



Standards Update Transmittal

Reference Number: **2021-04**

Standards: **Standard Drawings, AR-2.0, AR-3.0, AR-4.3, AR-4.5, AR-4.7, AR-4.8, D-2, G-1, SD-16, ST-20, ST-21B, ST-32, T-6A, T-9A**

Update:

1. Standard Drawings:

- a. AR-2.0 CURB RAMP ELEMENTS DEFINITIONS AND STANDARDS: add “or below” to note 2a; change “face of curb” to “flowline” in note 6b and 8b
- b. AR-3.0 CURB RAMP GENERAL DETAILS: change concrete section to 6” from 5.5”; change AB section to 6” from 4”
- c. AR-4.3 DUAL PERPENDICULAR CURB RAMPS WITH ATTACHED SIDEWALK: change “face of curb” to “flowline” in note D.
- d. AR-4.5 DUAL FLARED PERPENDICULAR CURB RAMPS WITH DETACHED SIDEWALK: change “face of curb” to “flowline” in note D.
- e. AR-4.7 SIDEWALK DRIVEWAY DETAIL: change note * to read “See section 4-7 of the improvement standards.”; move section A-A cut line to plan view.
- f. AR-4.8 DETACHED SIDEWALK DRIVEWAY DETAIL: change note * to read “See section 4-7 of the improvement standards.”; move section A-A cut line to plan view.
- g. D-2 DRAFTING STANDARDS: change existing line style to differentiate between the proposed condition and existing condition.
- h. G-1 EXTERIOR PERIMETER PROPERTY LINE GRADING: move property line leader to the correct line.
- i. SD-16 CENTER SUPPORT ASSEMBLY FOR MULTIPLE GRATES: add “Greenbook” to read “(APWA Greenbook Standard Plan 301)” in note 2.
- j. ST-20 COMMERCIAL DRIVEWAYS TYPE A-6: move section A-A cut line to plan view; add “sidewalk” label on plan view.
- k. ST-21B SIDEWALK RAMP FOR A-7 DRIVEWAYS WITHOUT ADDITIONAL R/W: change AB section to 6” from 4”.
- l. ST-32 CROSS GUTTER: revise to 95% compaction from 90% to match with other drawings.
- m. T-6A STREET NAME SIGN GENERAL LOCATION: change T-5 to T-5A and T-5B
- n. T-9A TYPICAL STREET CROSS SECTIONS, change (66’) to (68’), typo.



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Elk Grove, California 95758

Effect of Update:

1. Ensure that notes, provided information, and labeling on drawings are consistent with other documents and drawings.

Request for Update Initiated By:

Sang Nguyen

10/20/20

Update Reviewed for Conformity and Consistency to Standards:

Jeff Werner

2/24/2021 | 6:56 PM PST

Jeff Werner, P.E., ESD Manager

Date

Update to Standards Approved:

Bob Murdoch

2/25/2021 | 9:45 AM PST

Robert Murdoch, P.E., City Engineer

Date

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 - 3.2
- b: 6"-8" from the flow line
- c: 3' depth x full width
- d: Detectable Warning requirements, see AR - 3.1

General 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
02	STN	JRW	02/16/2021

