

1) SIDEWALK TRANSITIONS

- A: LOCATED ADJACENT TO THE TOP OF RAMP AS NEEDED
- B: 48" MINIMUM WIDTH
- C: 1.5% (1:66) MAXIMUM CROSS SLOPE
- D: 4.5% (1:22) MAXIMUM PARALLEL SLOPE

2) LANDINGS

- A: LOCATED ABOVE OR BELOW RAMP (AS SHOWN IN DETAILS)
- B: 48" MINIMUM CLEAR SPACE IN ALL DIRECTIONS
- C: 1.5% (1:66) MAXIMUM PARALLEL AND CROSS SLOPE

3) RAMPS

- A: LOCATED ABOVE PAN OR BELOW LANDING
- B: 48" MINIMUM WIDTH
- C: 1.5% (1:66) MAXIMUM CROSS SLOPE
- D: 7.5% (1:13) MAXIMUM SLOPE
- E: ALL RAMPS SHALL HAVE A DETECTABLE WARNING SURFACE (TRUNCATED DOMES) AND SHALL BE PLACED ON THE RAMP UNLESS THE RAMP IS CONNECTED TO A PAN.
- F: TRANSITION TO GUTTER SHALL BE FLUSH AND FREE OF ABRUPT CHANGES
- G: GRADE BREAKS SHALL BE PERPENDICULAR TO DIRECTION OF RAMP RUN

4) PANS

- A: LOCATED BELOW RAMP (AS SHOWN IN DETAILS)
- B: 60" MINIMUM AT BACK OF PAN
- C: 54" MINIMUM FROM BACK OF PAN TO FLOW LINE
- D: 1.5% (1:66) MAXIMUM CROSS SLOPE
- E: ON CORNERS, PAN BOUNDARIES ARE TO BE RADIAL
- F: TRANSITIONS TO GUTTER SHALL BE FLUSH AND FREE OF ABRUPT CHARGES.
- G: ALL PANS SHALL HAVE A DETECTABLE WARNING SURFACE (TRUNCATED DOMES).

5) FLARES

- A: LOCATED ADJACENT TO RAMP (AS SHOWN IN DETAILS)
- B: REQUIRED BETWEEN RAMPS WHERE THERE IS NO PLANTER AREA
- C: REQUIRED ON THE EXTERIOR OF RAMPS WHERE THERE IS AN ADJACENT CONCRETE SIDEWALK, REGARDLESS OF OBSTACLES
- D: SHALL ALSO HAVE AT LEAST 24" LONG SEGMENT OF STRAIGHT CURB LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN MARKED CROSSINGS.
- E: GENERALLY TRIANGULAR IN NATURE
- F: 9% (1:11) MAXIMUM SLOPE WHEN NOT IN THE PATH OF TRAVEL
- G: 7.5% (1:13) MAXIMUM SLOPE WHEN FLARE IS IN THE PATH OF TRAVEL

6) GUTTERS

- A: ADJACENT TO RAMP OR PAN
- B: 4.5% (1:22) MAXIMUM SLOPE FOR 4' OUT FROM FLOW LINE
- C: TRANSITION TO RAMP OR PAN SHALL BE FLUSH AND FREE OF ABRUPT CHANGES

7) RETAINING CURBS

- A: REQUIRED ADJACENT TO SIDEWALK TRANSITIONS, LANDINGS, RAMPS AND PANS WHERE THE EXISTING LANDSCAPE (PLANTER AREA) IS 1" OR HIGHER AT ANY POINT ABOVE THE NEWLY CONSTRUCTED CURB RAMP ELEMENT
- B: REQUIRED FOR EXISTING PLANTER AREAS BETWEEN RAMPS
- C: RETAINING CURBS ARE TO HAVE A 6" WIDTH AND A VERTICAL FACE
- D: RETAINING CURB FOUNDATIONS ARE TO EXTEND 8" BELOW THE ADJACENT RAMP ELEMENT SURFACE
- E: OUTSIDE CORNERS OF RETAINING CURBS MUST HAVE A 6" RADIUS

8) DETECTABLE WARNINGS

- A: PLACEMENT OF DETECTABLE WARNINGS SHALL BE PER DRAWINGS AR - 3.2A AND AR - 3.2B.
- B: 6"-8" FROM THE FLOW LINE
- C: 3' DEPTH X FULL WIDTH
- D: DETECTABLE WARNING REQUIREMENTS, SEE AR - 3.1

NOTES:

1. DIRECTIONAL CURB RAMPS ARE REQUIRED UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. ALL ELEMENTS, EXCEPT GUTTERS AND RETAINING CURBS, MUST BE CONSTRUCTED PLANAR IN NATURE WITH WEAKENED PLANE JOINTS SCORED BETWEEN EACH ELEMENT.
3. OPPOSING CURB RAMPS SHALL ALIGN UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. THESE ELEMENTS, DEFINITIONS AND STANDARDS, GENERAL DETAILS, AND STANDARD DRAWINGS SHALL APPLY TO ALL CURB AND GUTTER TYPES.
5. THERE ARE VARIATIONS AND ADJUSTMENTS THAT MAY BE REQUIRED UPON THE APPROVAL OF THE ENGINEER.
6. REFERENCES TO MAXIMUM CROSS SLOPE OF 1.5% ARE INTENDED TO ALLOW FOR NORMAL CONSTRUCTION TOLERANCES IN AN EFFORT TO KEEP THE ACTUAL CONSTRUCTED CROSS SLOPE TO LESS THAN THE REQUIRED ADA STANDARD OF 2.0% MAXIMUM CROSS SLOPE. ANY INSTALLATIONS OF CROSS SLOPES GREATER THAN 2.0% WILL BE UNACCEPTABLE.

DATE 09/22/2017		NOT TO SCALE	
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01	LM	TW	07/18/2019
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**CURB RAMP ELEMENTS  
DEFINITIONS AND STANDARDS**


APPROVED BY:

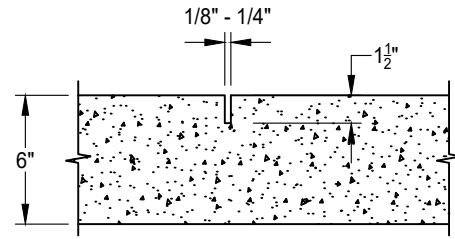
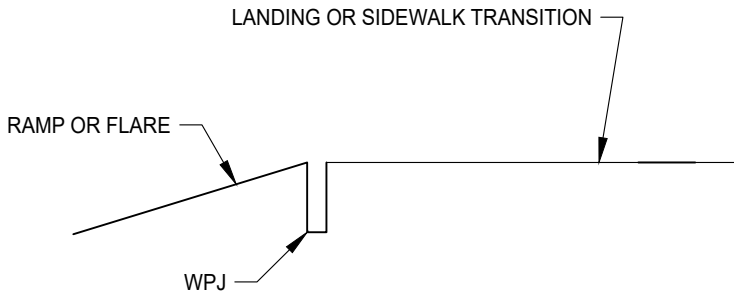
*Paul Murod*      02/26/2021

