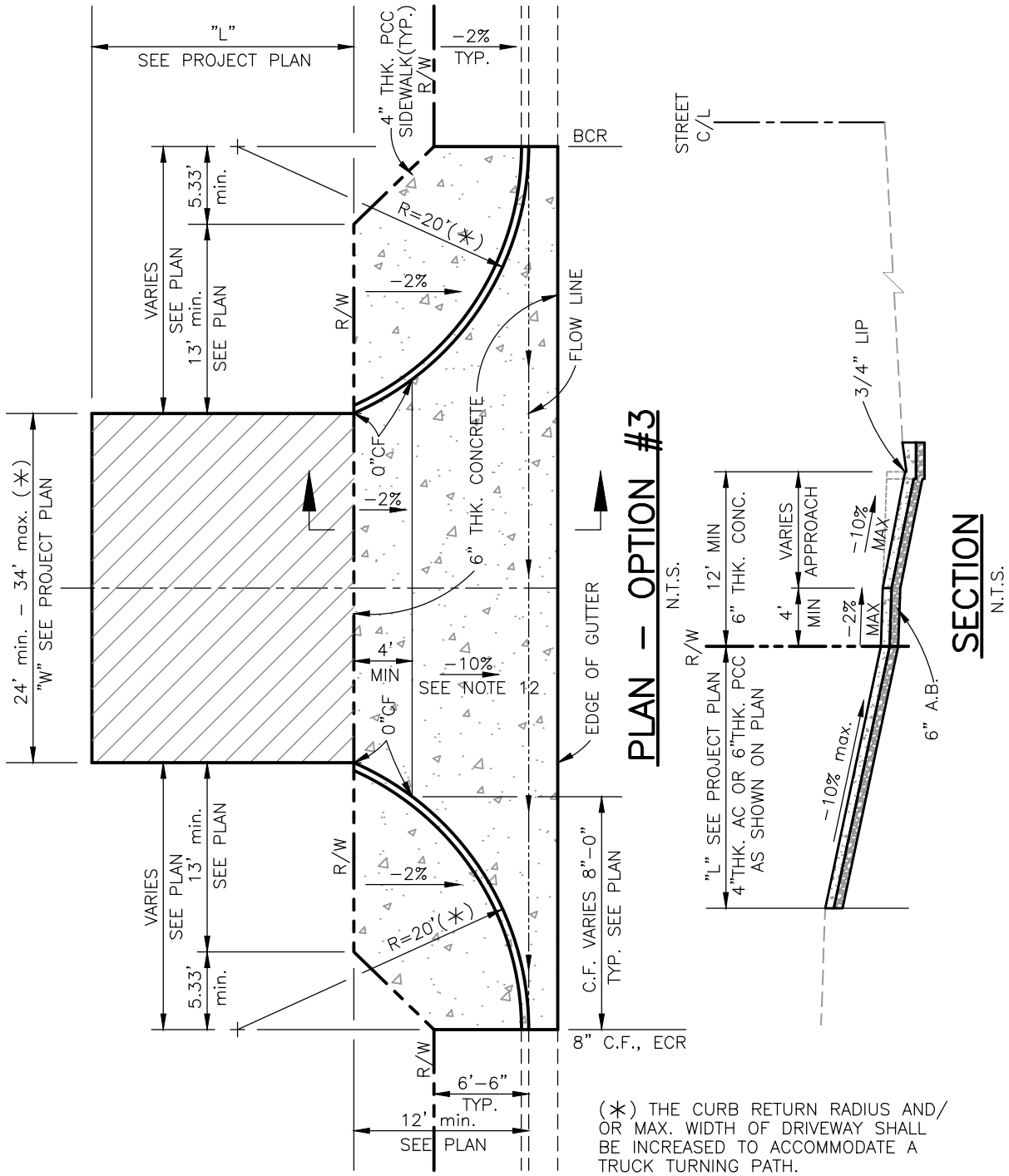
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-120

SHEET 2 OF 4



(*) THE CURB RETURN RADIUS AND/ OR MAX. WIDTH OF DRIVEWAY SHALL BE INCREASED TO ACCOMMODATE A TRUCK TURNING PATH.

NOTE : FOR GENERAL NOTES SEE SHEET 4. REPLACE NOTE #8 WITH – FOR NEW DRIVEWAY LOCATIONS, REMOVE AND RECONSTRUCT CURB MONOLITHICALLY WITH DRIVEWAY. CITY ENGINEER'S APPROVAL IS REQUIRED PRIOR TO SAWCUTTING EXISTING PUBLIC IMPROVEMENTS.

City of Garden Grove California

GARDEN GROVE

ARTERIAL STREET DRIVEWAY OPTION #3

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-120

SHEET 3 OF 4

NOTES:

1. SEE CITY STANDARD PLAN B–121 FOR NON–ARTERIAL MULTI–RESIDENTIAL & COMMERCIAL DRIVEWAYS AND B–122 FOR LOCAL STREET DRIVEWAYS.
2. W=18' MIN, 30' MAX FOR RESIDENTIAL AREAS, AND W=30' MIN FOR COMMERCIAL INDUSTRIAL & MULTI–FAMILY RESIDENTIAL AREAS OR AS APPROVED BY THE CITY TRAFFIC ENGINEER.
3. SIDEWALK AND RAMP THICKNESS SHALL BE 6"(MIN.). P.C.C. AND SHALL BE CONCRETE CLASS 560–C–3250.
4. TWO FEET (MIN.) OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAY AND EXTENDED SIDE PROPERTY LINE.
5. A MINIMUM OF 22' OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAYS SERVING THE SAME PARCEL.
6. X=3' FOR 6" CURB FACE AND X=4' FOR 8" CURB FACE. CURB HEIGHTS OVER 8" SHALL USE A 4:1 SLOPE. SPECIAL CONDITION FOR X SHALL BE MADE WHEN SIDEWALK IS LOCATED WHERE WHEELCHAIRS MAY TRAVERSE THE SURFACE. SLOPES SHALL NOT EXCEED 8.33% AND CROSS SLOPE FOR DRIVEWAY RAMP SHALL NOT EXCEED 2%.
7. 95% RELATIVE COMPACTION REQUIRED IN UPPER 6" OF SUBGRADE.
8. FOR NEW DRIVEWAY LOCATIONS REMOVE AND RECONSTRUCT CURB & GUTTER SEPARATELY FROM DRIVEWAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
9. NO HORIZONTAL CURB CUTS ALLOWED.
10. INSTALL 3/4"x2" FELT JOINTS AT 15' O.C. AND 3/4"x6" FELT JOINTS AT TOP OF X'S.
11. COLORED ADDITIVES OR PATTERNED CONCRETE SHALL NOT BE USED IN PUBLIC R/W.
12. DIFFERENCE IN SLOPE OF THE DRIVEWAY RAMP AND THE SLOPE OF A LINE BETWEEN THE GUTTER AND A POINT ON THE ROADWAY 5' FROM GUTTER LINE SHALL NOT EXCEED 15%. REDUCE DRIVEWAY RAMP SLOPE, NOT GUTTER SLOPE, WHERE REQUIRED.
13. RETAINING CURBS AND ADJUSTMENT OF DRIVEWAY GRADES MAY BE NECESSARY FOR NARROW SIDEWALKS OR CURB HEIGHTS IN EXCESS OF 6".
14. AGGREGATE BASE SHALL BE CLASS II 3/4".

GARDEN GROVE

City of Garden Grove California

ARTERIAL STREET DRIVEWAY OPTION #2 & #3

Approved _____ Date 12–8–15

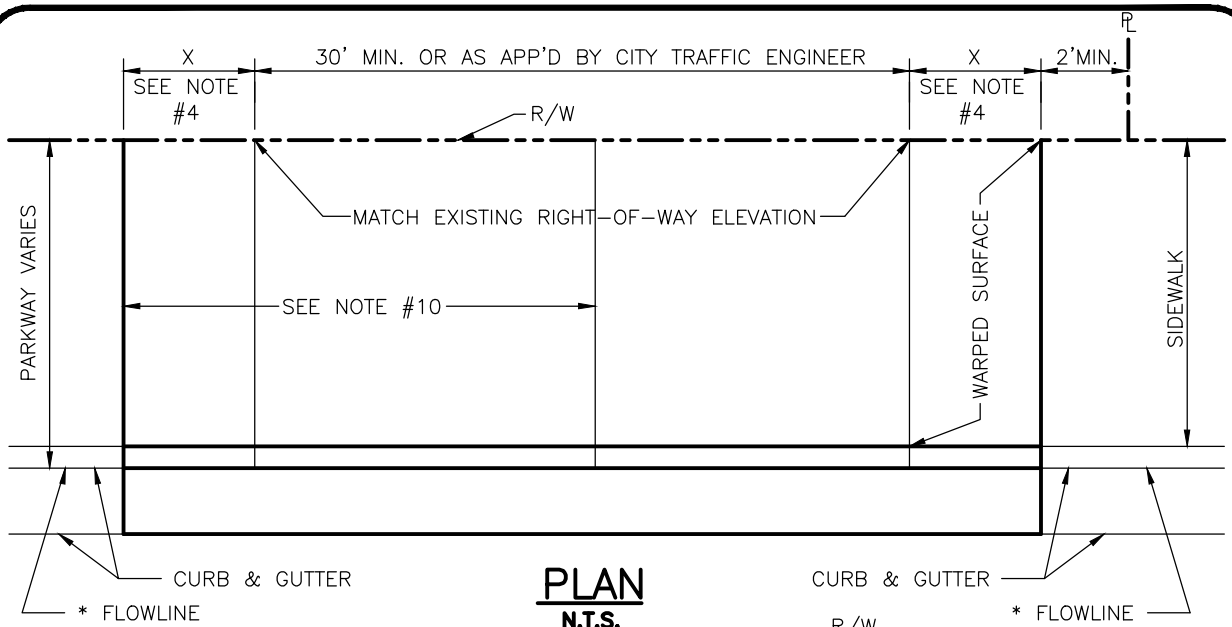
City Engineer R.C.E. 52125 Exp.12–31–16

REVISIONS	BY	DATE

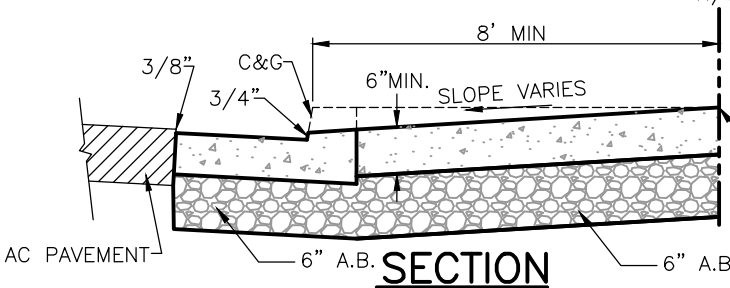
STD. PLAN NUMBER

B–120

SHEET 4 OF 4



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. SEE CITY STANDARD PLAN B-120 FOR COMMERCIAL DRIVEWAYS ON ARTERIAL STREETS.
2. ALL CONCRETE SHALL BE CLASS 560-C-3250. INSPECTOR'S APPROVAL IS REQUIRED PRIOR TO ANY SAWCUT, .
3. APPROACH SHALL BE 6" MINIMUM THICKNESS.
4. X=3' FOR 6" CF, X=4' FOR 8" CF.
5. TWO FEET (MIN.) OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAY AND EXTENDED SIDE PROPERTY LINE.
6. A MINIMUM OF 22' OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAYS SERVING THE SAME PARCEL.
7. 95% RELATIVE COMPACTION REQUIRED IN UPPER 6" OF SUBGRADE.
8. FOR NEW DRIVEWAY LOCATIONS REMOVE AND RECONSTRUCT CURB & GUTTER SEPARATELY FROM DRIVEWAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
9. NO HORIZONTAL CURB CUTS ALLOWED.
10. INSTALL 3/4"x2" FELT JOINTS AT 15' O.C. AND 3/4"x6" FELT JOINTS AT TOP OF X'S.
11. COLORED ADDITIVES OR PATTERNED CONCRETE SHALL NOT BE USED IN PUBLIC R/W.

City of Garden Grove California

NON-ARTERIAL MULTI-RESIDENTIAL & COMMERCIAL DRIVEWAY

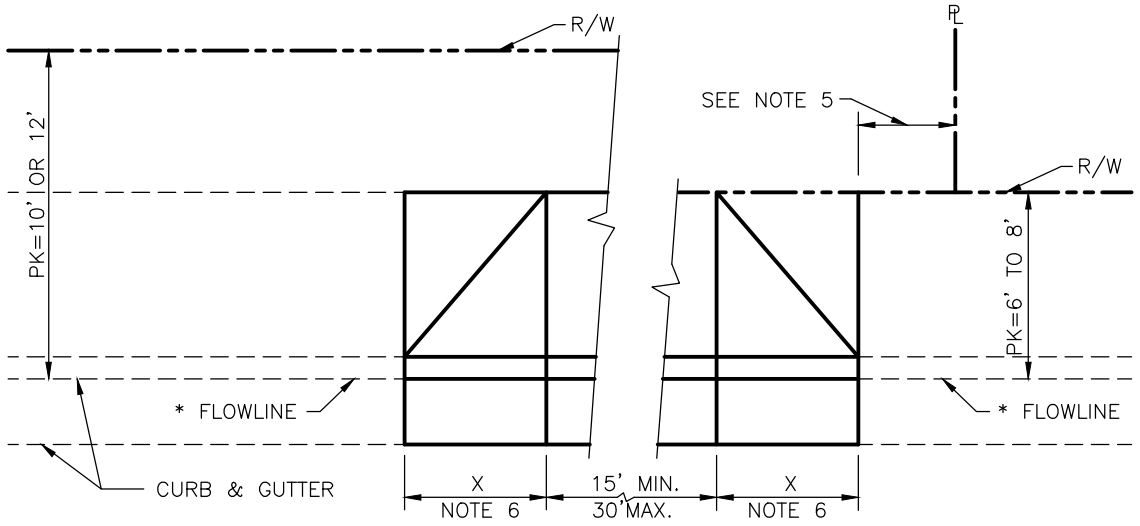
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-121

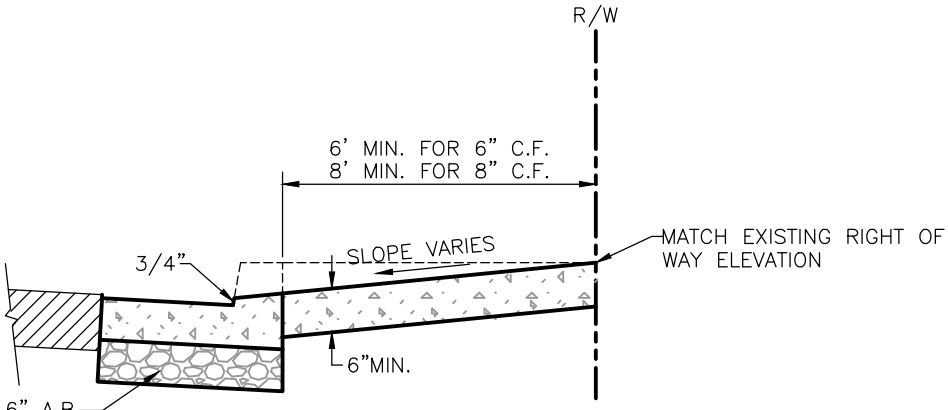


SEE NOTE 4 IF EXISTING CURB & GUTTER IS TO BE REMOVED FOR CONSTRUCTION OF NEW DRIVEWAY

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

PLAN – OPTION #1

N.T.S.