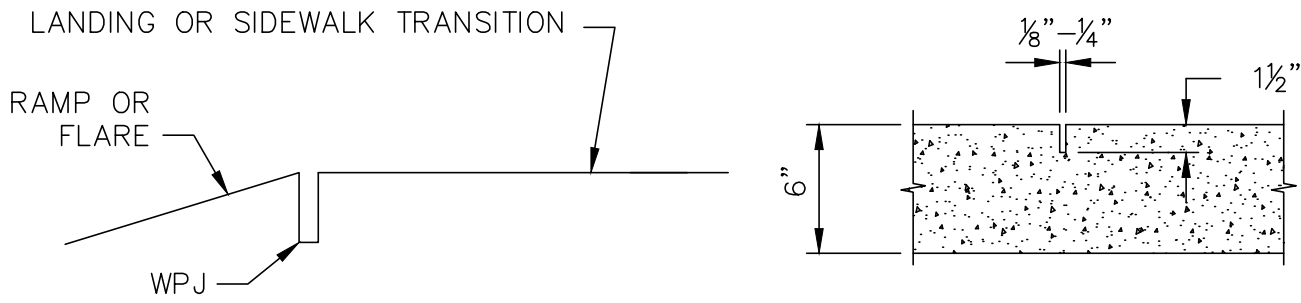
CITY OF ELK GROVE - PUBLIC WORKS

**CURB RAMP ELEMENTS
DEFINITIONS AND STANDARDS**

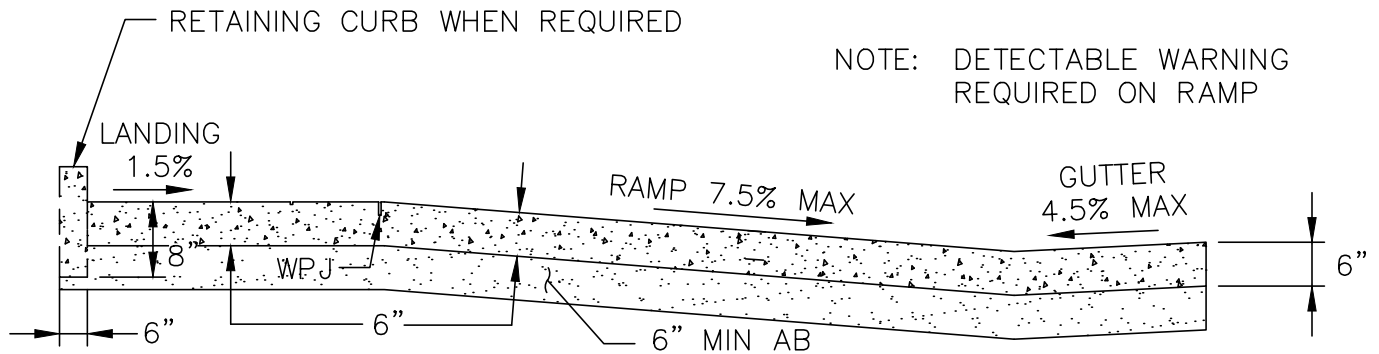
APPROVED BY:
Robert M. ... 02/26/2021
CITY ENGINEER DATE

DRAWING NUMBER
AR - 2.0

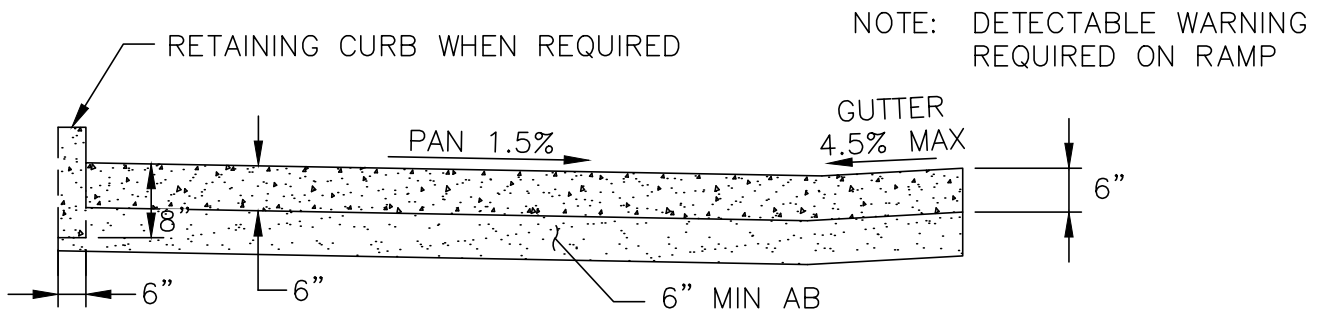




WEAKENED PLANE JOINT (WPJ)



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



TYPICAL CROSS SECTION FOR CENTER LINE OF PAN CURB RAMP

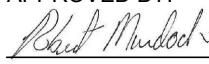
NOTES:

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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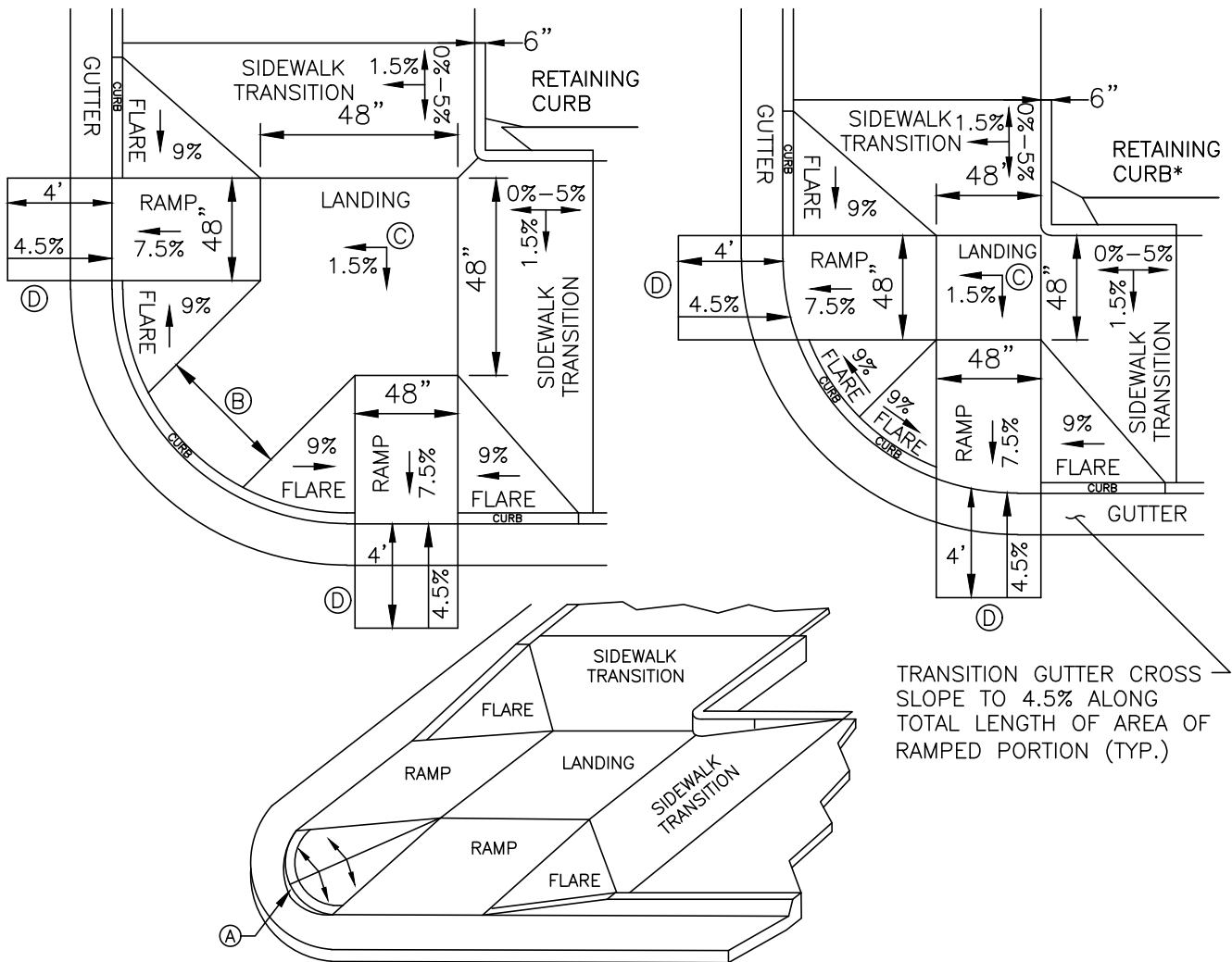
CURB RAMP GENERAL DETAILS

APPROVED BY:

 CITY ENGINEER DATE: 02/26/2021

DRAWING NUMBER
AR - 3.0



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-3.2.
 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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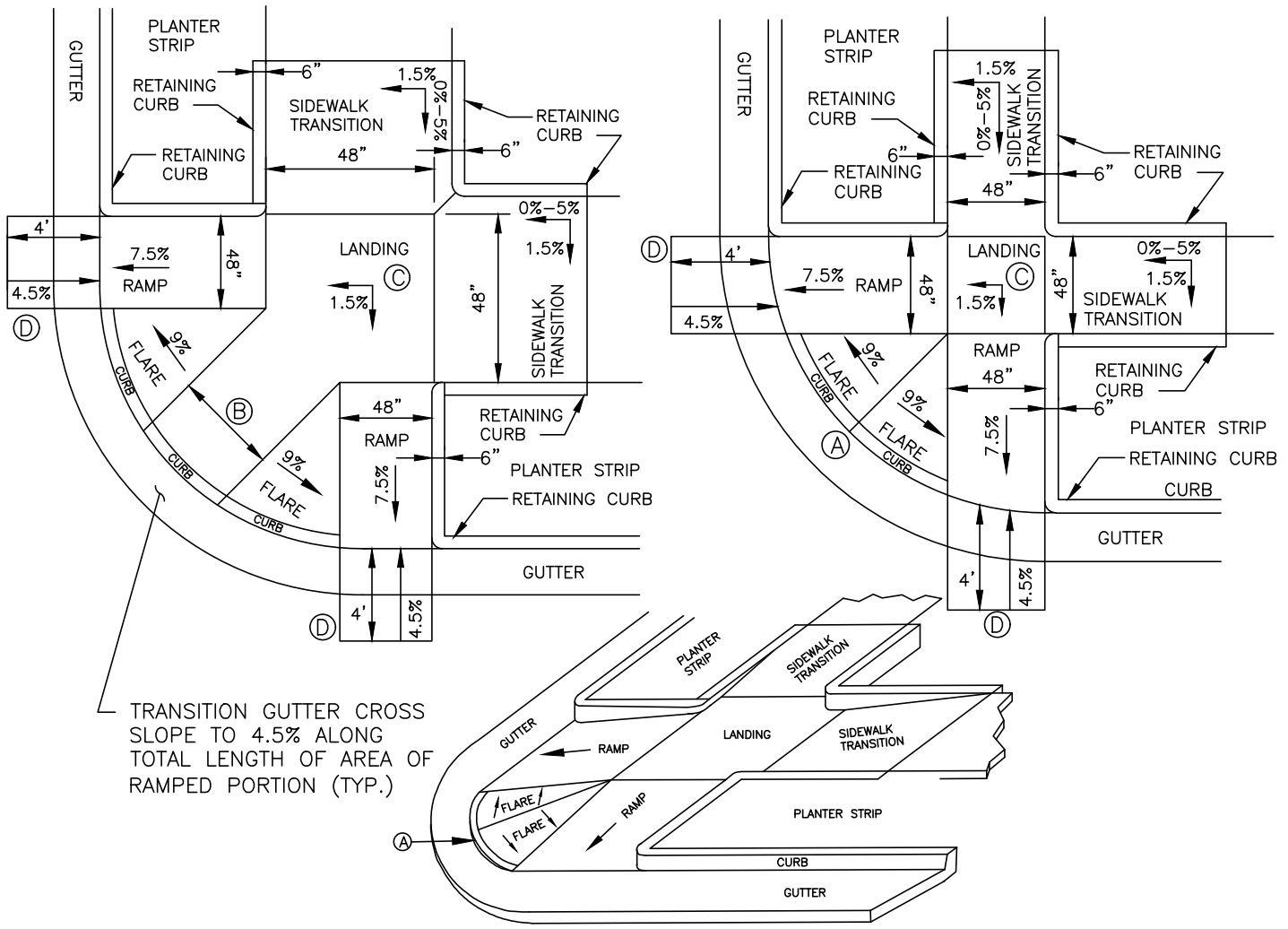
**DUAL FLARE CURB RAMPS
WITH ATTACHED SIDEWALK**