CITY ENGINEER      DATE

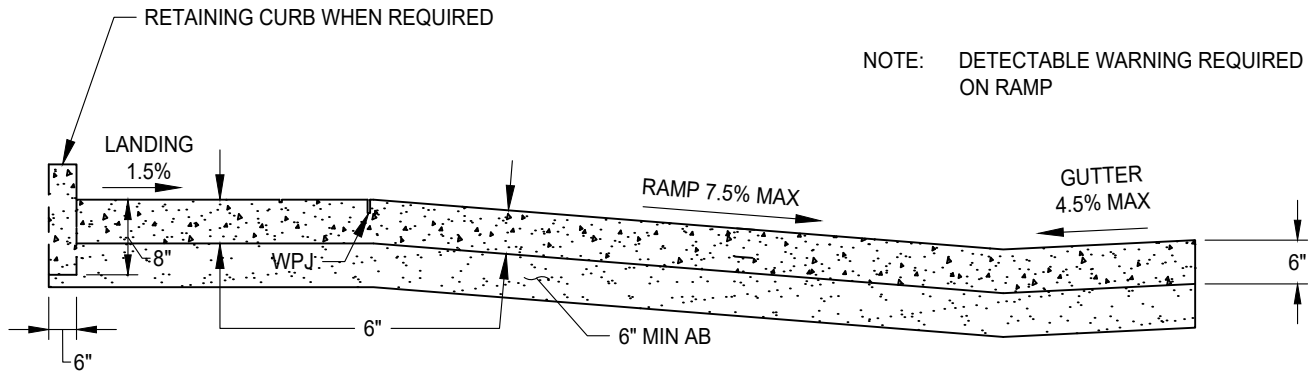
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**AR - 2.0**



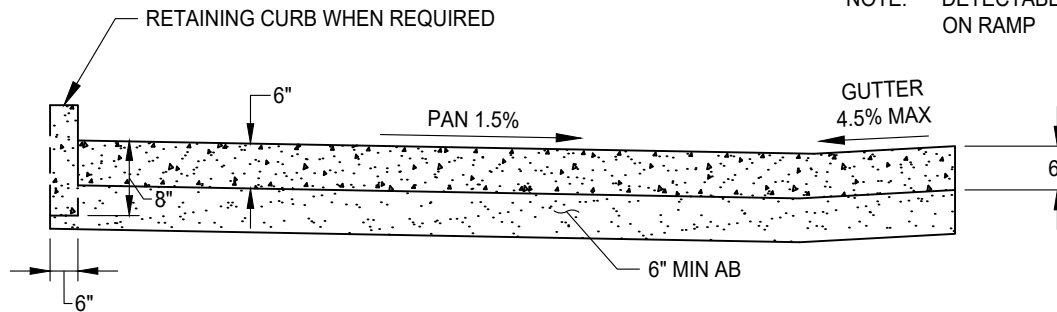


**WEAKENED PLANE JOINT (WPJ)**



NOTE: DETECTABLE WARNING REQUIRED ON RAMP

**TYPICAL CROSS SECTION FOR CENTER LINE OF FLARE, COMBO OR PLANTER STRIP CURB RAMP**



NOTE: DETECTABLE WARNING REQUIRED ON RAMP

**TYPICAL CROSS SECTION FOR CENTER LINE OF PAN CURB RAMP**

**NOTES:**


1. SURFACE OF RAMPS AND PANS SHALL HAVE A TRANSVERSE BROOM SURFACE TEXTURE ROUGHER THAN ADJACENT SIDEWALK.
2. COLORING SHALL BE ADDED TO NEW CONCRETE AS NECESSARY TO MATCH EXISTING COLOR.

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**CURB RAMP GENERAL DETAILS**

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 CITY ENGINEER      DATE: 02/26/2021

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DRAWING NUMBER  
**AR - 3.0**



DETECTABLE WARNING SURFACES MUST MEET THE FOLLOWING CRITERIA:

1) A WRITTEN 5-YEAR PRODUCT WARRANTY FOR SHAPE, COLOR FASTNESS, SOUND-ON-CANE ACOUSTIC QUALITY, RESILIENCE, AND ATTACHMENT:

- A. SHAPE:  
MUST BE ABLE TO RETAIN ITS ORIGINAL SHAPE WHEN SUBJECTED TO VARYING DEGREES OF TEMPERATURE, MOISTURE, PRESSURE, OR OTHER STRESS.
- B. COLOR FASTNESS:  
THE ABILITY OF THE MATERIAL OR COATING TO RETAIN ITS ORIGINAL HUE WITHOUT FADING OR CHANGING WHEN EXPOSED TO ENVIRONMENTAL CONDITIONS.
- C. SOUND-ON-CANE ACOUSTIC QUALITY:  
THE ABILITY OF A MATERIAL TO RETAIN ITS ORIGINAL SOUND CHARACTERISTICS WHEN IMPACTED BY AN OBJECT.
- D. RESILIENCE:  
THE ABILITY OF THE MATERIAL TO ABSORB ENERGY WHEN DEFORMED ELASTICALLY WITHOUT CREATING A PERMANENT DEFORMATION.
- E. ATTACHMENT:  
ATTACHMENT WILL NOT DEGRADE SIGNIFICANTLY FOR *AT LEAST FIVE (5) YEARS AFTER INITIAL INSTALLATION* - MEANING THE PRODUCT MAINTAINS AT LEAST 90% OF ORIGINAL PRODUCT AND BOND. BOLT DOWN PRODUCTS SHALL NOT BE USED.

2) CONFIRMATION - A WRITTEN DIMENSIONAL SPECIFICATION:

A WRITTEN DIMENSIONAL SPECIFICATION OF THE TRUNCATED DOMES AND RAISED BARS AS SPECIFIED IN THE CODES - SEE BELOW DIMENSIONS:

- A. BASE DIAMETER: 0.9" TO 0.92"
- B. TOP DIAMETER: 0.45" TO 0.47"
- C. CENTER-TO-CENTER SPACING 2.3" TO 2.4"
- D. HEIGHT: 0.18" TO 0.22"

3) LIGHT ON DARK OR DARK ON LIGHT:

70% CONTRAST WITH ADJOINING SURFACES - CONTRAST =  $[(B1 - B2)/B1] \times 100$  PERCENT, WHERE B1 = LIGHT REFLECTANCE VALUE (LRV) OF THE LIGHTER AREA, B2 = LRV OF THE DARKER AREA.

4) METHODS OF INSTALLATIONS:

CAST-IN-PLACE (REQUIRED FOR ALL NEW CONSTRUCTION) OR SURFACE MOUNT (RETROFIT ONLY).

5) SIZE:

3' DEPTH BY FULL WIDTH.

6) COLOR:

COLOR SHALL BE DARK GRAY #36118 OF FED-STD-595 UNLESS SPECIFIED OTHERWISE.