DRIVEWAY SECTION

SEE SHEET 2 FOR CONSTRUCTION NOTES.

City of Garden Grove California

LOCAL STREET DRIVEWAY OPTION #1

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-122

SHEET 1 OF 4

NOTES:

1. INSPECTOR'S APPROVAL IS REQUIRED PRIOR TO SAWCUTTING EXISTING PUBLIC IMPROVEMENTS.
2. ALL CONCRETE SHALL BE CLASS 520-C-2500.
3. APPROACH AND GUTTER SHALL BE 6" MINIMUM THICKNESS.
4. 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.
5. TWO FEET (MIN) OF FULL HEIGHT CURB SHALL BE REQUIRED BETWEEN DRIVEWAY AND SIDE PROPERTY LINE EXTENDED.
6. X=3' FOR 6" CURB FACE.
   X=4' FOR 8" CURB FACE.
7. R.C. 95% MIN. REQUIRED IN UPPER 6" SUBGRADE.
8. A MINIMUM OF 22' OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAYS SERVING THE SAME PARCEL.
9. HORIZONTAL CURB CUTS MAY BE ALLOWED ON A LIMITED BASIS AS DETERMINED BY THE CITY ENGINEER.
10. INSTALL 3/4"x6" FELT JOINT AT TOP OF X AND 3/4"x2" FELT JOINT AT 15' O.C.
11. COLORED ADDITIVES OR PATTERNED CONCRETE SHALL NOT BE USED IN PUBLIC R/W.

GARDEN GROVE

City of
Garden Grove
California

LOCAL STREET DRIVEWAY OPTION #1

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

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STD. PLAN NUMBER

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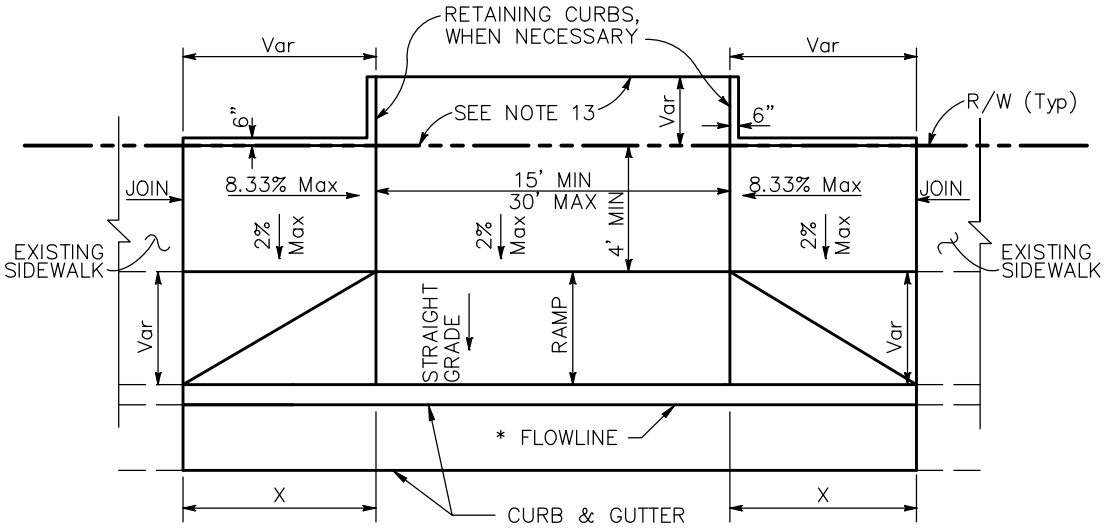
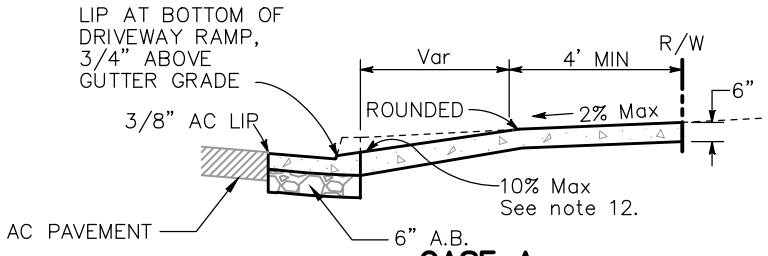


PLAN – OPTION #2

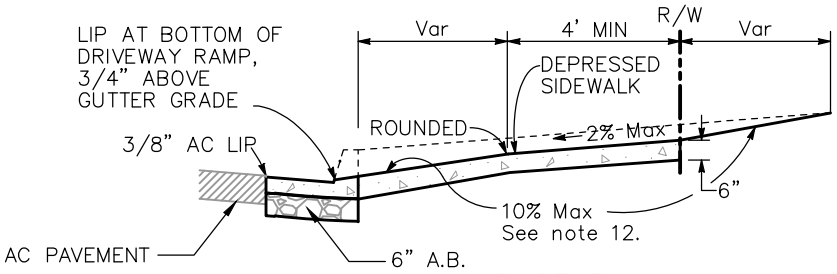
SEE NOTE 4 IF EXISTING CURB & GUTTER IS TO BE REMOVED FOR CONSTRUCTION OF NEW DRIVEWAY

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



CASE A

Typical driveway, sidewalk not depressed



CASE B

Driveway with depressed sidewalk

SECTIONS

SEE SHEET 4 FOR CONSTRUCTION NOTES.

City of Garden Grove California

LOCAL STREET DRIVEWAY OPTION #2

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-122

SHEET 3 OF 4

NOTES:

1. INSPECTOR'S APPROVAL IS REQUIRED PRIOR TO SAWCUTTING EXISTING PUBLIC IMPROVEMENTS.
2. ALL CONCRETE SHALL BE CLASS 520-C-2500.
3. APPROACH, SIDEWALK, AND GUTTER SHALL BE 6" MINIMUM THICKNESS.
4. 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.
5. TWO FEET (MIN) OF FULL HEIGHT CURB SHALL BE REQUIRED BETWEEN DRIVEWAY AND SIDE PROPERTY LINE EXTENDED.
6. X=3' FOR 6" CURB FACE AND X=4' FOR 8" CURB FACE. CURB HEIGHTS OVER 8" SHALL USE A 4:1 SLOPE. SPECIAL CONDITION FOR X SHALL BE MADE WHEN SIDEWALK IS LOCATED WHERE WHEELCHAIRS MAY TRAVERSE THE SURFACE. SLOPES SHALL NOT EXCEED 8.33% AND CROSS SLOPE FOR DRIVEWAY RAMP SHALL NOT EXCEED 2%.
7. R.C. 95% MIN. REQUIRED IN UPPER 6" SUBGRADE.
8. A MINIMUM OF 22' OF FULL HEIGHT CURB IS REQUIRED BETWEEN DRIVEWAYS SERVING THE SAME PARCEL.
9. HORIZONTAL CURB CUTS MAY BE ALLOWED ON A LIMITED BASIS AS DETERMINED BY THE CITY ENGINEER.
10. INSTALL 3/4"x6" FELT JOINT AT TOP OF X AND 3/4"x2" FELT JOINT AT 15' O.C.
11. COLORED ADDITIVES OR PATTERNED CONCRETE SHALL NOT BE USED IN PUBLIC R/W.
12. DIFFERENCE IN SLOPE OF THE DRIVEWAY RAMP AND THE SLOPE OF A LINE BETWEEN THE GUTTER AND A POINT ON THE ROADWAY 5' FROM GUTTER LINE SHALL NOT EXCEED 15%. REDUCE DRIVEWAY RAMP SLOPE, NOT GUTTER SLOPE, WHERE REQUIRED.
13. RETAINING CURBS AND ADJUSTMENT OF DRIVEWAY GRADES MAY BE NECESSARY FOR NARROW SIDEWALKS OR CURB HEIGHTS IN EXCESS OF 6".

GARDEN GROVE

City of Garden Grove California

LOCAL STREET DRIVEWAY OPTION #2

Approved _____ Date 12-8-15

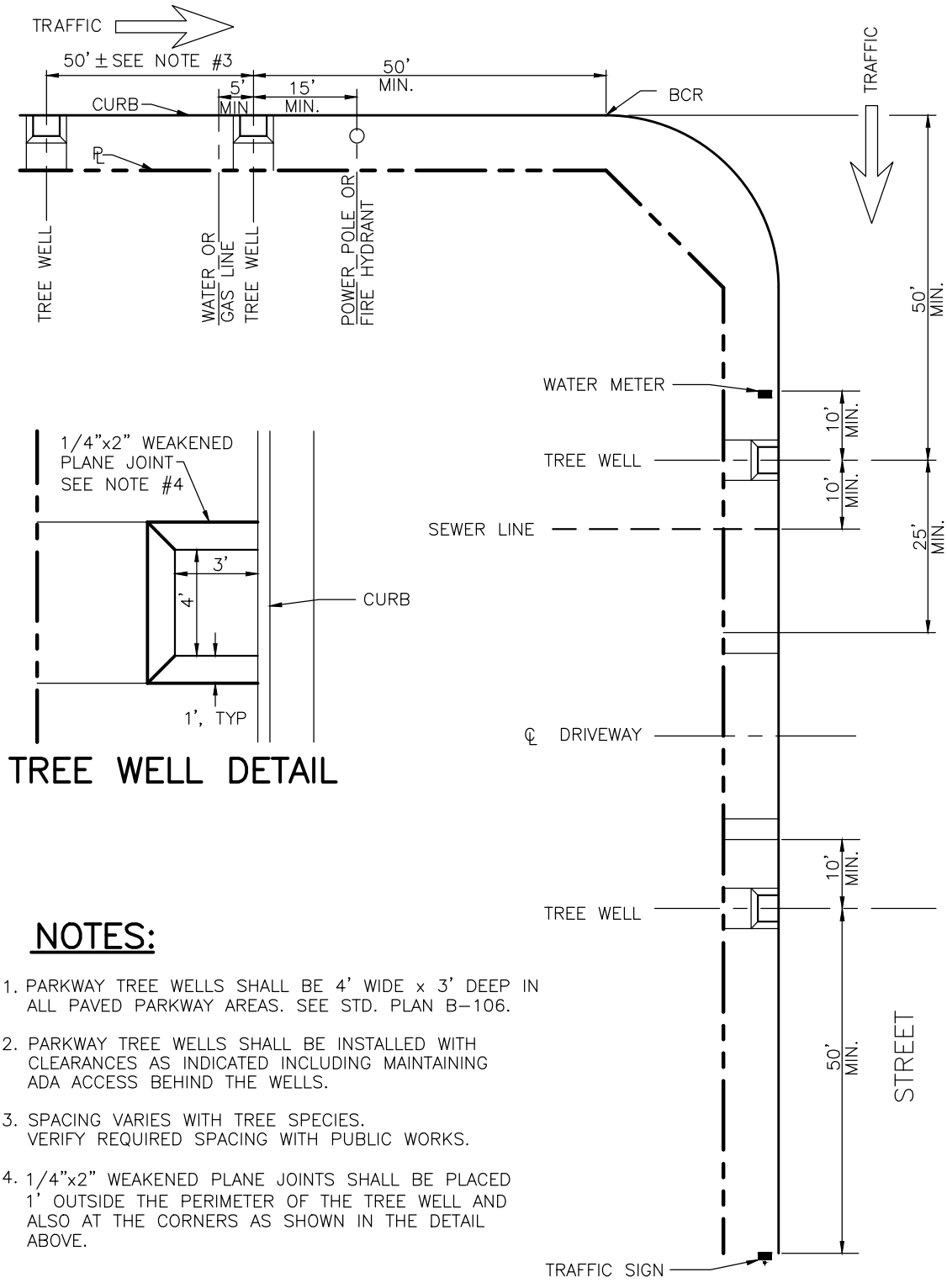
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-122

SHEET 4 OF 4



TREE WELL DETAIL

NOTES:

1. PARKWAY TREE WELLS SHALL BE 4' WIDE x 3' DEEP 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. SPACING VARIES WITH TREE SPECIES. VERIFY REQUIRED SPACING WITH PUBLIC WORKS.
4. 1/4"x2" WEAKENED PLANE JOINTS SHALL BE PLACED 1' OUTSIDE THE PERIMETER OF THE TREE WELL AND ALSO AT THE CORNERS AS SHOWN IN THE DETAIL ABOVE.