APPROVED BY:
Robert M. Muddock
CITY ENGINEER 02/26/2021
DATE

DRAWING NUMBER
AR - 4.3



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-3.2.
 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"x48" 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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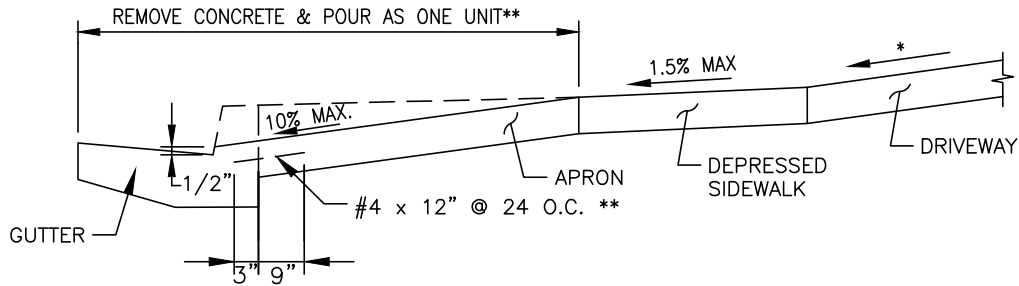
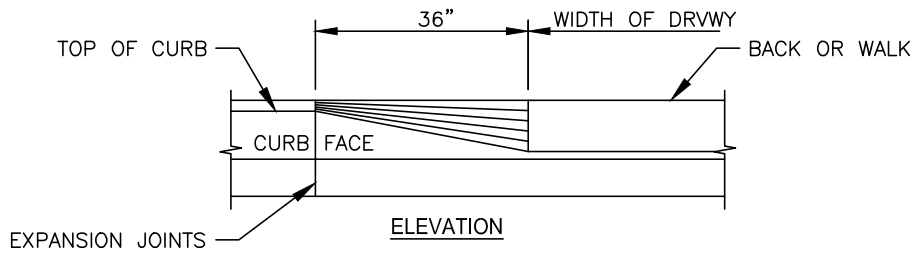
CITY OF ELK GROVE - PUBLIC WORKS