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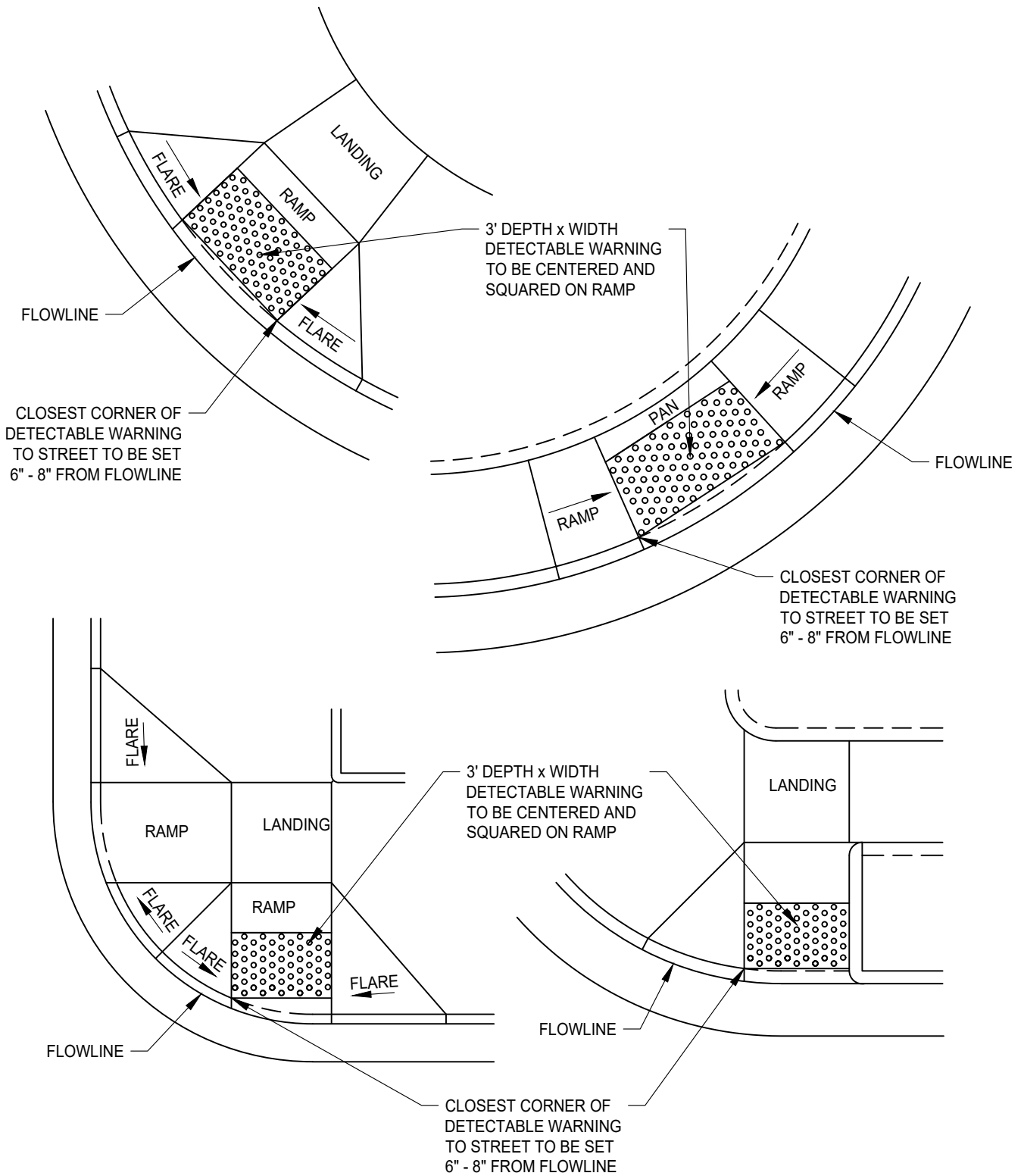
**DETECTABLE WARNING SPECIFICATIONS**

APPROVED BY:  05-28-2024  
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DRAWING NUMBER  
**AR - 3.1**





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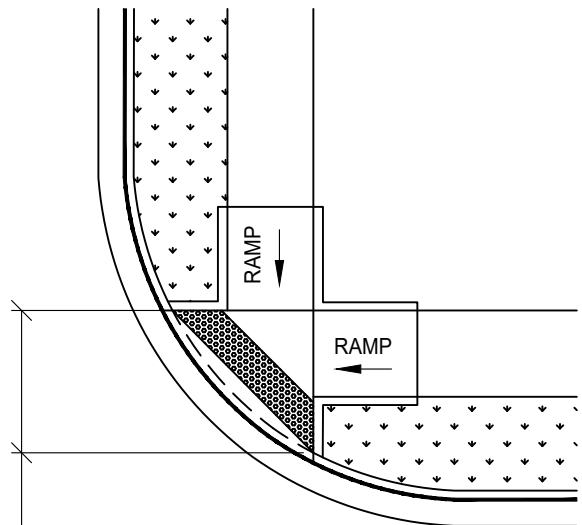
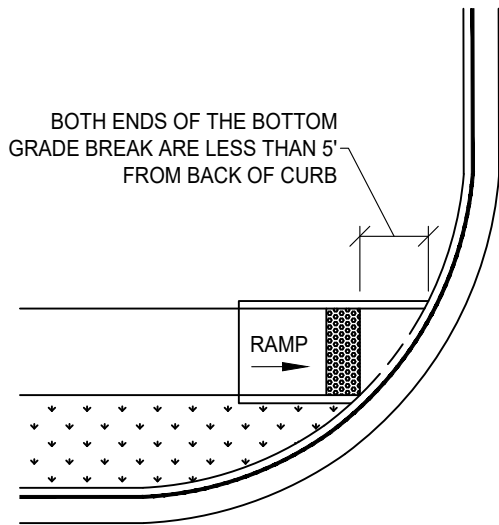
**DETECTABLE WARNING  
STANDARD LAYOUT**

APPROVED BY:  
*Paul Murbach*  
CITY ENGINEER

1/16/2020  
DATE

DRAWING NUMBER  
**AR - 3.2A**





ONE OR BOTH ENDS OF THE BOTTOM GRADE BREAK ARE GREATER THAN 5' FROM BACK OF CURB

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**DETECTABLE WARNING  
STANDARD LAYOUT**

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*Paul Murbach*  
CITY ENGINEER