City of Garden Grove California

TYPICAL PARKWAY TREE WELL INSTALLATION

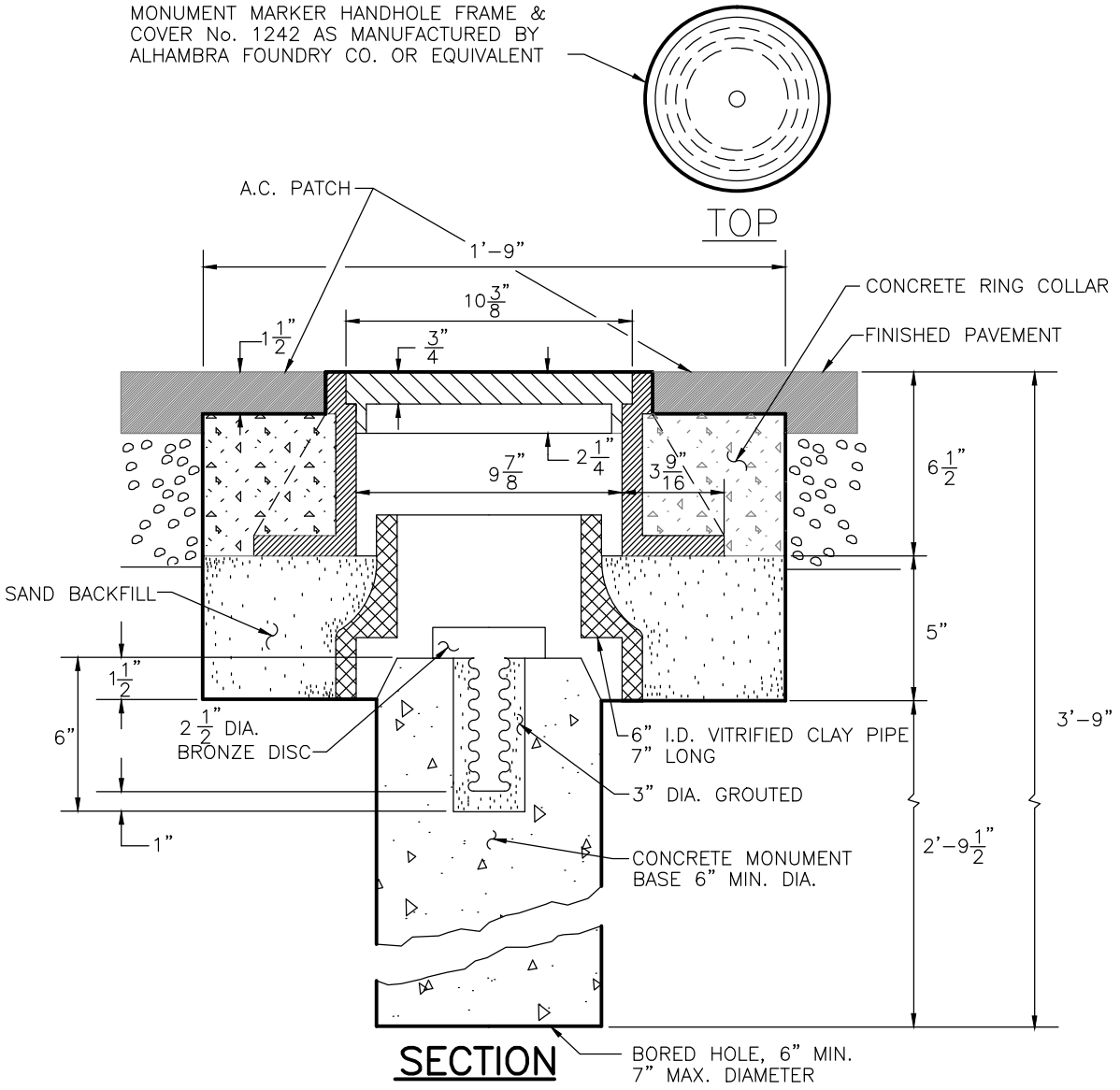
Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B–123



NOTES:

1. FRAME AND COVER TO BE ASPHALT TREATED BY FOUNDRY.
2. IF MARKER IS INSTALLED UNDER CONTRACT, LEAVE 3" DIA. HOLE, 6" DEEP IN EXACT CENTER PER TIES.
3. MONUMENT MARKER SHALL BE SET BY A PROFESSIONAL, LICENSED TO PRACTICE SURVEYING IN THE STATE OF CALIFORNIA.
4. ALL CONCRETE SHALL BE CLASS 520-C-2500.

City of Garden Grove California

SURVEY MONUMENT TYPE "A"

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-124

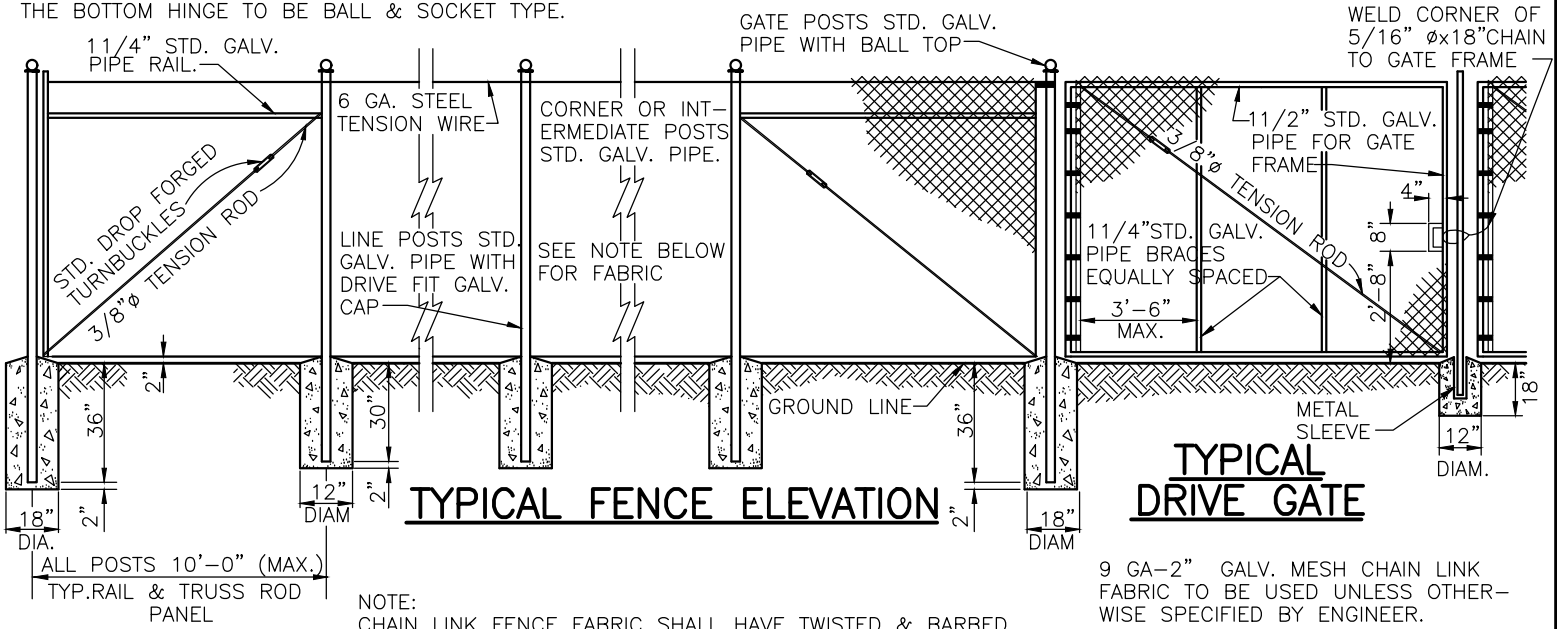
City of Garden Grove
California

CHAIN LINK FENCE DETAIL

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.
FOR 72" FENCE & OVER		
END , CORNER & INTERMEDIATE POSTS	2 1/2 IN.	5.79 LBS.
LINE POSTS	2 "	3.65 "
DRIVE GATE POSTS–SINGLE TO 6' OR DOUBLE TO 12' OPENINGS.	3 "	7.58 "
DRIVE GATE POSTS–SINGLE OVER 6' TO 13' OR DOUBLE OVER 12' TO 26' OPENINGS.	4 IN.	10.79 LBS.
FOR FENCE LESS THAN 72"		
END, CORNER & INTERMEDIATE POSTS	2 "	3.65 "
LINE POSTS	11/2 "	2.72 "
DRIVE GATE POSTS–SINGLE TO 6' OR DOUBLE TO 12' OPENINGS.	21/2 "	5.79 "
DRIVE GATE POSTS–SINGLE OVER 6' TO 13' OR DOUBLE OVER 12' TO 26' OPENINGS.	31/2 "	8.11 "

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 FENCE ELEVATION

TYPICAL DRIVE GATE

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.

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.

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".
FASTEN TO TOP RAILS & TENSION WIRES, AT INTERVALS OF APPROX. 18" WITH 12 GA. GALV. OR ALUM. TIE WIRES.

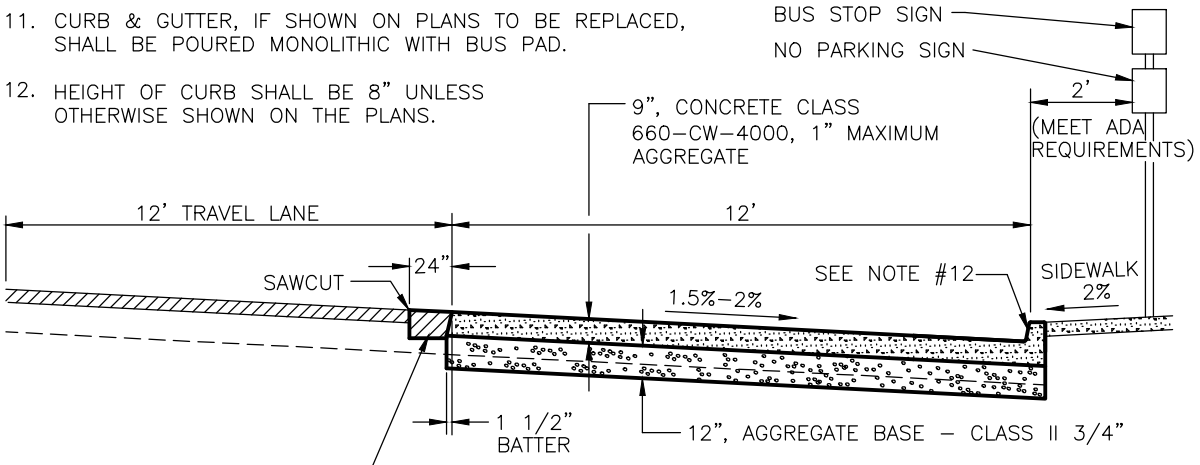
Approved
City Engineer R.C.E. 52125 Exp.12–31–16
Date 12–8–15

REVISIONS	BY	DATE

STD. PLAN NUMBER
B–125

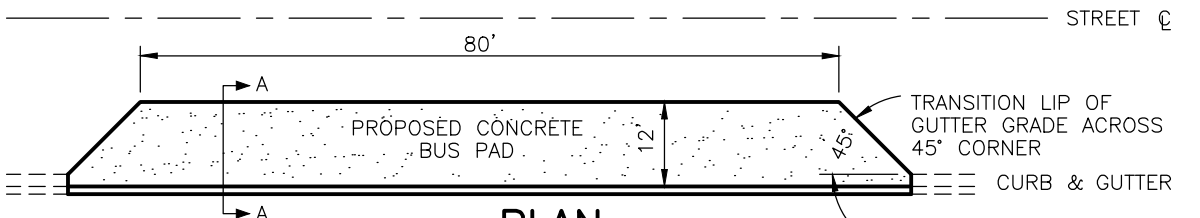
CONSTRUCTION NOTES:

1. CURB SHALL BE POURED MONOLITHIC WITH PCC BUS PAD.
2. COMPACTION ON THE UPPER 6" OF NATIVE SOIL AND AGGREGATE BASE SHALL BE 95%.
3. CONCRETE CYLINDER TESTS SHALL BE TAKEN AS REQUIRED BY INSPECTOR.
4. CONCRETE SHALL HAVE A MAXIMUM OF 4" SLUMP.
5. NO FLY ASH PERMITTED IN CEMENT OR AS AN ADDITIVE.
6. CURING COMPOUND WITH FUGITIVE DYE SHALL BE APPLIED IMMEDIATELY AFTER FINAL FINISHING.
7. 3/4" X 3" DEEP FELT JOINTS SHALL BE INSTALLED AT 15' OC.
8. 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.
9. FINAL LOCATION OF BUS PAD TO BE APPROVED IN FIELD BY OCTA PRIOR TO EXCAVATION.
10. CONTRACTOR SHALL FINISH CONCRETE PAD WITH MEDIUM TO HEAVY BROOM FINISH.
11. CURB & GUTTER, IF SHOWN ON PLANS TO BE REPLACED, SHALL BE POURED MONOLITHIC WITH BUS PAD.
12. HEIGHT OF CURB SHALL BE 8" UNLESS OTHERWISE SHOWN ON THE PLANS.



SECTION A-A

NOT TO SCALE



PLAN

NOT TO SCALE

City of Garden Grove California

CONCRETE BUS PAD

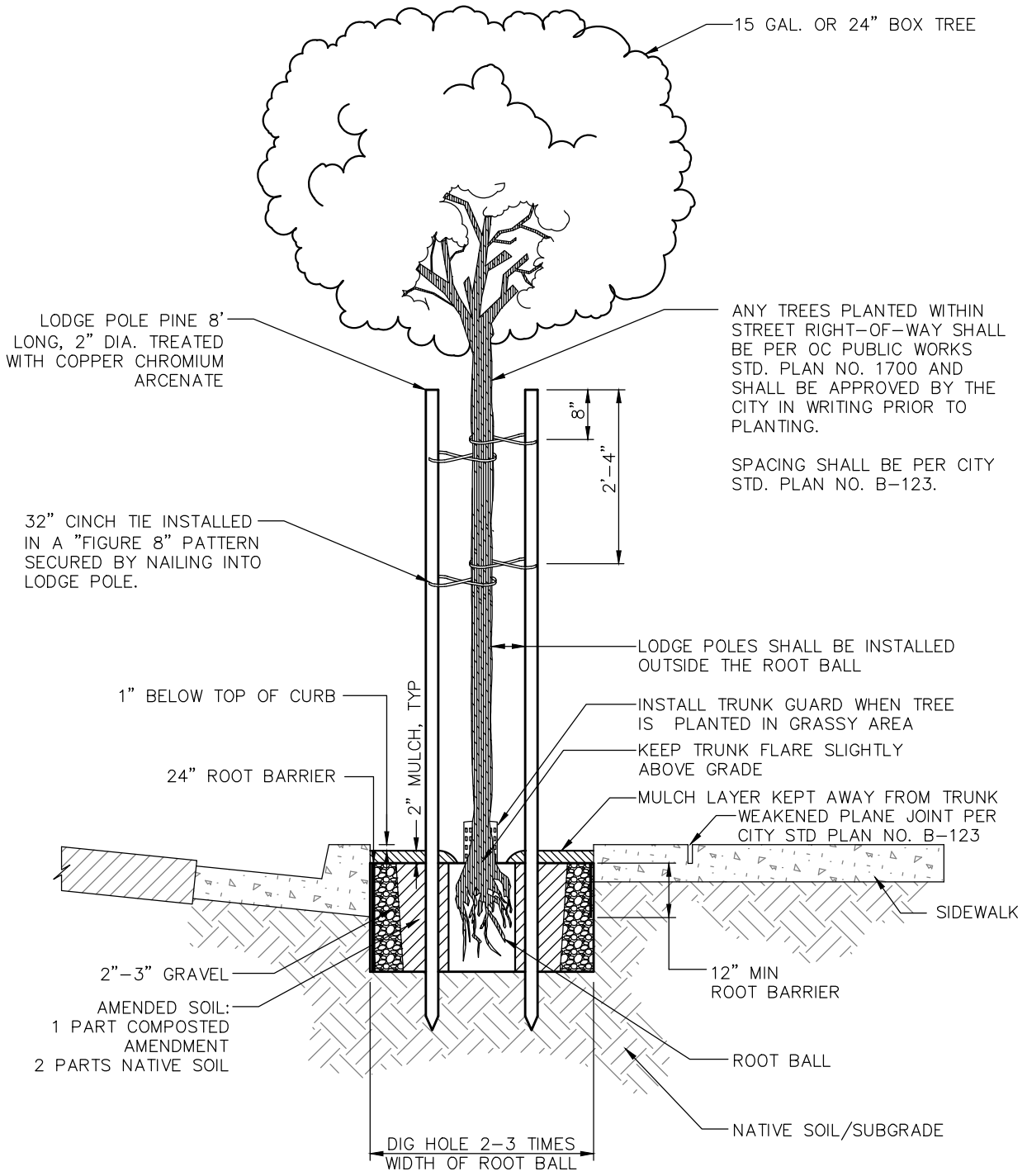
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-126



DOUBLE STAKING

City of Garden Grove California

STREET TREE PLANTING DETAIL

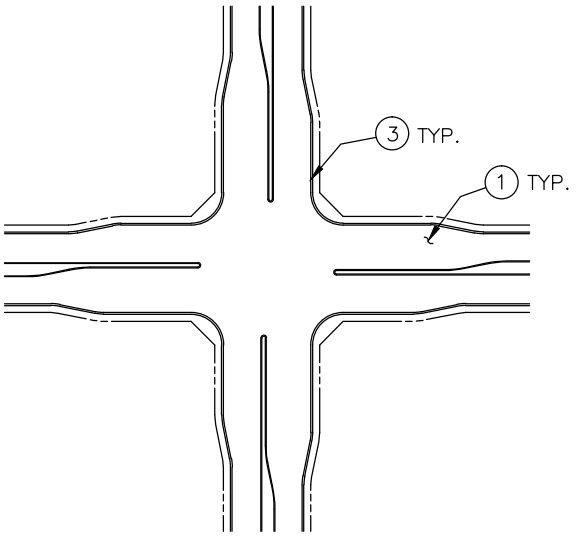
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

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. ADA ACCESS RAMP PER CITY STD. PLAN B–107 AND 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 Δ/2 OF CURB RETURNS TO REMAIN CLEAR OF CROSSWALK.
5. REFER TO ORANGE COUNTY P.W. STANDARD PLAN No. 1117 FOR INTERSECTION SIGHT DISTANCE REQUIREMENTS.