1/16/2020  
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**AR - 3.2B**

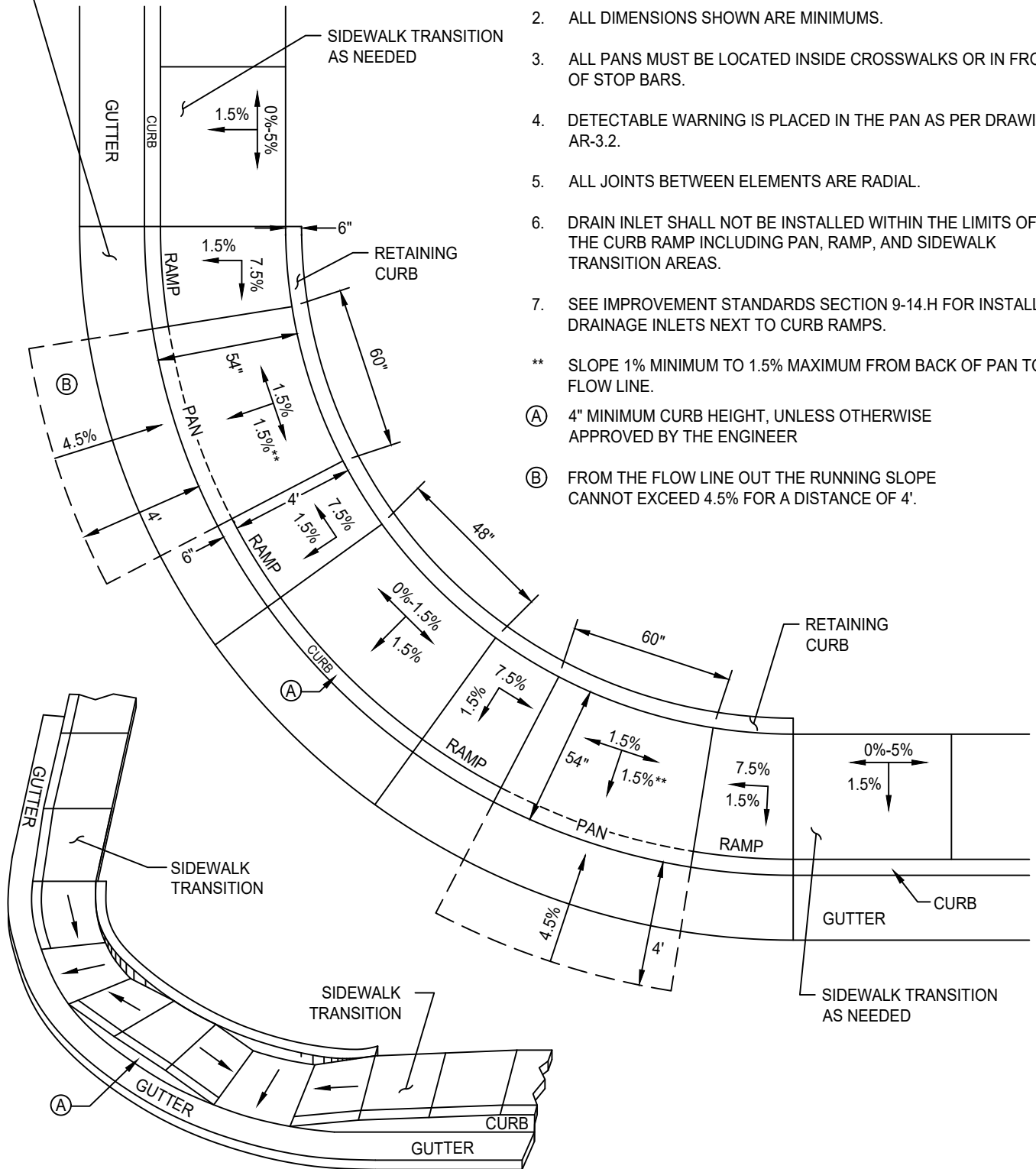


TRANSITION GUTTER CROSS SLOPE TO 4.5% ALONG TOTAL LENGTH OF AREA OF RAMPED PORTION (TYP.)

**NOTES:**

1. ALL SLOPES SHOWN ARE MAXIMUMS.
2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
3. ALL PANS MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS.
4. DETECTABLE WARNING IS PLACED IN THE PAN AS PER DRAWING AR-3.2.
5. ALL JOINTS BETWEEN ELEMENTS ARE RADIAL.
6. DRAIN INLET SHALL NOT BE INSTALLED WITHIN THE LIMITS OF THE CURB RAMP INCLUDING PAN, RAMP, AND SIDEWALK TRANSITION AREAS.
7. SEE IMPROVEMENT STANDARDS SECTION 9-14.H FOR INSTALLING DRAINAGE INLETS NEXT TO CURB RAMPS.

- \*\* SLOPE 1% MINIMUM TO 1.5% MAXIMUM FROM BACK OF PAN TO FLOW LINE.
- (A) 4" MINIMUM CURB HEIGHT, UNLESS OTHERWISE APPROVED BY THE ENGINEER
- (B) FROM THE FLOW LINE OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'.



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**CITY OF ELK GROVE - PUBLIC WORKS**

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**DUAL PARALLEL CURB RAMPS**

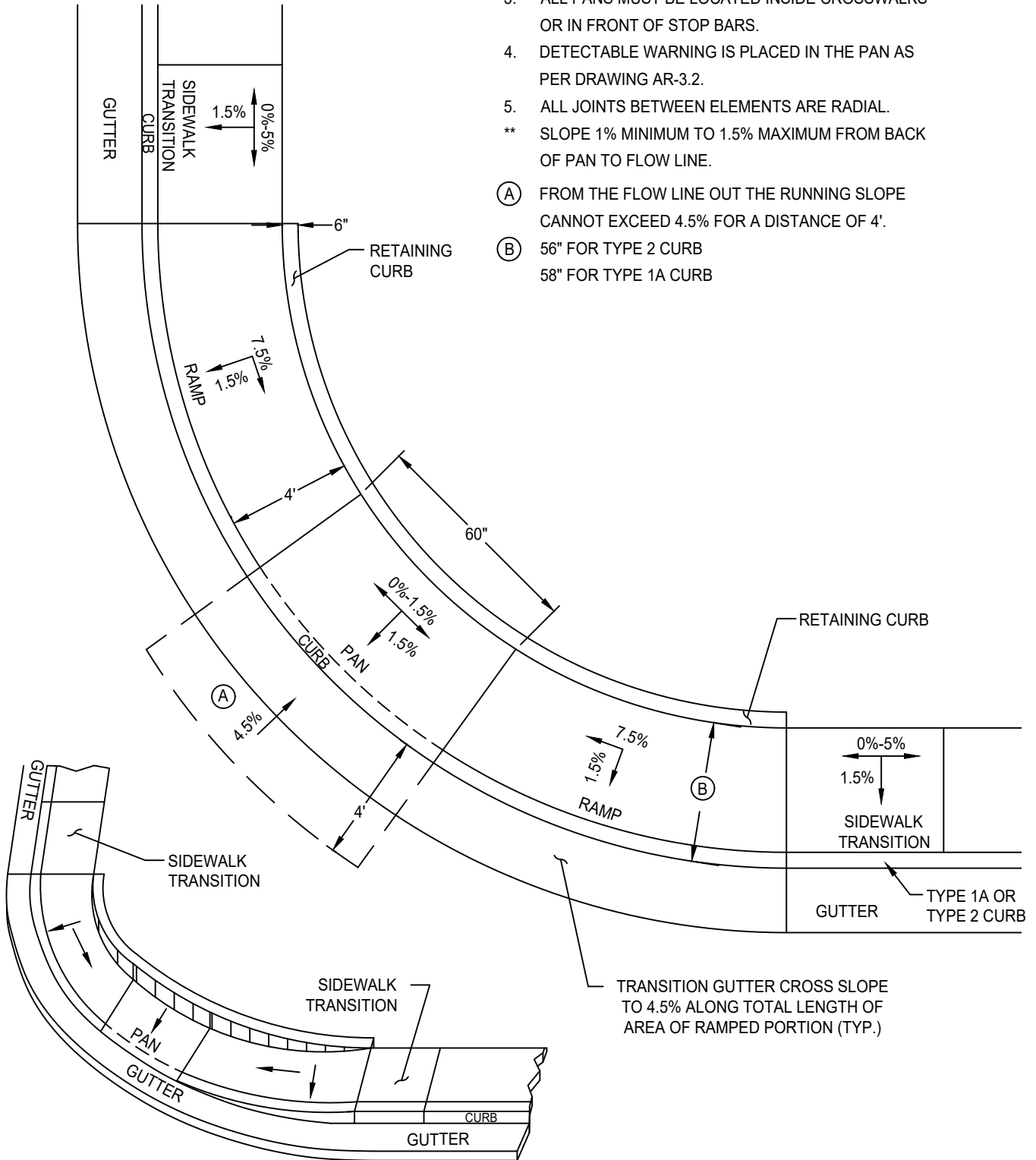
APPROVED BY:  
*Jeffrey B. Wan* 03-12-2024  
CITY ENGINEER DATE

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**AR - 4.1**



**NOTES:**

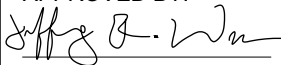
1. ALL SLOPES SHOWN ARE MAXIMUMS.
  2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
  3. ALL PANS MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS.
  4. DETECTABLE WARNING IS PLACED IN THE PAN AS PER DRAWING AR-3.2.
  5. ALL JOINTS BETWEEN ELEMENTS ARE RADIAL.
  - \*\* SLOPE 1% MINIMUM TO 1.5% MAXIMUM FROM BACK OF PAN TO FLOW LINE.
- (A) FROM THE FLOW LINE OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'.
- (B) 56" FOR TYPE 2 CURB  
58" FOR TYPE 1A CURB