City of Garden Grove
California

GARDEN GROVE

TYPICAL ARTERIAL/ ARTERIAL INTERSECTION LAYOUT

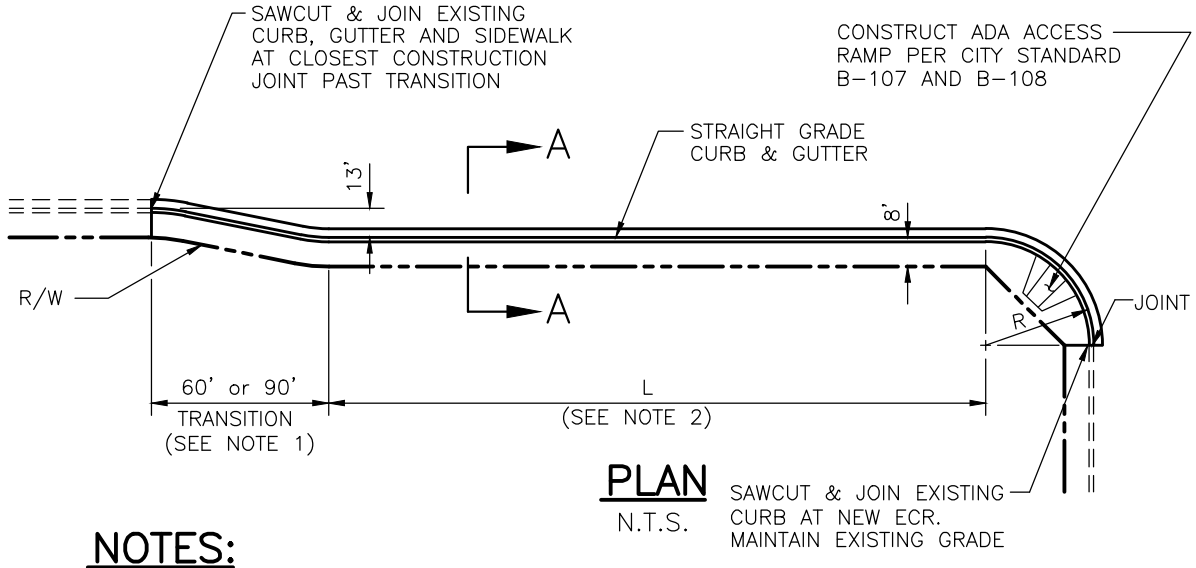
Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

REVISIONS	BY	DATE

STD. PLAN NUMBER

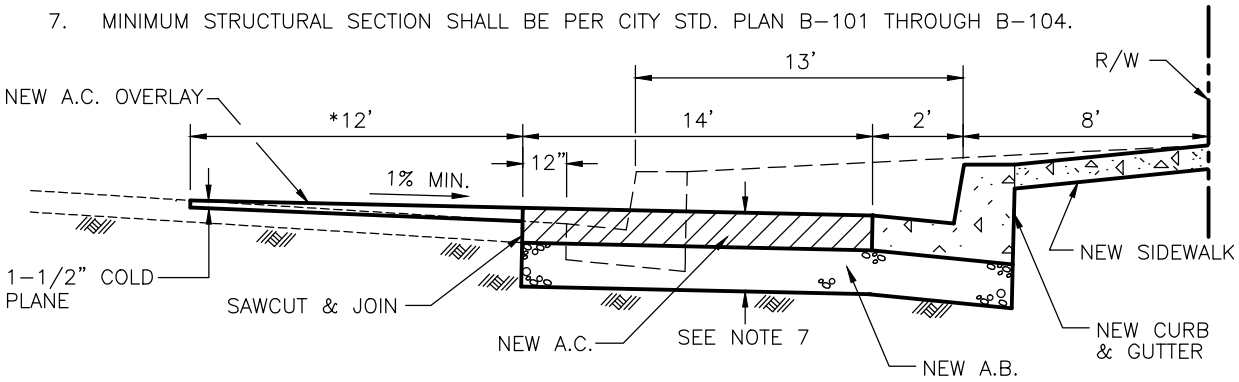
B–128



PLAN
N.T.S.

NOTES:

1. PROVIDE REVERSE TAPER PER CITY STD. PLAN B-132.
2. "L" DIMENSION WILL BE AS SPECIFIED BY CITY ENGINEER WITH 100 FEET AS MIN. LENGTH.
3. CONSTRUCTION PLAN AND TOPO SURVEY SHALL BE PROVIDED PRIOR TO APPROVAL BY CITY ENGINEER.
4. R=35' FOR ARTERIAL STREET; R=25' FOR LOCAL STREETS PER B-107.
5. CONSTRUCT NEW CURB & GUTTER PER CITY STD. PLAN B-113 AND SIDEWALK PER B-106.
6. SURVEY REFERENCE POINTS TO BE RESET BY LICENSED SURVEYOR AND TIE NOTES OR BENCH MARK ELEVATIONS TO BE SUBMITTED TO CITY SURVEYOR.
7. MINIMUM STRUCTURAL SECTION SHALL BE PER CITY STD. PLAN B-101 THROUGH B-104.



SECTION A-A
N.T.S.

* ACTUAL LOCATION OF JOIN TO BE DETERMINED BY CITY. SUBMIT CROSS SECTIONS AS REQUIRED BY CITY ENGINEER.

City of Garden Grove California

RIGHT TURN POCKET

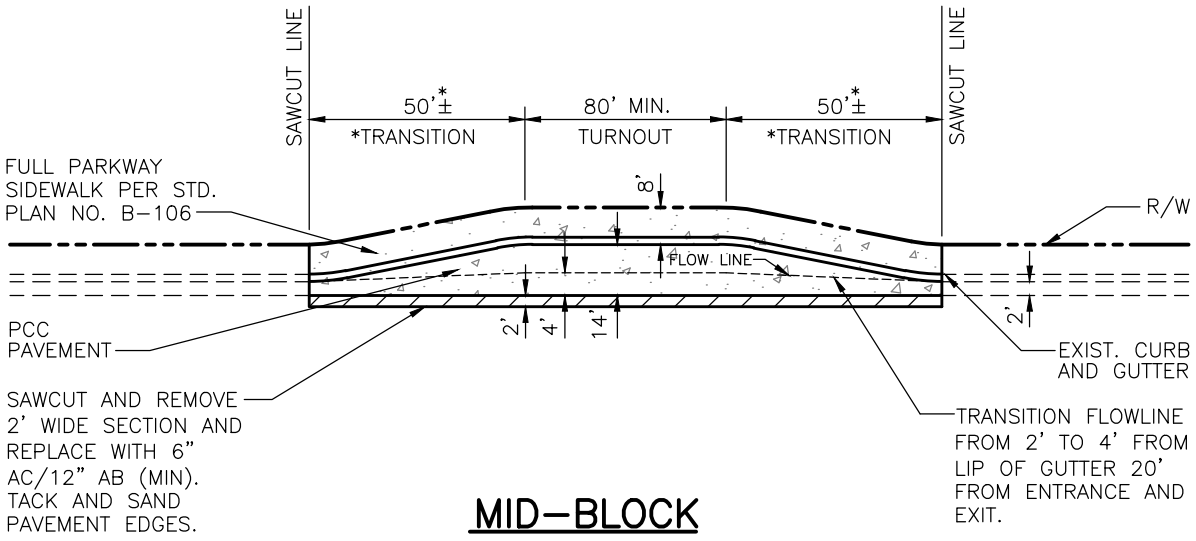
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-129



MID-BLOCK

NOTES:

*1. PROVIDE 50' RADIUS REVERSE CURVE.

2. P.C.C. PAVEMENT THICKNESS SHALL BE 9" OVER 12" CLASS II 3/4" AGG. BASE

3. BUS SHELTERS SHALL BE SET BACK FROM THE FACE OF THE CURB A MINIMUM CLEAR DISTANCE OF FOUR (4) FEET FOR PEDESTRIAN TRAVEL WAY.

4. CURB SHALL BE POURED MONOLITHIC WITH P.C.C. PAVEMENT.

5. MODIFICATIONS OF THIS STANDARD SHALL BE REVIEWED FOR ACCEPTABILITY BY THE CITY TRAFFIC ENGINEER.

6. CONSTRUCT 3" x 3/4" FELT CONTROL JOINTS AT 15' INTERVALS.

7. CATCH BASINS SHALL NOT BE LOCATED IN BUS TURNOUTS IF POSSIBLE.

8. DRIVEWAYS SHALL NOT BE LOCATED IN BUS TURNOUTS.

9. CURB HEIGHTS MAY VARY TO MATCH EXIST. GRADE BEHIND CURB; 5" MIN. 8" MAX.

10. CONSTRUCTION PLAN AND TOPO SURVEY SHALL BE PROVIDED PRIOR TO APPROVAL BY CITY ENGINEER.

11. CONCRETE SHALL BE CLASS 660-CW-4000 WITH 1" AGGREGATE.

12. MAINTAIN 2% MAX. CROSS FALL ON CONCRETE BUS PAD.

City of Garden Grove California

GARDEN GROVE

MID-BLOCK BUS TURNOUT

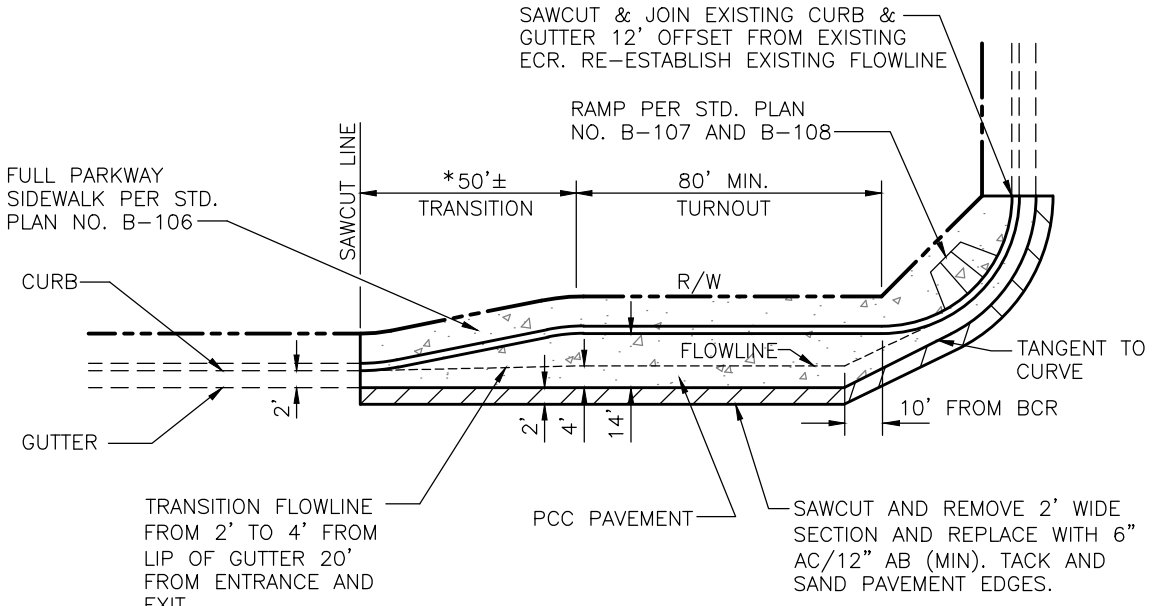
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-130



FAR SIDE

N.T.S.

NOTES:

*1. PROVIDE 50' RADIUS REVERSE CURVE.

2. P.C.C. PAVEMENT THICKNESS SHALL BE 9" OVER 12" CLASS II 3/4" AGGREGATE BASE.

3. BUS SHELTERS SHALL BE SET BACK FROM THE FACE OF THE CURB A MINIMUM CLEAR DISTANCE OF FOUR (4) FEET FOR PEDESTRIAN TRAVEL WAY.

4. CURB SHALL BE POURED MONOLITHIC WITH P.C.C. PAVEMENT.

5. MODIFICATIONS OF THIS STANDARD SHALL BE REVIEWED FOR ACCEPTABILITY BY THE CITY TRAFFIC ENGINEER.

6. CONSTRUCT 3" x 3/4" FELT CONTROL JOINTS AT 15' INTERVALS.

7. CATCH BASINS SHOULD NOT BE LOCATED IN BUS TURNOUTS IF POSSIBLE.

8. DRIVEWAYS SHALL NOT BE LOCATED IN BUS TURNOUTS.

9. CURB HEIGHTS MAY VARY TO MATCH EXIST. GRADE BEHIND CURB; 5" MIN. 8" MAX.

10. CONSTRUCTION PLAN AND TOPO SURVEY SHALL BE PROVIDED PRIOR TO APPROVAL BY CITY ENGINEER.

11. CONCRETE SHALL BE CLASS 660-CW-4000 WITH 1" AGGREGATE.

12. MAINTAIN 2% MAX. CROSS FALL ON BUS PAD.

City of Garden Grove California

GARDEN GROVE

CORNER BUS TURNOUT

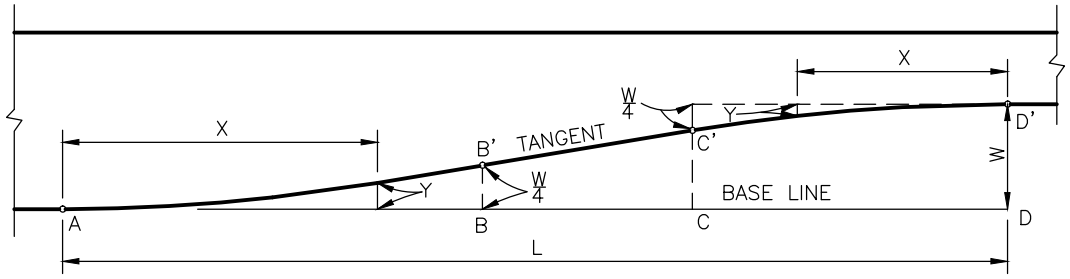
Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-131



W=WIDTH OF LEFT OR RIGHT TURN POCKET

L=LENGTH OF TAPER

AB=BC=CD= $\frac{L}{3}$

AB' AND C'D' ARE PARABOLIC CURVES EXCEPT ON CURVED ALIGNMENTS

X=DISTANCE FROM POINT "A" ALONG BASE LINE

Y=OFFSET FROM BASE LINE

SINGLE TURN POCKET

N.T.S.

L=90' W=10',13'

X	0'	10'	20'	30'	40'	50'	60'	70'	80'	90'
Y_{10}	0.00'	0.28'	1.11'	2.50'	4.17'	5.83'	7.50'	8.89'	9.72'	10.00'
Y_{13}	0.00'	0.36'	1.44'	3.25'	5.42'	7.58'	9.75'	11.56'	12.64'	13.00'

L=60'* W=10',13'

X	0'	10'	20'	30'	40'	50'	60'
Y_{10}	0.00'	0.62'	2.50'	5.00'	7.50'	9.38'	10.00'
Y_{13}	0.00'	0.81'	3.25'	6.50'	9.75'	12.19'	13.00'

NOTES:

IN THE CASE WHEN THE BASE LINE IS CURVED THE OFFSETS ARE CALCULATED BY ASSUMING THE BASE LINE TO BE TANGENT; THEY ARE THEN APPLIED TO THE CURVED BASE LINE. AB' AND C'D' ARE NO LONGER PARABOLIC AND B'C' IS NO LONGER A TANGENT.

* USE 60' TRANSITION WHEN INSUFFICIENT DISTANCE IS AVAILABLE FOR 90' TRANSITION. USE OF 60' TRANSITION SHALL BE APPROVED BY CITY TRAFFIC ENGINEER.

City of Garden Grove California

GARDEN GROVE

PARABOLIC CURB TRANSITION

Approved Date 12-8-15

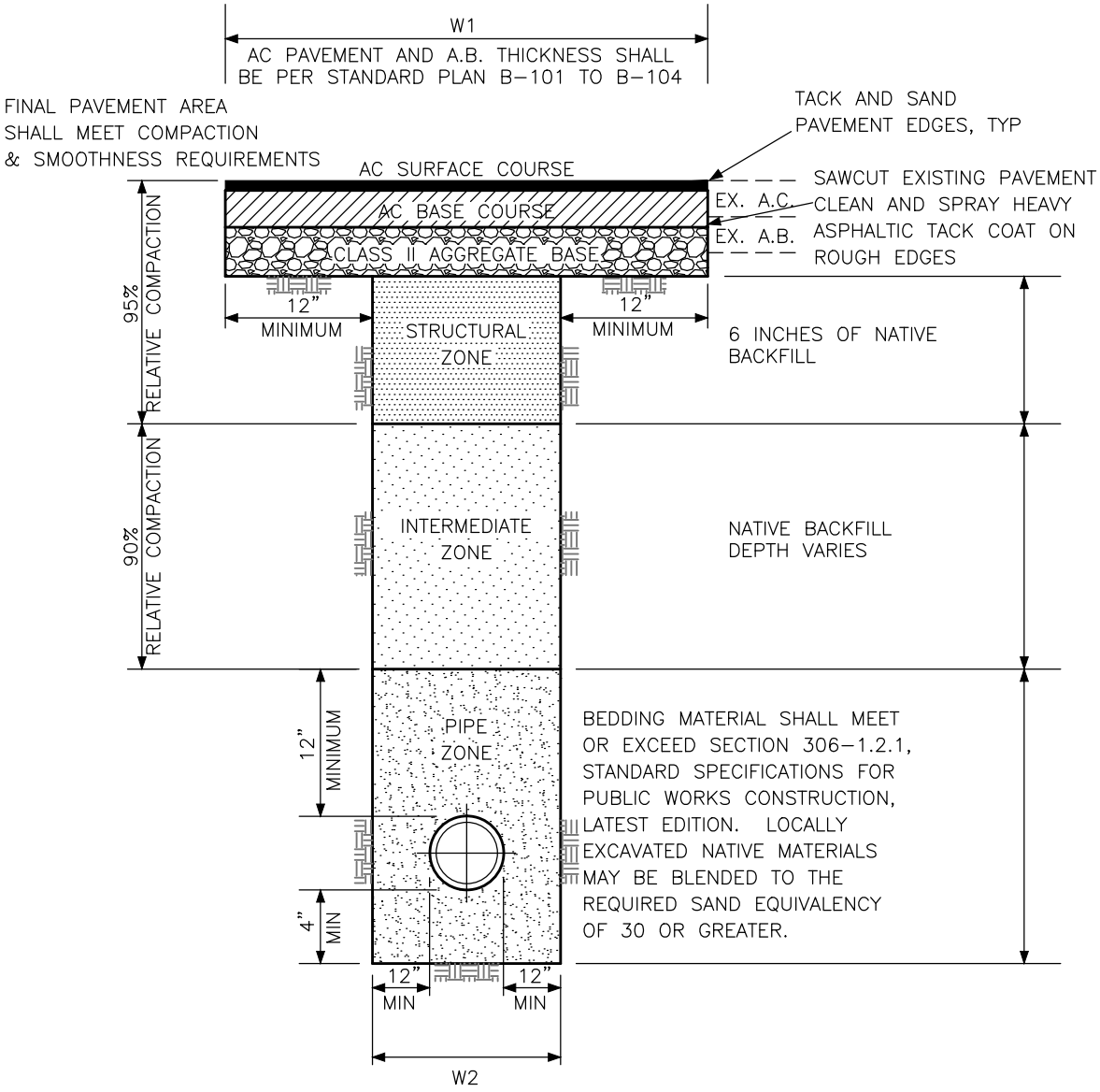
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-132

LONGITUDINAL AND TRANSVERSE TRENCH BACKFILL SECTION
CASE A: T-CAP (NATIVE BACKFILL)



NOTES:

1. TRENCHES WITHIN 3 FEET OF CURB OR CURB & GUTTER SHALL BE PAVED TO JOIN CURB OR GUTTER.
2. WIDTH OF CAP, W1, EQUALS W2 PLUS A MINIMUM OF 12" ON BOTH SIDES AND SHALL BE SUBJECT TO CHANGE BY THE ENGINEER.
3. WIDTH OF TRENCH, W2 EQUALS DIAMETER OF PIPE PLUS A MINIMUM OF 12" ON BOTH SIDES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. THERE SHALL BE 4 INCHES MINIMUM OF BEDDING BELOW THE PIPE UNLESS OTHERWISE SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

City of Garden Grove California

TRENCH BACKFILL DETAIL & STANDARD STREET RESURFACING

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

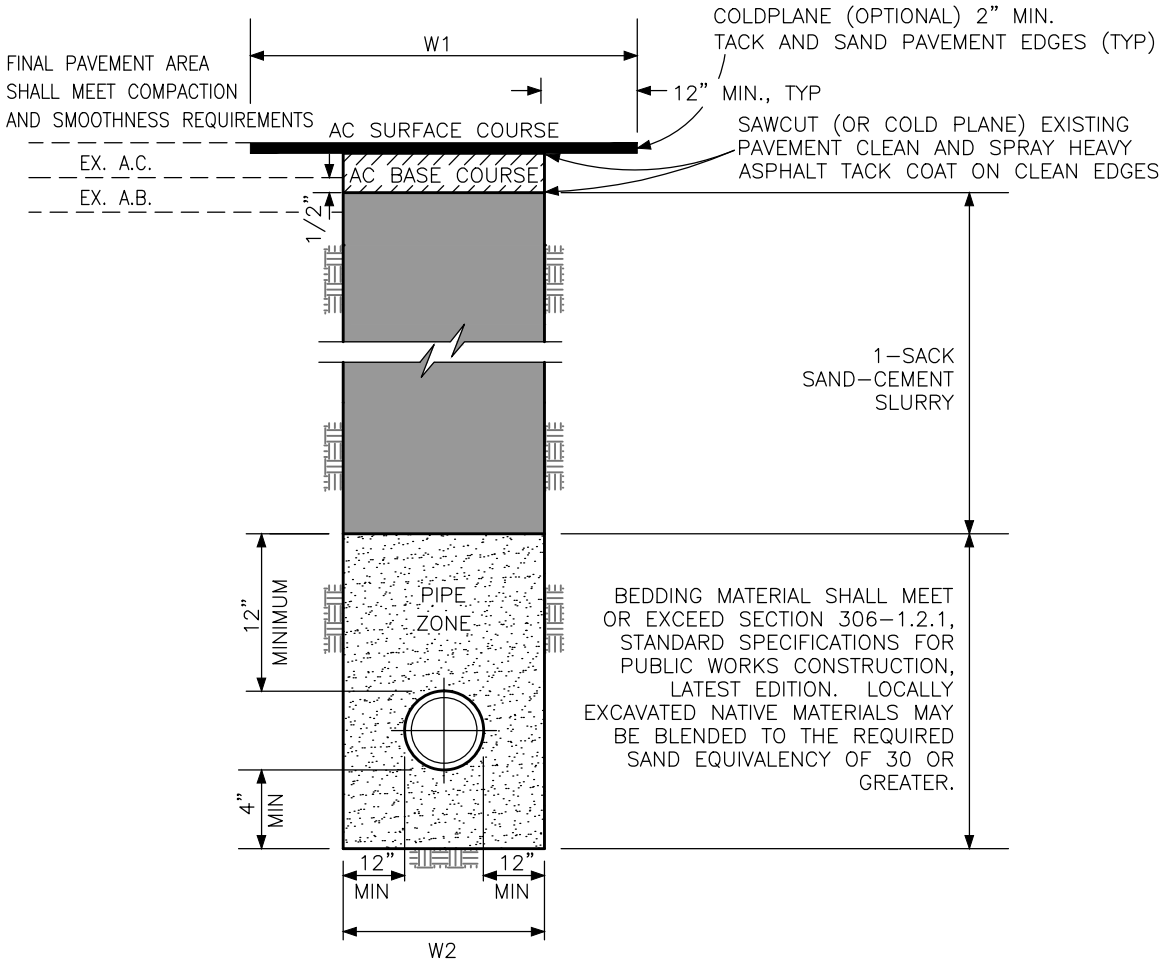
REVISIONS	BY	DATE

STD. PLAN NUMBER

B-134

SHEET 1 OF 2

LONGITUDINAL TRENCH BACKFILL SECTION
CASE B: VERTICAL CUT ONLY (SLURRY BACKFILL)



NOTES:

1. REPLACE ASPHALT TO 1/2" BELOW EXISTING AS SHOWN ABOVE.
2. COLD PLANE MINIMUM 2" (OPTIONAL) OR SAWCUT EXISTING PAVEMENT.
3. MINIMUM COMPACTION FOR AC IS 95% RELATIVE COMPACTION.
4. TRENCHES WITHIN 3 FEET OF CURB OR CURB & GUTTER SHALL BE PAVED TO JOIN CURB OR GUTTER.
5. W1 SHALL HAVE A MINIMUM WIDTH EQUAL TO W2 PLUS A MINIMUM OF 12" ON ALL SIDES AND SHALL BE SUBJECT TO CHANGE BY THE ENGINEER.
6. ALL WORK AND MATERIAL SHALL MEET OR EXCEED THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
7. LONGITUDINAL TRENCHES IN EXCESS OF 600 FEET MAY BE REQUIRED TO ADDITIONAL RESURFACING REQUIREMENTS DEPENDING ON STREET CONDITION AS DETERMINED BY THE ENGINEER.
8. W2 EQUALS DIAMETER OF PIPE PLUS 12" ON BOTH SIDES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
9. THERE SHALL BE 4 INCHES MINIMUM OF BEDDING BELOW THE PIPE UNLESS OTHERWISE SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

City of Garden Grove California

GARDEN GROVE

TRENCH BACKFILL DETAIL & STANDARD STREET RESURFACING

Approved _____ Date 12-8-15

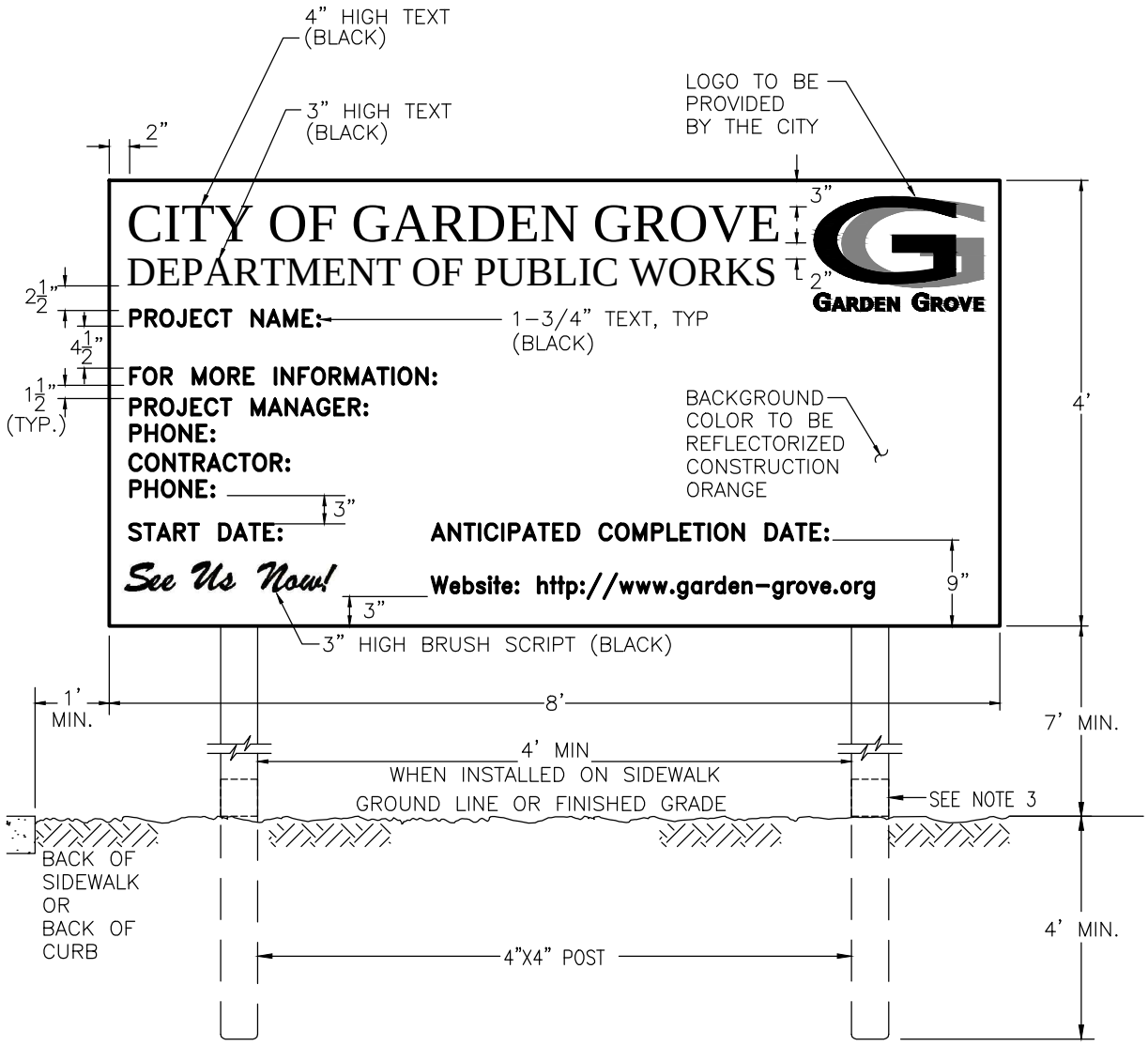
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-134