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**SINGLE PARALLEL CURB RAMP  
FOR UNCONTROLLED  
T-INTERSECTIONS**

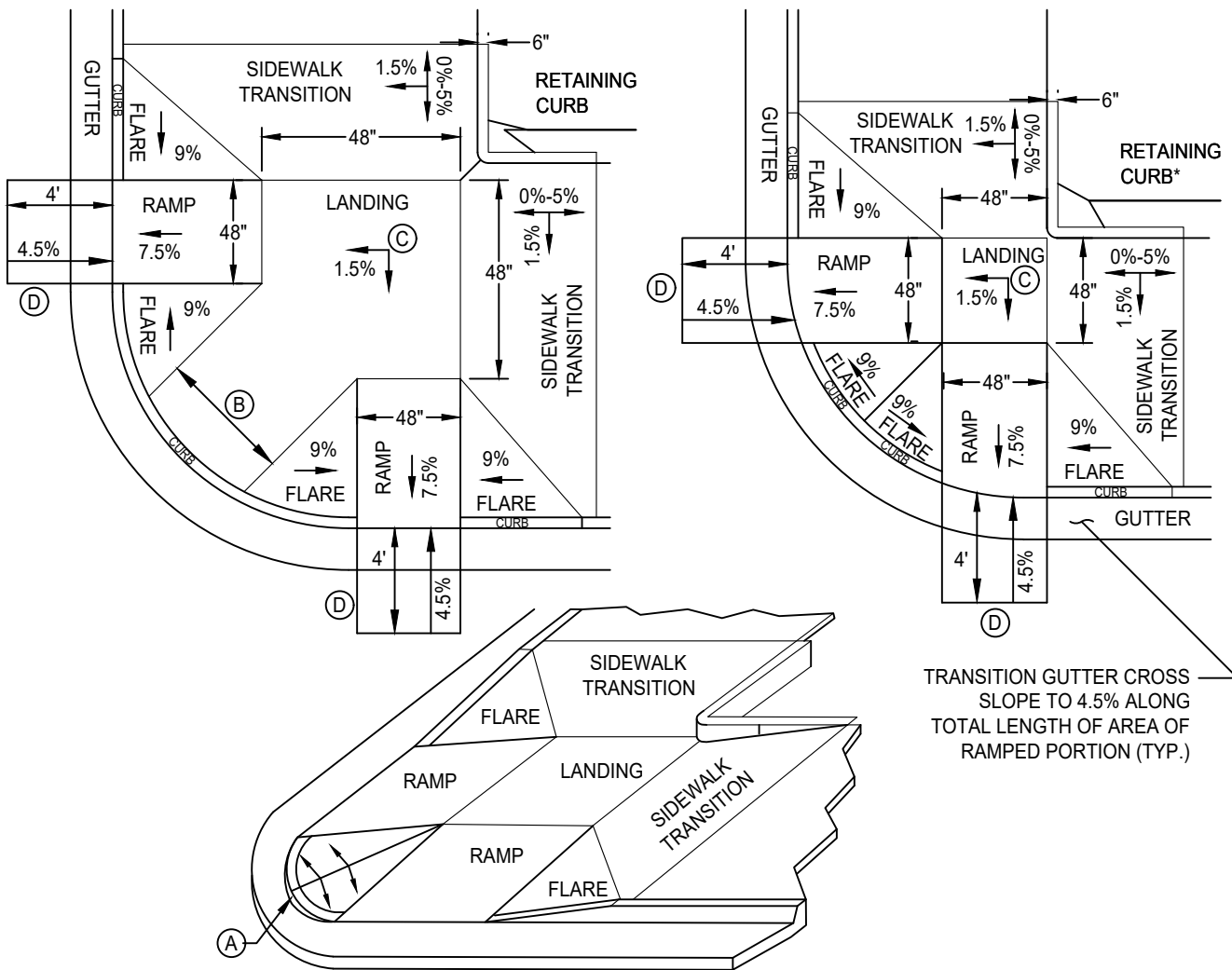
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 CITY ENGINEER      DATE: 04-25-2023

DRAWING NUMBER  
**AR - 4.2**



**NOTES:**

1. ALL SLOPES SHOWN ARE MAXIMUMS.
  2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
  3. THE RAMP MUST BE LOCATED INSIDE CROSSWALKS OR PRIOR TO STOP BARS.
  4. DETECTABLE WARNING SURFACE IS PLACED IN THE RAMP PER STANDARD DRAWING AR-3.2A and AR-3.2B.
  5. IF THE FLARE IS IN THE PATH OF TRAVEL THEN THE SLOPE SHALL NOT EXCEED 7.5%.
- (A) 4" MINIMUM CURB HEIGHT DESIRABLE - 9% MAX SLOPE CONTROLS CURB HEIGHT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- (B) NO MINIMUM DIMENSION. FLARES CAN INTERSECT.
- (C) ALL RAMPS WILL HAVE A MINIMUM OF 48" x 48" LANDING. TWO RAMPS CAN SHARE ONE LANDING.
- (D) FROM THE FLOW LINE OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'.




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**DUAL FLARE CURB RAMPS  
WITH ATTACHED SIDEWALK**

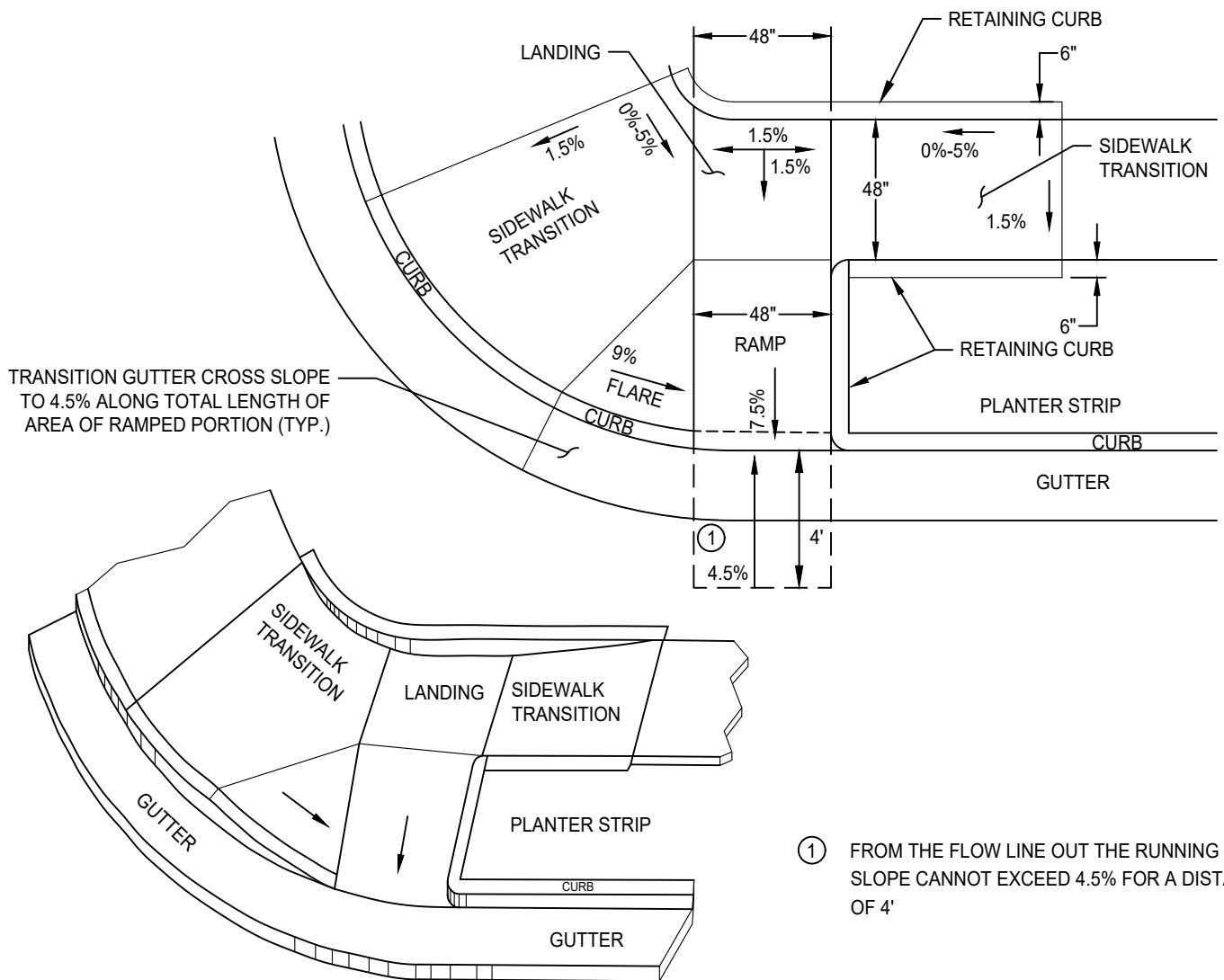
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DRAWING NUMBER  
**AR - 4.3**