SHEET 2 OF 2



OPTION 1

NOTES:

1. SIGN LOCATION TO BE DETERMINED IN THE FIELD BY CITY INSPECTOR.

2. MOUNT SIGN ON (2) 4" x 4" POST EMBEDDED 4' INTO GROUND.

3. IF INFORMATION SIGN IS TO BE PLACED ON SIDEWALK OR MEDIAN HARD SURFACE, USE ALTERNATE MOUNTING AS SHOWN ON SHEET 3.

City of Garden Grove California

CONSTRUCTION INFORMATION SIGN STANDARD INSTALLTION

Approved Date 12-8-15

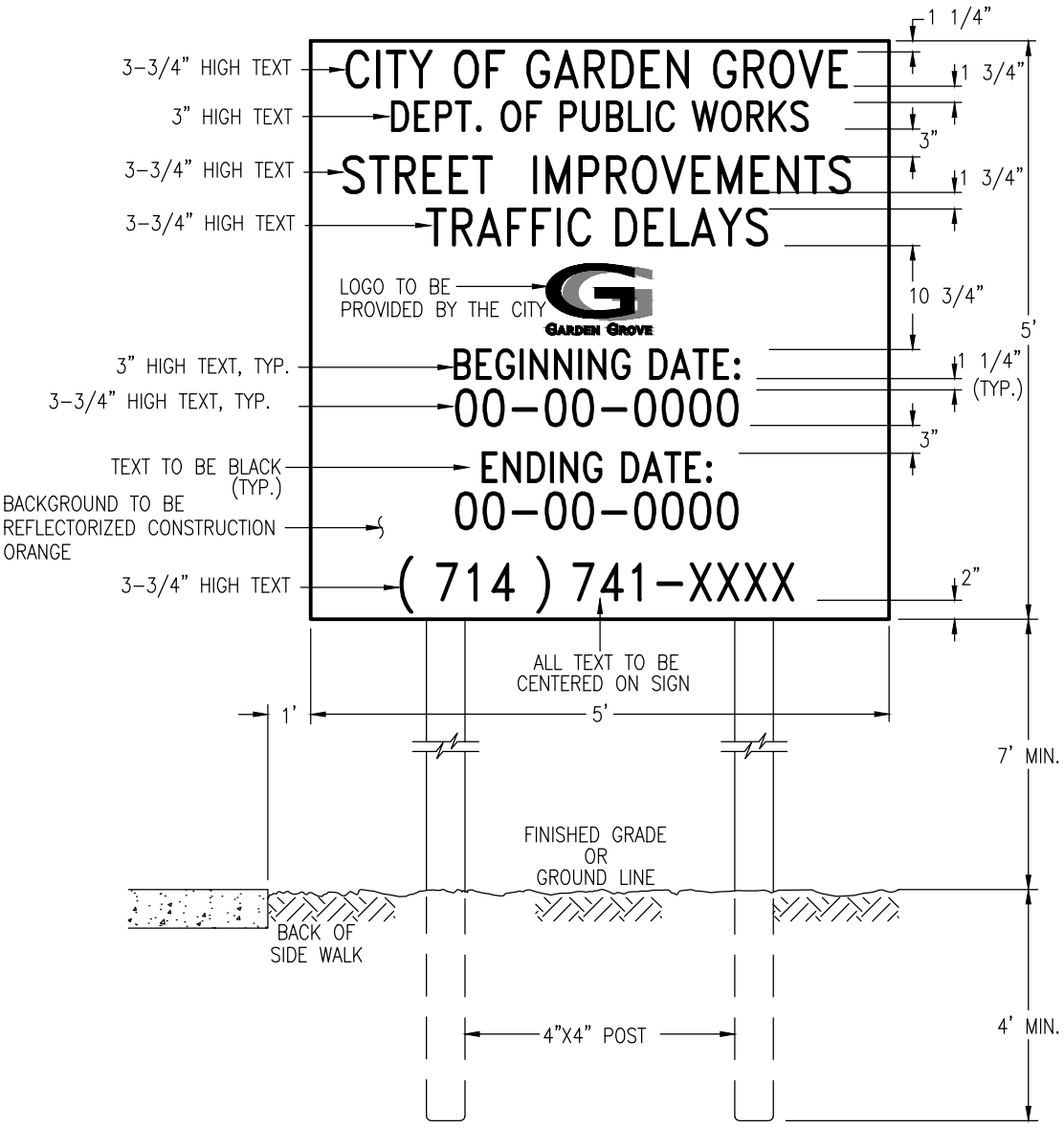
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

B-135

SHEET 1 OF 3

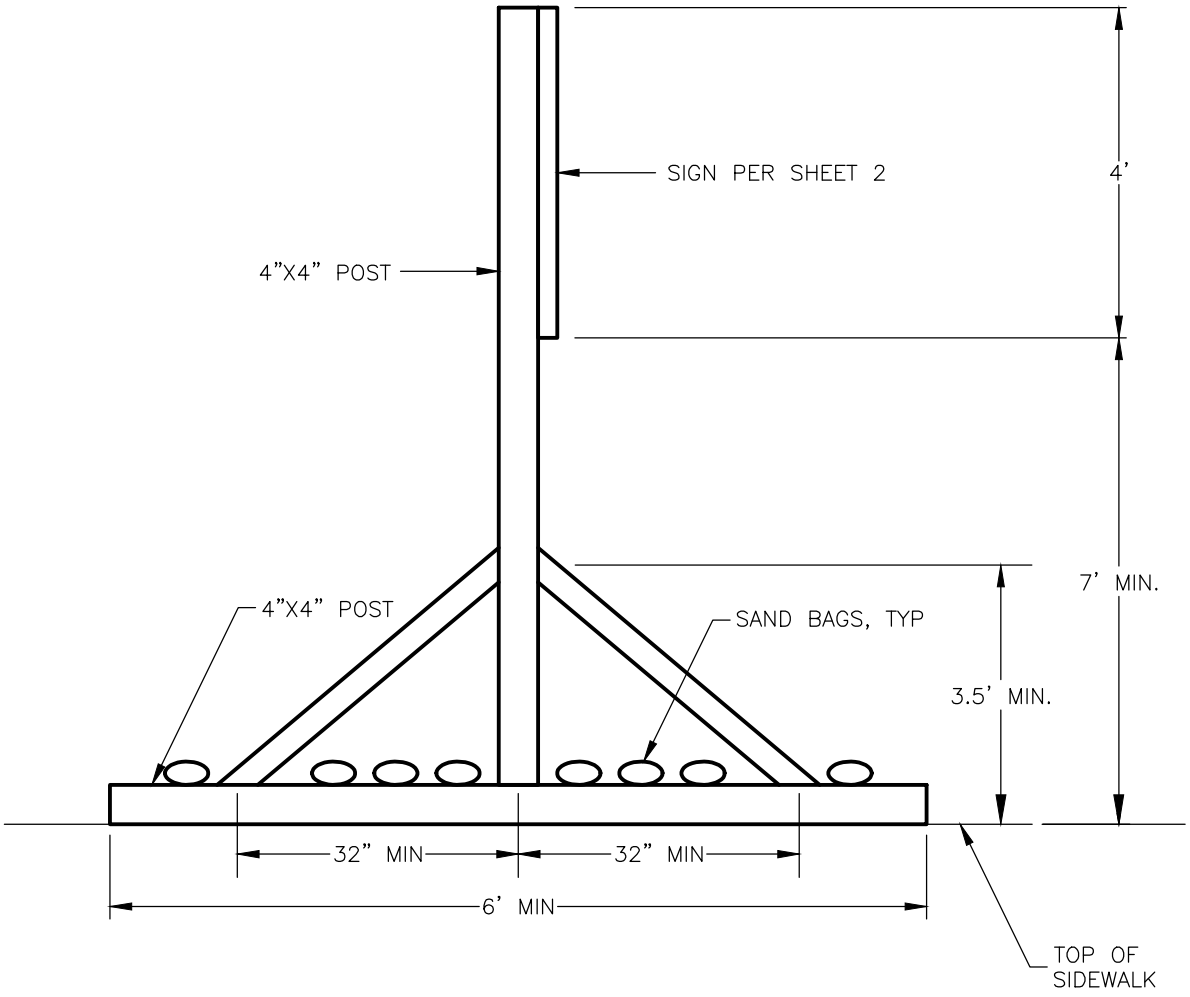


OPTION 2

NOTES:

1. SIGN LOCATION TO BE DETERMINED IN THE FIELD BY CITY INSPECTOR.
2. MOUNT SIGN ON (2) 4" x 4" POST EMBEDDED 4' INTO GROUND.

GARDEN GROVE City of Garden Grove California	CONSTRUCTION INFORMATION SIGN LIMITED RIGHT-OF-WAY			
Approved Date 12-8-15 City Engineer R.C.E. 52125 Exp.12-31-16	REVISIONS	BY	DATE	STD. PLAN NUMBER B-135 SHEET 2 OF 3



ALTERNATE INSTALLATION ON HARD SURFACE
SIDE VIEW

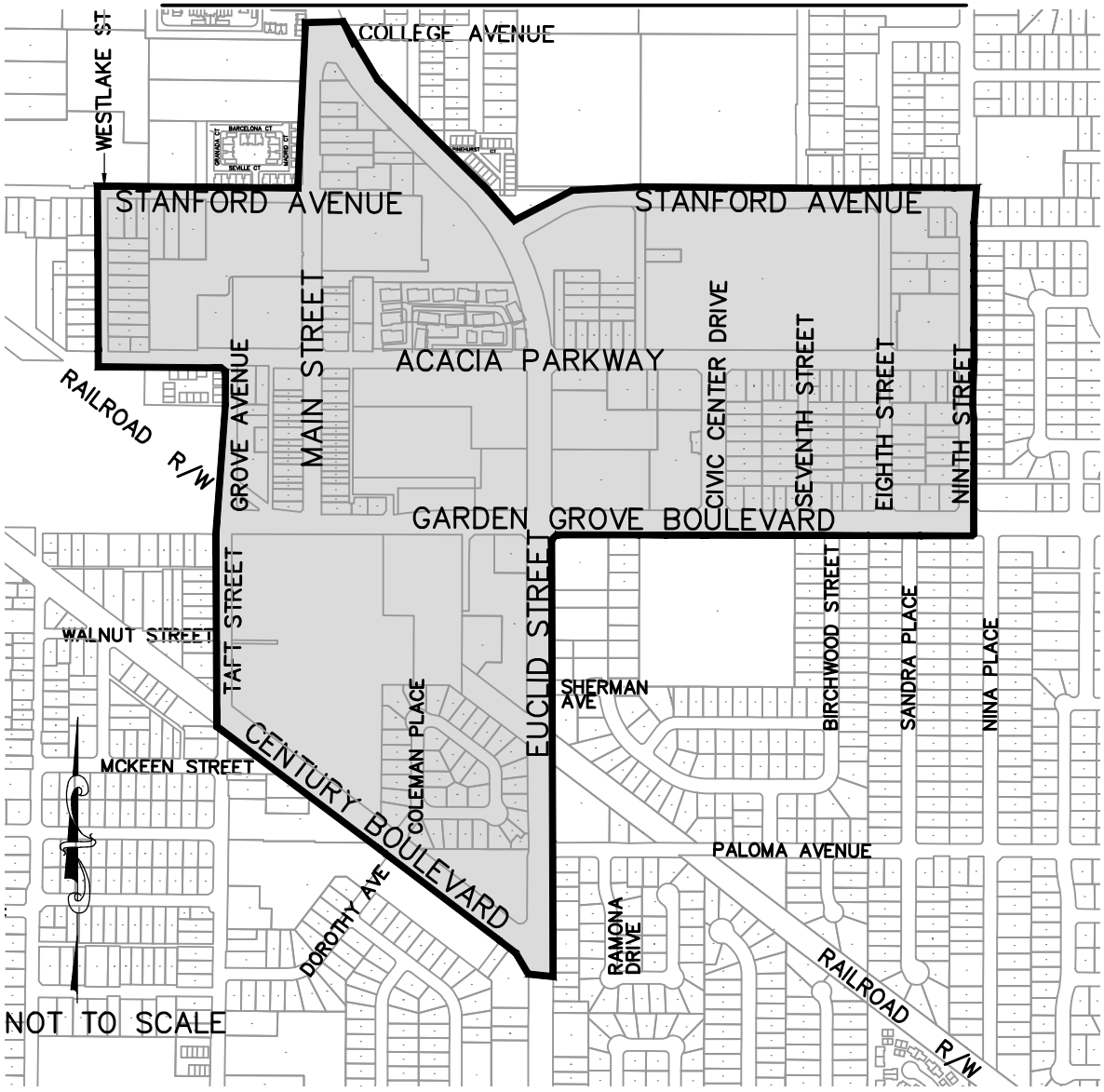
NOTES:

1. SIGN LOCATION TO BE DETERMINED IN THE FIELD BY CITY INSPECTOR.

2. FOOTINGS SHALL BE HELD DOWN BY SAND BAGS AND SHALL BE MAINTAINED THROUGHOUT ENTIRE PROJECT.

GARDEN GROVE City of Garden Grove California	CONSTRUCTION INFORMATION SIGN ALTERNATE MOUNTING			
Approved Date 12-8-15 City Engineer R.C.E. 52125 Exp.12-31-16	REVISIONS	BY	DATE	STD. PLAN NUMBER B-135 SHEET 3 OF 3

CIVIC CENTER AREA DESIGNATION



ANY CONSTRUCTION IMPROVEMENTS MADE WITHIN THE CIVIC CENTER AREA AS DEFINED HERE SHALL MEET ALL REQUIREMENTS OF THIS STANDARD PLAN AND AS DIRECTED BY THE ENGINEER.