**NOTES:**

- A. ALL SLOPES SHOWN ARE MAXIMUMS.
- B. ALL DIMENSIONS SHOWN ARE MINIMUMS.
- C. RAMP MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS
- D. DETECTABLE WARNING SURFACE IS PLACED IN THE RAMP PER STANDARD DRAWING AR-3.2A AND AR-3.2B.
- E. ALL JOINTS BETWEEN ELEMENTS, EXCEPT BETWEEN RAMP AND FLARE ARE RADIAL. RAMP WIDTH REMAINS CONSTANT.
- F. IF THE FLARE IS IN THE PATH OF TRAVEL THEN THE SLOPE SHALL NOT EXCEED 7.5%.
- G. SINGLE RAMPS SHALL BE CONSTRUCTED PARALLEL TO CROSSING DIRECTION.




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**SINGLE PERPENDICULAR CURB RAMP**

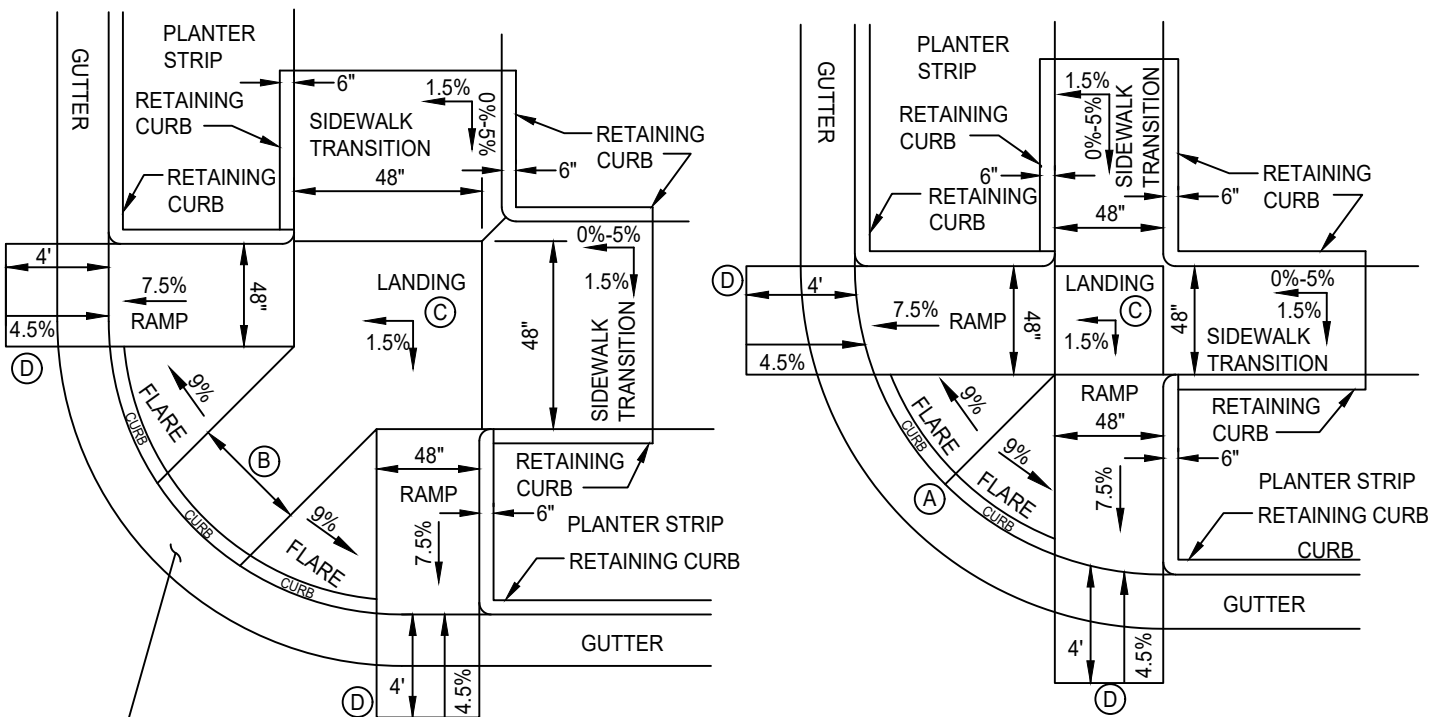
APPROVED BY: \_\_\_\_\_ 05-28-2024  
CITY ENGINEER DATE

DRAWING NUMBER  
**AR - 4.4**

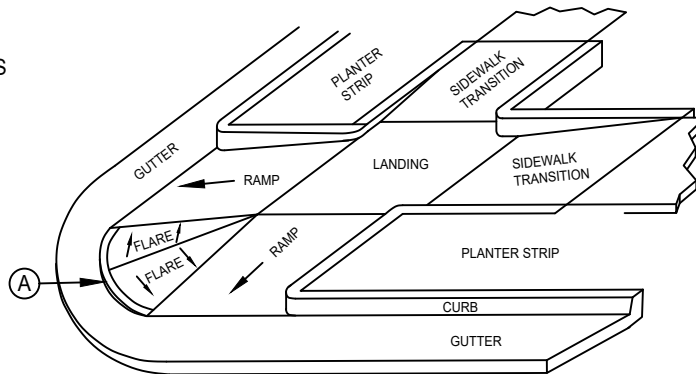


**NOTES:**

1. ALL SLOPES SHOWN ARE MAXIMUMS.
  2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
  3. THE RAMP MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS.
  4. DETECTABLE WARNING IS PLACED IN THE RAMP AND AS PER DRAWING AR-3.2A AND AR-3.2B.
  5. IF THE FLARE IS IN THE PATH OF TRAVEL THEN THE SLOPE SHALL NOT EXCEED 7.5%.
- (A) 4" MINIMUM CURB HEIGHT DESIRABLE - 9% MAX SLOPE CONTROLS CURB HEIGHT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- (B) NO MINIMUM DIMENSION. FLARES CAN INTERSECT.
- (C) ALL RAMPS WILL HAVE A MINIMUM OF 48" x 48" LANDING. TWO RAMPS CAN SHARE ONE LANDING.
- (D) FROM THE FLOW LINE OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'.



TRANSITION GUTTER CROSS SLOPE TO 4.5% ALONG TOTAL LENGTH OF AREA OF RAMPED PORTION (TYP.)