THIS STANDARD PLAN INCLUDES:

SHT 2 – ENHANCED INTERSECTION LAYOUT
SHT 3 – DECORATIVE SIDEWALK CURB RETURN AND LANDING
SHT 4 – DECORATIVE CROSSWALK DETAILS

City of Garden Grove California

CIVIC CENTER STREET IMPROVEMENT CRITERIA

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

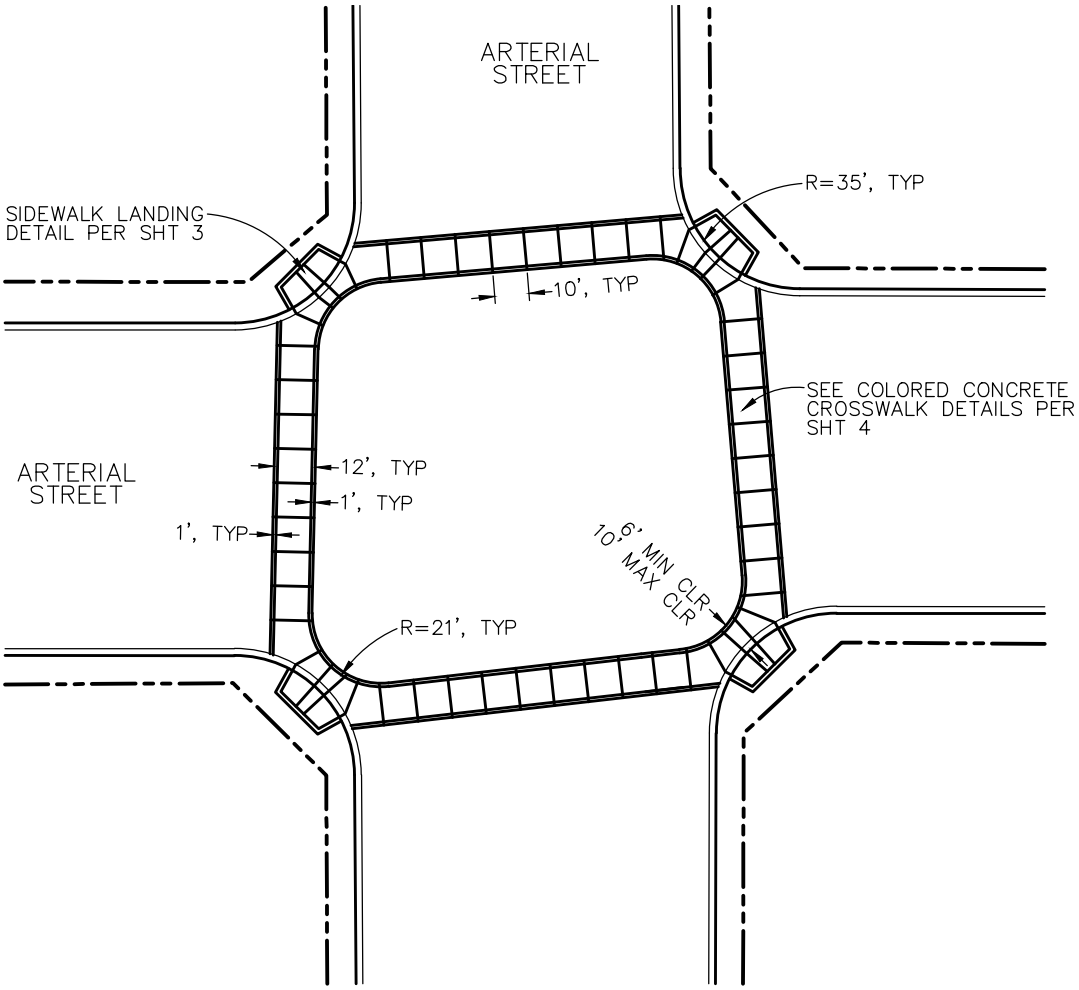
REVISIONS	BY	DATE

STD. PLAN NUMBER

B-136

SHEET 1 OF 4

ENHANCED ARTERIAL STREET INTERSECTION LAYOUT

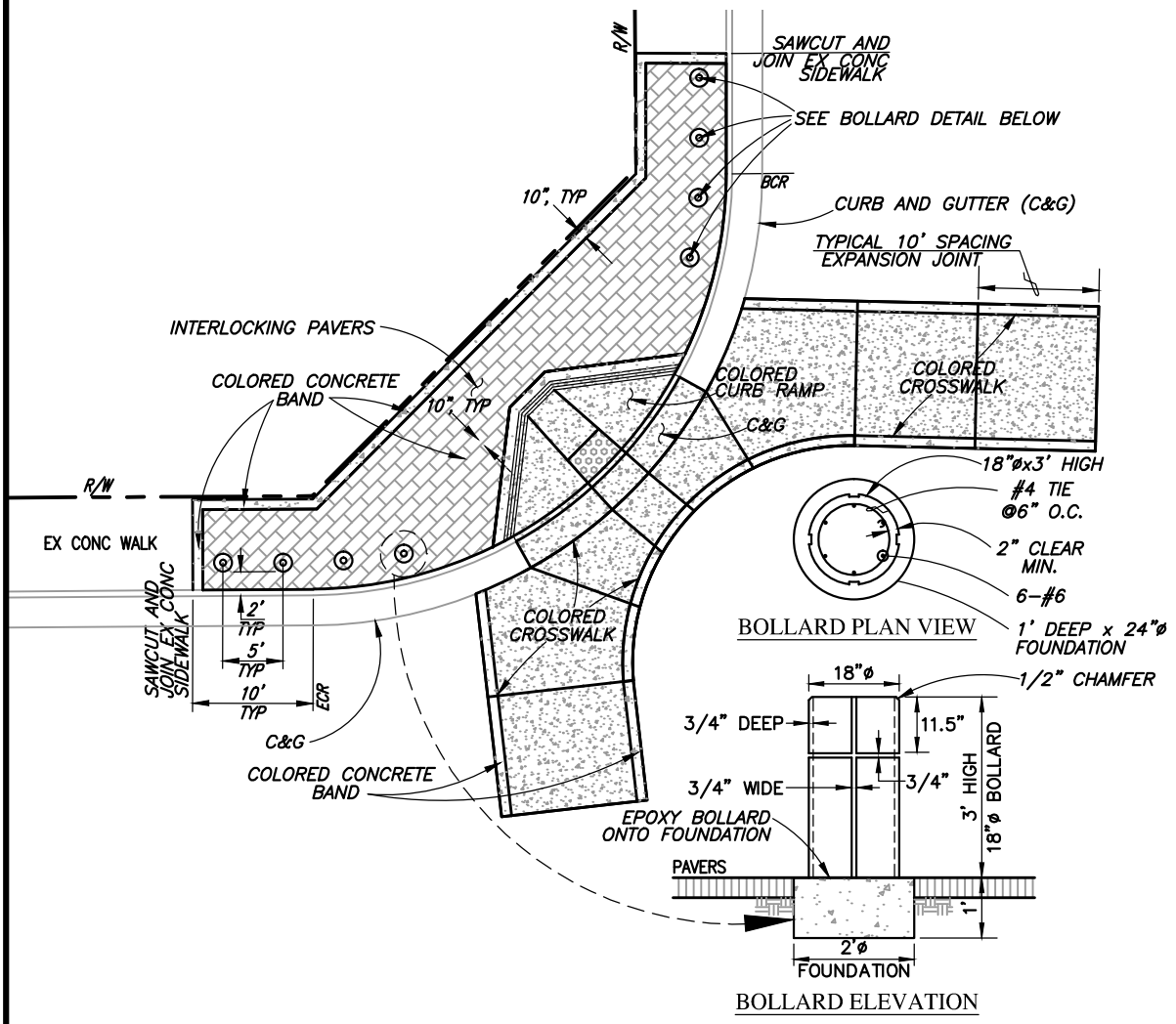


NOTES:

1. LAYOUT OF CROSSWALK SHALL BE APPROVED BY CITY TRAFFIC ENGINEER.
2. SEE SHT 3 FOR DECORATIVE SIDEWALK LANDING.
3. SEE SHT 4 FOR DECORATIVE CROSSWALK DETAILS.

City of Garden Grove California	CIVIC CENTER STREET IMPROVEMENT CRITERIA			
Approved _____ Date 12-8-15 City Engineer R.C.E. 52125 Exp.12-31-16	REVISIONS	BY	DATE	STD. PLAN NUMBER B-136 SHEET 2 OF 4

TYPICAL DECORATIVE SIDEWALK LANDING



NOTES:

BOLLARDS SHALL BE 3' HIGH x 18"ø COLORED CONCRETE AND EPOXIED ONTO A 2'ø x 1' DEEP RIVERSIDE BUFF COLORED CONCRETE FOUNDATION. (SIZE, COLOR, PATTERN, ETC. SHALL MATCH EXISTING BOLLARD LOCATED ON ACACIA PARKWAY AND EUCLID ST).

SEE CALTRANS STD PLAN A88A FOR CURB RAMP DETAILS. RAMPS SHALL BE RIVERSIDE BUFF C-28 INTEGRAL COLOR (SCOFIELD COLORS).

COLORED CROSSWALK SHALL BE PER DETAILS SHOWN ON SHEET 4.

COLORED CONCRETE BAND SHALL BE PER DETAILS SHOWN ON SHEET 4.

INTERLOCKING PAVERS SHALL MATCH PATTERN, COLOR & SIZE AS EXISTING PAVERS LOCATED ON ACACIA PARKWAY AND EUCLID ST.

SEE STANDARD PLAN B-113 FOR CURB & GUTTER DETAILS.

City of Garden Grove California

GARDEN GROVE

CIVIC CENTER STREET IMPROVEMENT CRITERIA

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

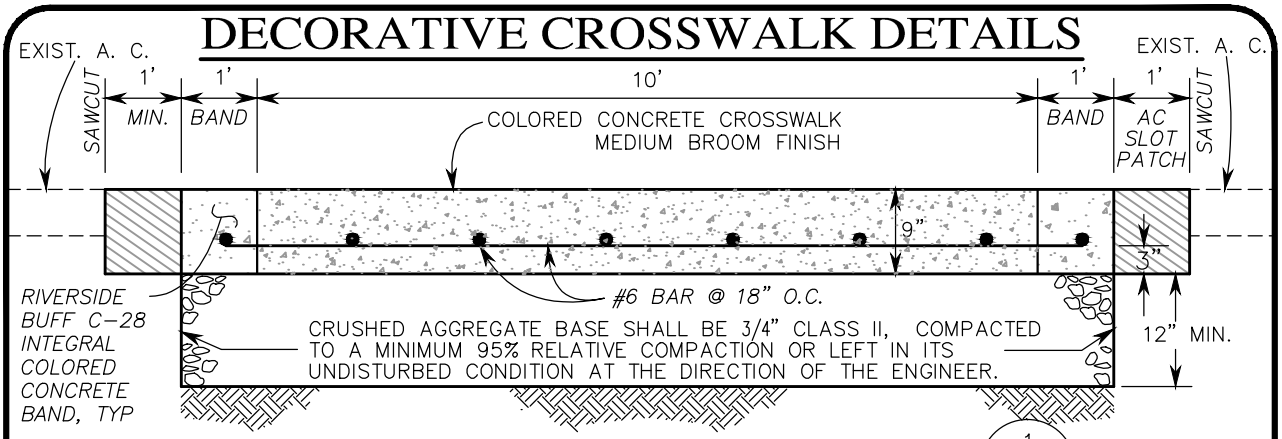
REVISIONS	BY	DATE

STD. PLAN NUMBER

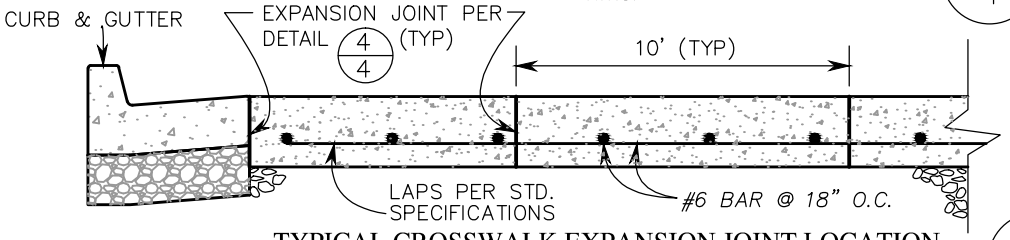
B-136

SHEET 3 OF 4

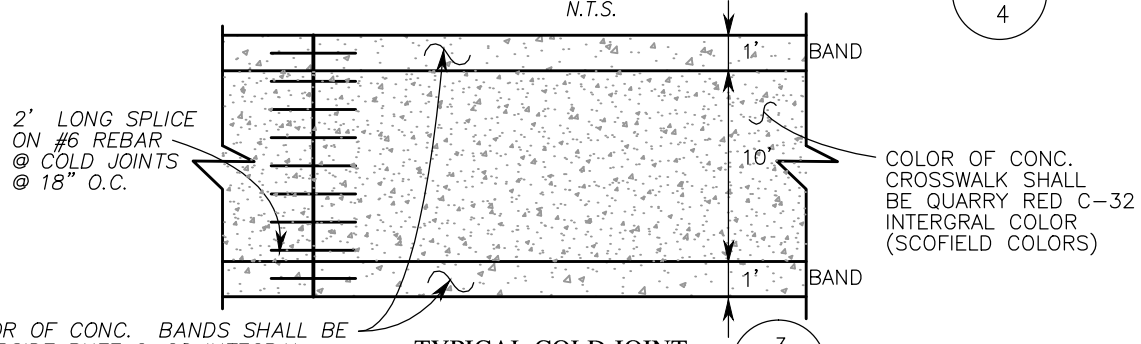
DECORATIVE CROSSWALK DETAILS



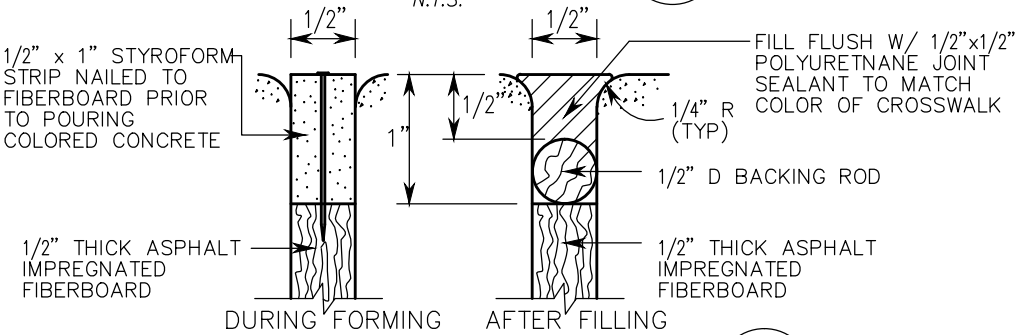
TYPICAL CROSSWALK SECTION (1/4)
N.T.S.



TYPICAL CROSSWALK EXPANSION JOINT LOCATION (2/4)
N.T.S.



TYPICAL COLD JOINT CROSSWALK PLAN (3/4)
N.T.S.



EXPANSION JOINT @ 10' O.C. DETAIL (4/4)
N.T.S.

City of Garden Grove California

CIVIC CENTER STREET IMPROVEMENT CRITERIA

Approved _____ Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

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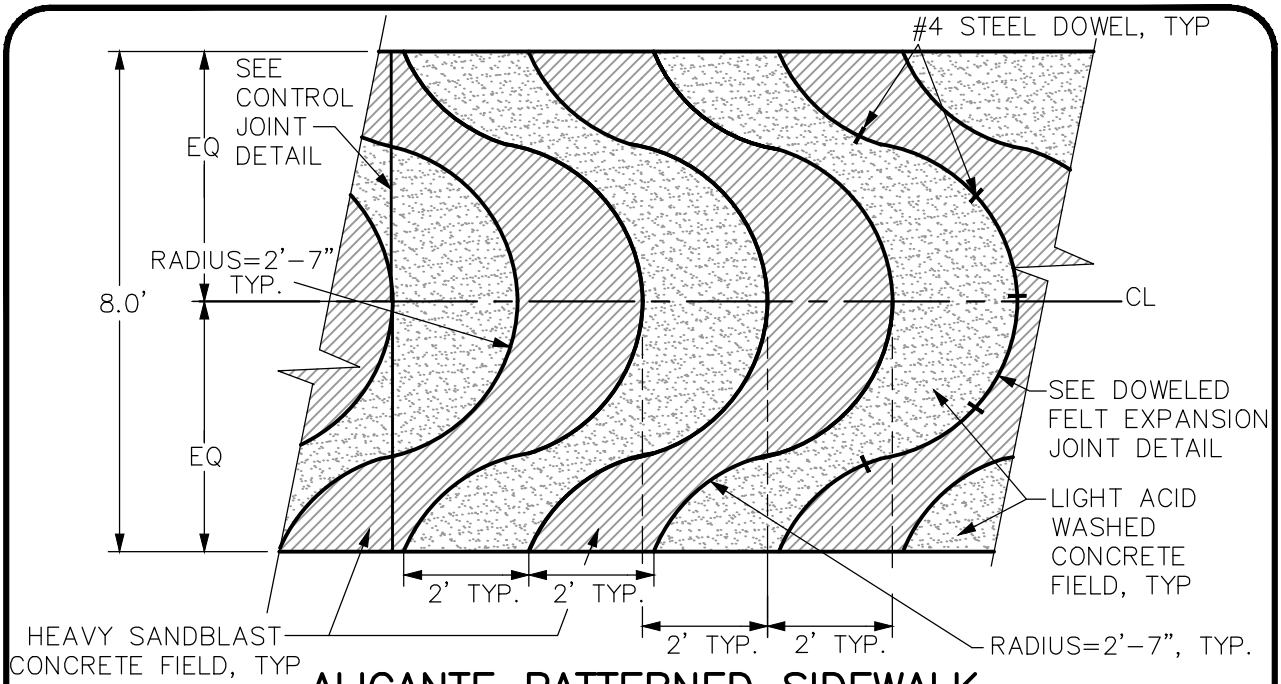
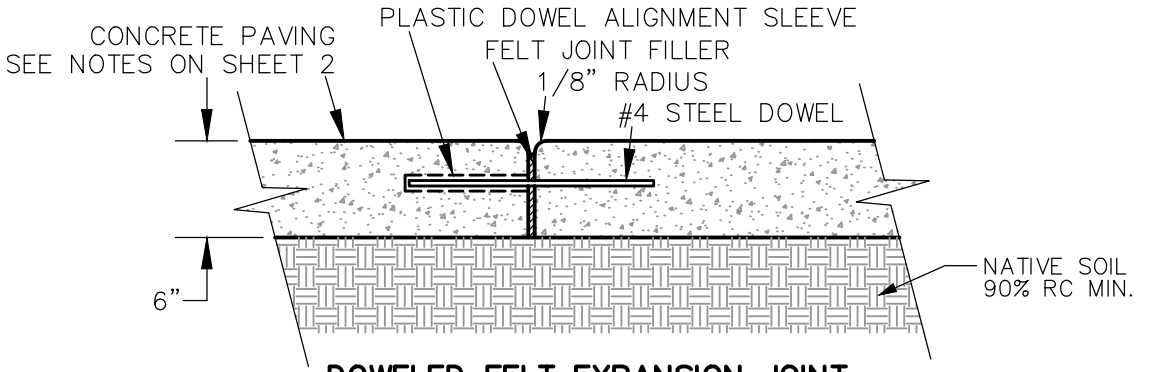
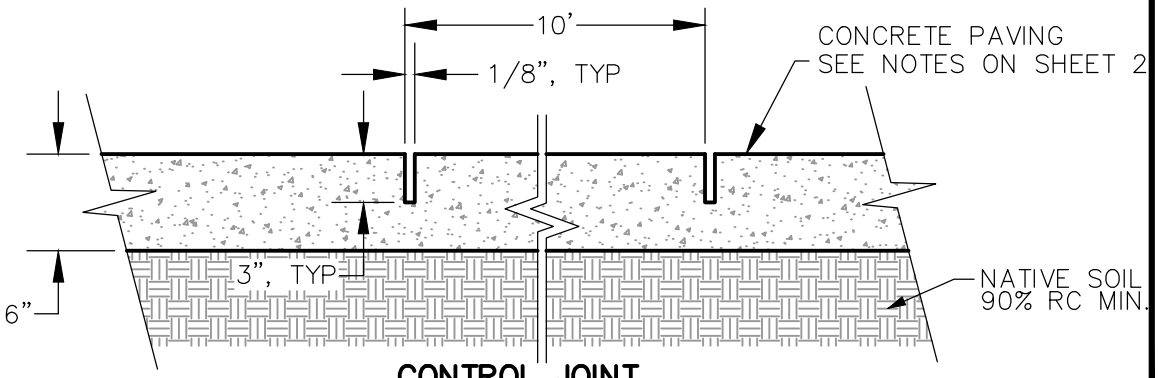
SHEET 4 OF 4



ALICANTE PATTERNED SIDEWALK



DOWELED FELT EXPANSION JOINT



CONTROL JOINT

City of Garden Grove California

HARBOR BOULEVARD DECORATIVE SIDEWALK IMPROVEMENTS

Approved _____ Date 12-8-15

City Engineer R.C.E. 52125 Exp.12-31-16

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SHEET 1 OF 2

ALICANTE PATTERNED SIDEWALK NOTES:

1. A MOCK UP PANEL 8' x 10' SHALL BE COMPLETED BY CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.

2. CONCRETE SHALL HAVE DARK GREY INTEGRAL COLOR ACHIEVED BY USING 5LBS OF DAVIS 860 PIGMENT PER SACK OF CEMENT. PIGMENT 8084 IS UNACCEPTABLE.

3. THE 3/8" DIAMETER INYO WHITE AGGREGATE SHALL BE BROADCAST ONTO THE SURFACE OF THE CONCRETE AT A RATE OF 3 TO 4 LBS PER SF AND SHALL BE FLOATED INTO THE SURFACE OF THE CONCRETE AT THE APPROPRIATE TIME. IT CANNOT BE BROADCAST TOO EARLY OR TOO LATE IN THE FINISHING PROCESS.

4. THE CONCRETE SHALL BE FINISHED TO YIELD A SMOOTH (STEEL TROWEL) FINISH SURFACE.

5. THE CONCRETE SHALL BE LIGHT ACID WASHED AFTER AN INITIAL CURING PERIOD OF 2 TO 5 DAYS TO EXPOSE THE AGGREGATE IN THE CONCRETE. THE INYO WHITE AGGREGATE SHALL NOT BE EXPOSED DURING THIS PROCESS.

6. DOWELED FELT EXPANSION JOINT SHALL BE PLACED AT 30' O.C. MAX SPACING AND SHALL BE ALIGNED WITH ALICANTE TEMPLATE EDGE.

7. #4 STEEL DOWEL SHALL BE 18" LONG AT 24" O.C. AND CENTERED ON JOINT.

8. FELT JOINT FILLER SHALL BE PER CITY OF GARDEN GROVE STANDARD SIDEWALK DETAIL B-106.

9. SAWCUT CONTROL JOINTS SHALL BE PLACED IN THE CONCRETE AT 10' O.C., PERPENDICULAR TO THE STREET CENTERLINE, TO A MINIMUM OF 3" DEPTH AS SHOWN IN THE DETAIL ON SHEET 1.

10. TEMPLATE SANDBLAST MATS ARE APPLIED TO THE CONCRETE AFTER A MINIMUM OF ONE WEEK OF CURING. THE CONCRETE SHALL BE SANDBLASTED TO EXPOSE THE INYO WHITE AGGREGATE AND CREATE THE ALICANTE (WAVE) PATTERN.

11. THE CONCRETE SHALL BE CLEANED AFTER SANDBLASTING, AND THEN SEALED WITH PENETRATING SEALER SINAK HLQ-125, OR APPROVED EQUAL.

12. EXISTING "ALICANTE" SIDEWALK CAN BE FOUND ON EITHER SIDE OF HARBOR BOULEVARD BETWEEN LAMPSON AVENUE AND TWINTREE LANE.

GARDEN GROVE

City of Garden Grove California

HARBOR BOULEVARD DECORATIVE SIDEWALK IMPROVEMENTS

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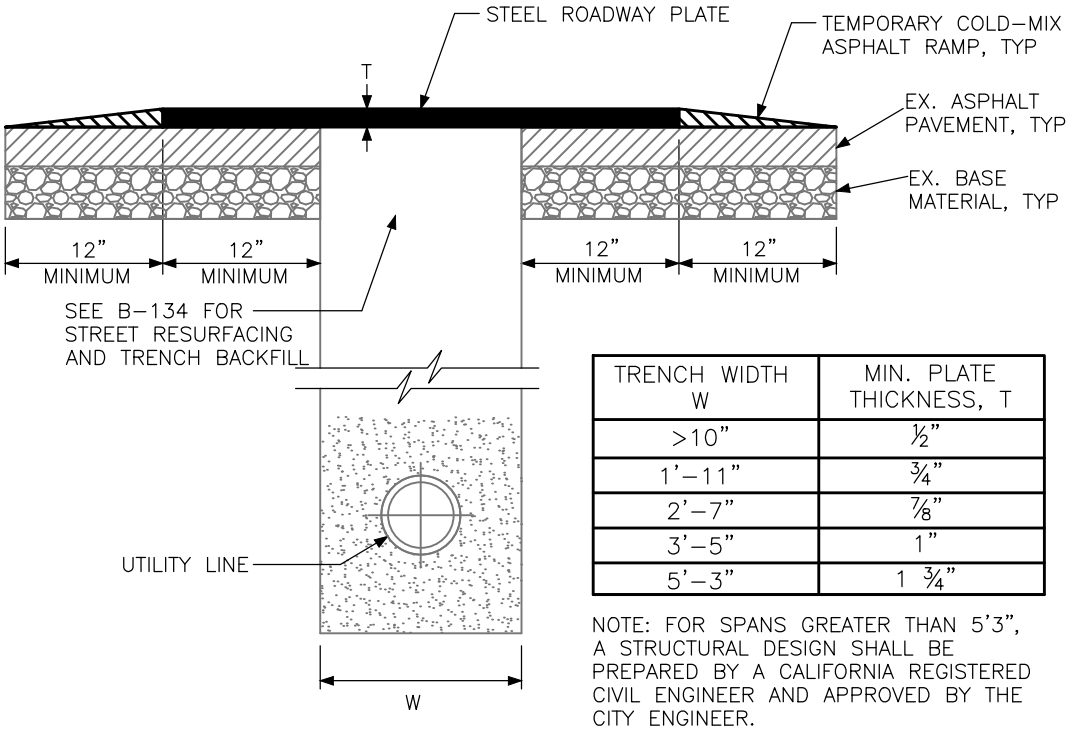
SHEET 2 OF 2

TEMPORARY STEEL ROADWAY PLATE DETAIL



TRENCH WIDTH W	MIN. PLATE THICKNESS, T
>10"	½"
1'–11"	¾"
2'–7"	⅞"
3'–5"	1"
5'–3"	1 ¾"

NOTE: FOR SPANS GREATER THAN 5'3", A STRUCTURAL DESIGN SHALL BE PREPARED BY A CALIFORNIA REGISTERED CIVIL ENGINEER AND APPROVED BY THE CITY ENGINEER.

INSTALLATION NOTE:

APPROACH PLATE(S) AND ENDING PLATE (IF LONGITUDINAL PLACEMENT) SHALL BE ATTACHED TO THE ROADWAY BY A MINIMUM OF 2 DOWELS PRE–DRILLED INTO THE CORNERS OF THE PLATE AND DRILLED 2" INTO THE PAVEMENT. SUBSEQUENT PLATES ARE TO BE BUTTED AND TACK WELDED TO EACH OTHER. FINE GRADED TEMPORARY COLD–MIX ASPHALT SHALL BE COMPACTED TO FORM RAMPS WITH A MINIMUM 12" TAPER TO COVER ALL EDGES OF THE STEEL PLATES. WHEN STEEL PLATES ARE REMOVED, THE DOWEL HOLES IN THE PAVEMENT SHALL BE BACKFILLED WITH EITHER GRADED FINES OF ASPHALT CONCRETE MIX, CONCRETE SLURRY, EPOXY, OR AN EQUIVALENT THAT IS SATISFACTORY TO THE ENGINEER.

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF THE STEEL PLATES, SHORING, TEMPORARY ASPHALT RAMPS, AND ENSURING THAT THEY MEET THE MINIMUM SPECIFICATIONS. THESE STEEL PLATES SHALL REMAIN IN PLACE A MAXIMUM OF FIVE (5) DAYS; AFTER WHICH TIME THE PLATES SHALL BE REMOVED AND THE TRENCH BACKFILLED UNLESS OTHERWISE APPROVED IN WRITING BY THE ENGINEER.

2. ALL STEEL PLATES WITHIN THE RIGHT OF WAY WHETHER USED IN OR OUT OF THE TRAVELED WAY SHALL BE WITHOUT DEFORMATION.

3. STEEL PLATES USED IN THE TRAVELED PORTION OF THE HIGHWAY SHALL HAVE A SURFACE THAT WAS MANUFACTURED WITH A NOMINAL COEFFICIENT OF FRICTION OF 0.35 AS DETERMINED BY CALIFORNIA TEST METHOD 342. IF A DIFFERENT TEST METHOD IS USED, THE CONTRACTOR MAY UTILIZE STANDARD TEST PLATES WITH KNOWN COEFFICIENTS OF FRICTION AVAILABLE FROM EACH CALTRANS DISTRICT MATERIALS ENGINEER TO CORRELATE SKID RESISTANCE RESULTS TO CALIFORNIA TEST METHOD 342.

4. FRICTION REQUIREMENTS ARE NOT REQUIRED FOR STEEL PLATES USED IN PARKING STRIPS, ON SHOULDERS NOT USED FOR TURNING MOVEMENTS, OR ON CONNECTING DRIVEWAYS, ETC. NOT OPEN TO THE PUBLIC.

City of Garden Grove California

GARDEN GROVE

UTILITY TRENCH STEEL PLATE REQUIREMENTS

Approved _____ Date 12–8–15

City Engineer R.C.E. 52125 Exp.12–31–16

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