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**DUAL FLARED PERPENDICULAR CURB RAMPS WITH DETACHED SIDEWALK**

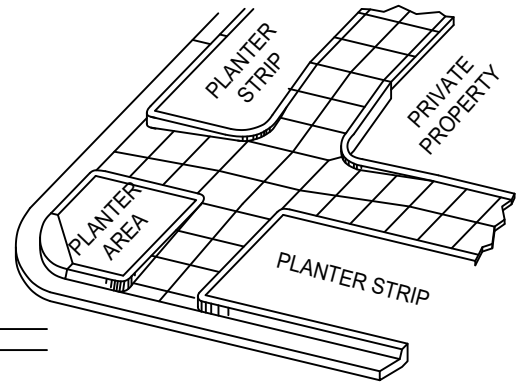
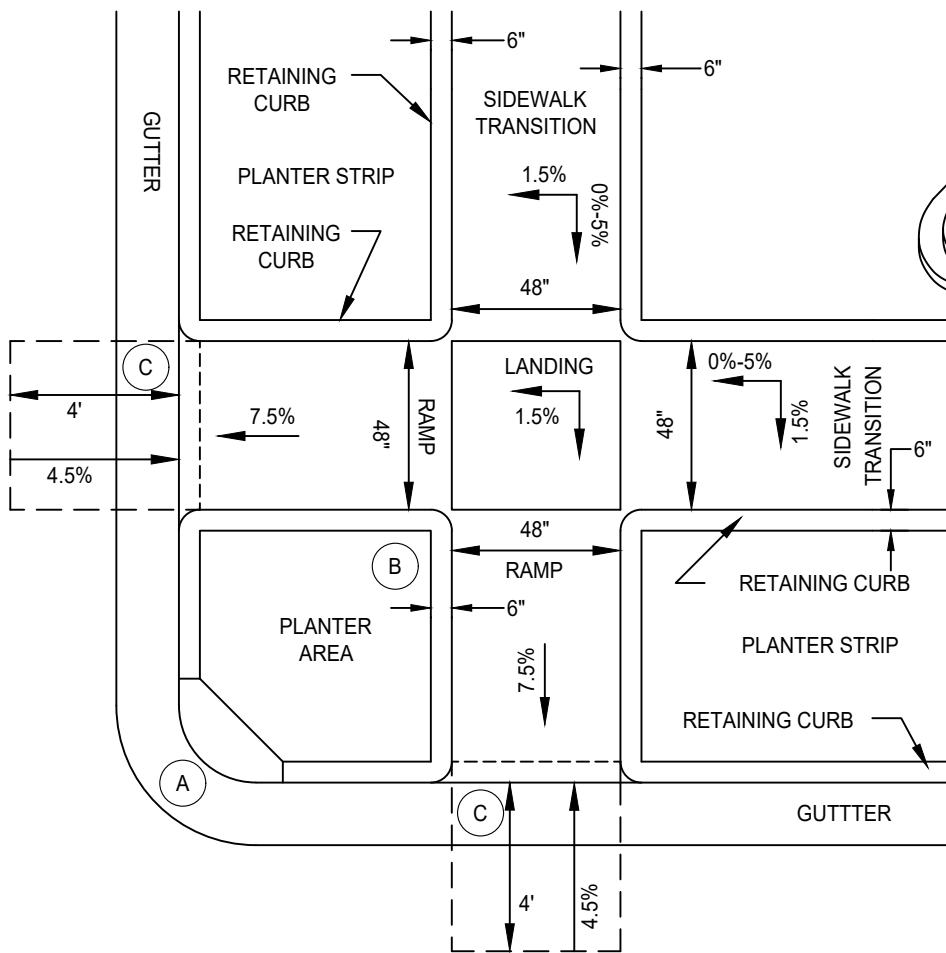
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DRAWING NUMBER  
**AR - 4.5**



**NOTES:**

1. ALL SLOPES SHOWN ARE MAXIMUMS.
  2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
  3. ALL RAMPS MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS.
  4. DETECTABLE WARNING IS PLACED IN THE RAMP AND AS PER DRAWING AR-3.2A AND AR-3.2B.
  5. ADD LAMP BLACK TO NEW CONCRETE AS DIRECTED BY ENGINEER. MATCH EXISTING COLOR.
- (A) STANDARD CURB HEIGHT TO MATCH EXISTING.
- (B) TOP OF RETAINING CURB TO MATCH ADJACENT RETAINING CURB ELEVATIONS CAN BE FLUSH WITH LANDING.
- (C) FROM THE FLOW LINE OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'.




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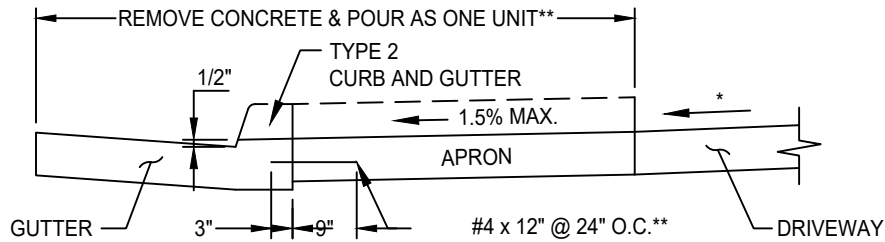
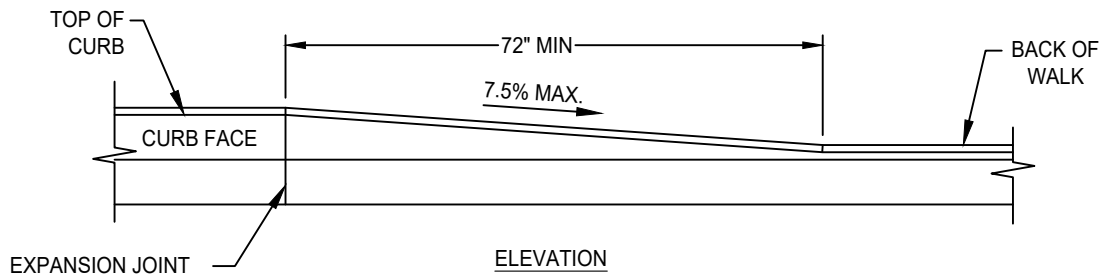
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**DUAL PERPENDICULAR CURB  
RAMPS WITH DETACHED SIDEWALK**

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**AR - 4.6**

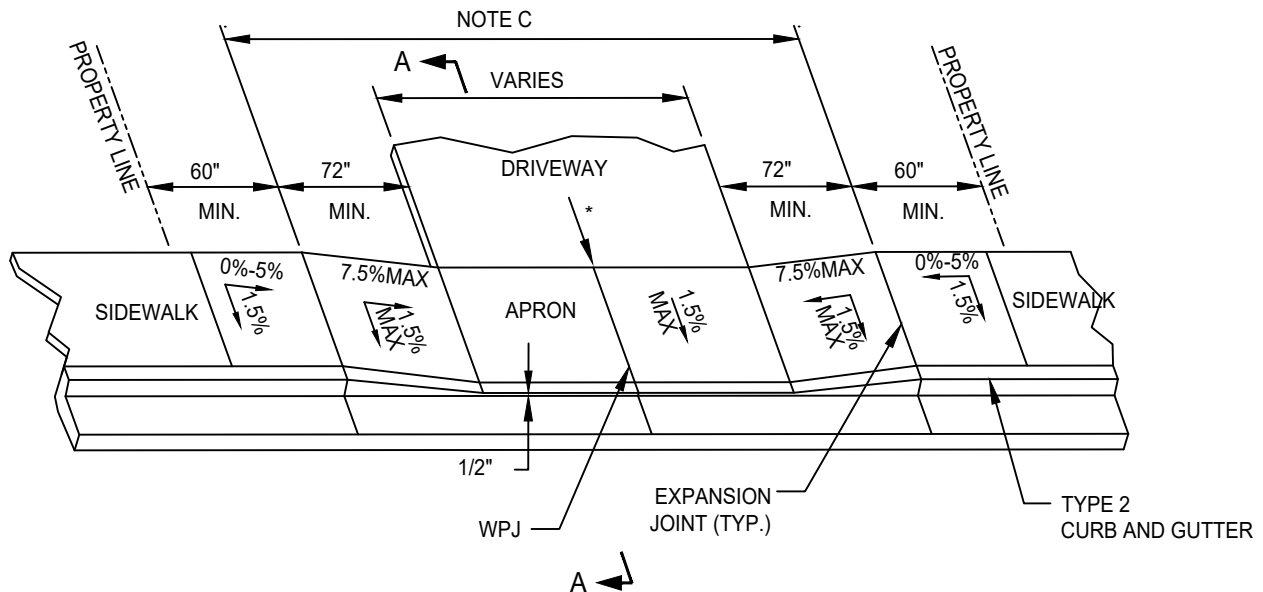




SECTION A-A

**NOTES:**

- A. DRIVEWAY WIDTH AS PER CITY CODE.
- B. WEAKENED PLANE JOINTS (WPJ) REQUIRED ON CENTERLINE FOR DRIVEWAYS 10' TO 20' WIDE. DRIVEWAYS 22' TO 35' WIDE SHALL HAVE TWO WPJ EVENLY SPACED AT  $\frac{1}{3}$  AND  $\frac{2}{3}$  POINTS.
- C. THICKNESS OF APRONS SHALL BE 6" ON RESIDENTIAL AND COMMERCIAL DRIVEWAYS.
- D. APRON WILL BE DEPRESSED ON CURB AND GUTTER WHEN RECONSTRUCTING EXISTING COMMERCIAL DRIVEWAYS.
- \* SEE SECTION 4-7 OF THE IMPROVEMENT STANDARDS
- \*\* IF CURB & GUTTER ARE POURED SEPARATE OF APRON THEN DOWELS ARE REQUIRED AT BACK OF CURB.



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**SIDEWALK DRIVEWAY DETAIL**

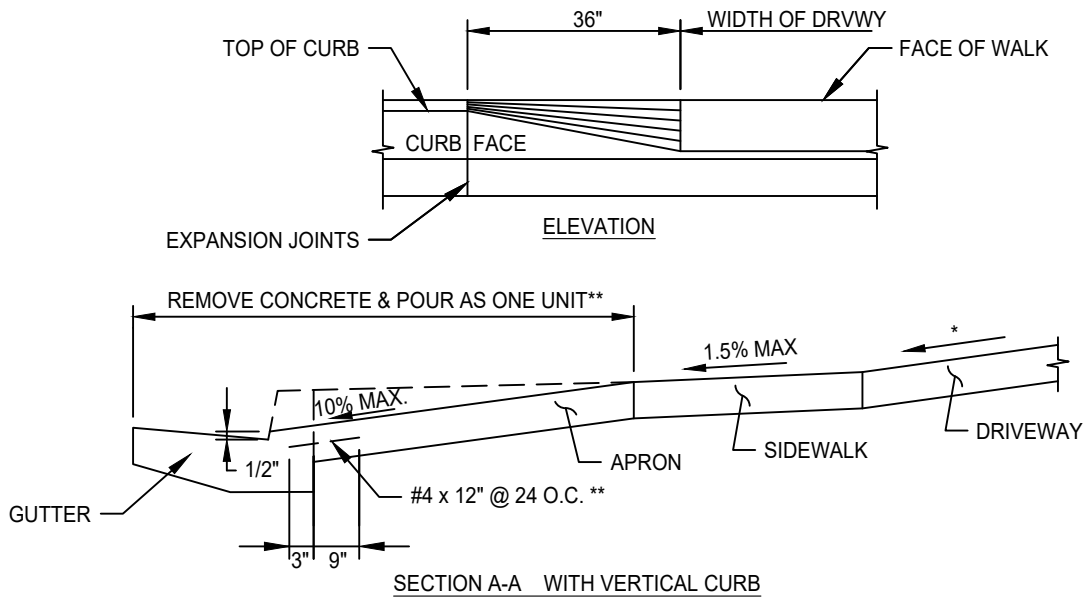
APPROVED BY:  
*Paul Murbach*  
CITY ENGINEER

02/26/2021  
DATE

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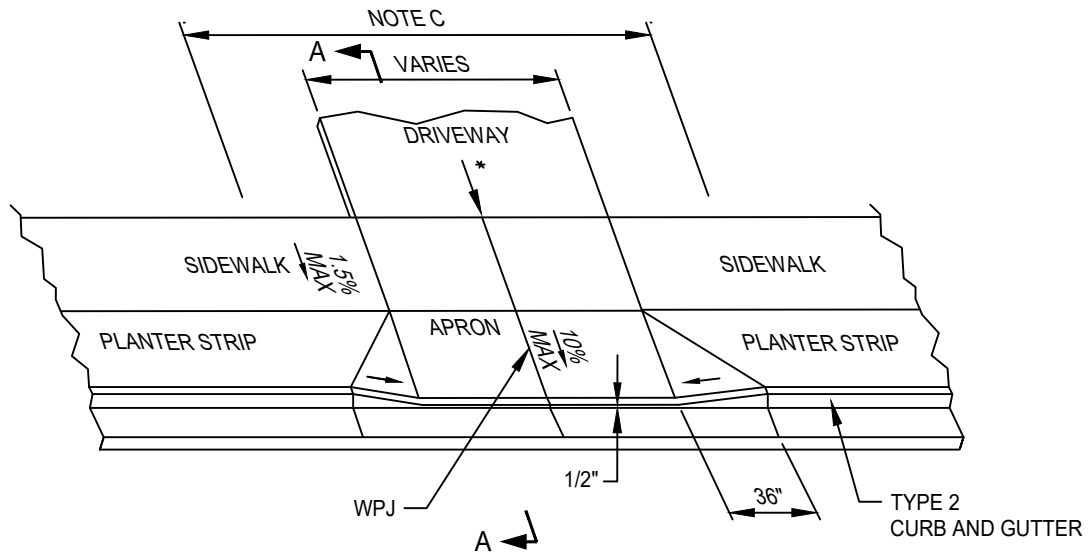
DRAWING NUMBER  
**AR - 4.7**





**NOTES:**

- A. DRIVEWAY WIDTH AS PER CITY CODE. \* SEE SECTION 4-7 OF THE IMPROVEMENT STANDARDS
- B. WEAKENED PLANE JOINTS (WPJ) REQUIRED ON CENTERLINE FOR DRIVEWAYS 10' TO 20' WIDE. DRIVEWAYS 22' TO 35' WIDE SHALL HAVE TWO WPJ EVENLY SPACED AT 1/3 AND 2/3 POINTS. \*\* IF CURB & GUTTER ARE Poured SEPARATE OF APRON THEN DOWELS ARE REQUIRED AT BACK OF CURB.
- C. THICKNESS OF DRIVEWAYS AND APRONS SHALL BE 6".



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**DETACHED SIDEWALK  
DRIVEWAY DETAIL**

APPROVED BY: \_\_\_\_\_ 05-28-2024  
CITY ENGINEER DATE

DRAWING NUMBER  
**AR - 4.8**