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

APPROVED BY:
Robert Murdoch 02/26/2021
CITY ENGINEER DATE

DRAWING NUMBER
AR - 4.5

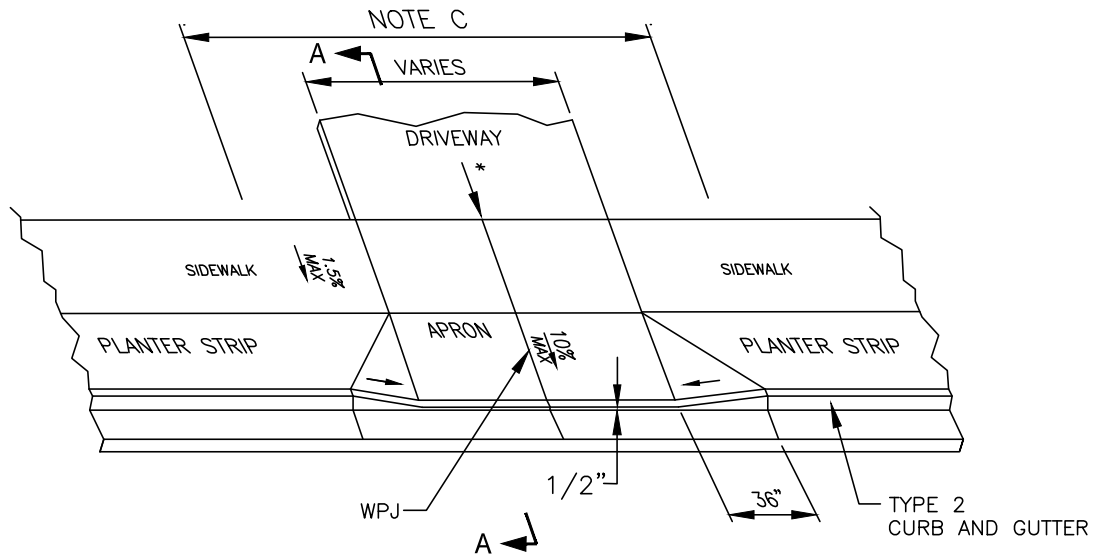




SECTION A-A WITH VERTICAL CURB

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 $\frac{1}{3}$ AND $\frac{2}{3}$ POINTS. ** IF CURB & GUTTER ARE POURED SEPARATE OF APRON THEN DOWELS ARE REQUIRED AT BACK OF CURB.
- C. THICKNESS OF APRONS SHALL BE 6".



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**DETACHED SIDEWALK
DRIVEWAY DETAIL**

APPROVED BY:
Robert Murock
CITY ENGINEER 02/26/2021
DATE



DRAWING NUMBER
AR - 4.8

DRAFTING STANDARDS

ALL SUBDIVISION PLANS, CONSTRUCTION DRAWINGS, & PROPERTY PLATS SUBMITTED TO THE CITY ENGINEER FOR CONSIDERATION SHALL CONFORM TO AND BE PREPARED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

1. **ALL LETTERING, OTHER THAN THAT HEREIN SPECIFIED OR SHOWN BELOW, SHALL BE A MINIMUM OF 0.100 INCH IN HEIGHT AND USING 0.01" LINE WIDTH, OR EQUAL.**

2. **SUBDIVISION PLANS**

	<u>LINE WIDTH</u>	
STREET CENTER LINES	—————	0.01" WIDTH
RADIAL BEARING LINES	—————	0.01" WIDTH
EASEMENT LINES	—————	0.01" WIDTH
LOT LINES	—————	0.02" WIDTH
RIGHT-OF-WAY LINES	—————	0.03" WIDTH
BLOCK OUTLINE	—————	0.03" WIDTH
SUBDIVISION OUTLINE	—————	0.04" WIDTH
MONUMENTS SET	○	
MONUMENTS SET IN MONUMENT BOX	⊙	
MONUMENTS FOUND	⊗	
MONUMENTS FOUND IN MONUMENT BOX	⊗	
BENCH MARK ELEVATION	⊕	
STREET NAMES	NAME	LETTERS 0.175" HIGH AND 0.04" LINE WIDTH
LOT NUMBERS	36	LETTERS 0.175" HIGH AND 0.02" LINE WIDTH
BEARINGS, DISTANCES, CURVE DATA, COORDINATES, ETC.		LETTERS 0.100" HIGH AND 0.01" LINE WIDTH
ADJACENT SUBDIVISIONS		LETTERS 0.175" HIGH AND SHADOW LETTERING AND 0.01" LINE WIDTH
ADJACENT LOT NUMBERS		LETTERS 0.175" HIGH AND DOTTED LETTERING AND 0.01" LINE WIDTH

TITLE BLOCK AND OTHER RELATED LETTERING SHALL BE IN ACCORDANCE WITH STANDARD ACCEPTED ENGINEERING PRACTICE, BUT IN NO CASE SHALL THE LETTERING BE LESS THAN 0.100 INCH IN HEIGHT AND USING LINE WIDTH OF 0.01".

3. **IMPROVEMENT PLANS**

<u>DESCRIPTION</u>	<u>PROPOSED</u>	<u>EXISTING</u>
SANITARY SEWER	————— 6" SS —————	————— 6" SS —————
STORM SEWER (AKA STORM DRAIN)	————— 8" SD —————	————— 8" SD —————
GAS LINE	————— 4" G —————	————— 4" G —————
WATER LINE	————— 8" W —————	————— 8" W —————
TELEPHONE	————— T —————	————— T —————
CABLE TELEVISION	————— TV —————	————— TV —————
GAS VALVE	————— G ⊗ —————	————— G —————
WATER VALVE	————— W ⊗ —————	————— W —————
ELECTRICAL CONDUIT	————— E —————	————— E —————
MATCH LINE	—————	—————

STA. 5+00

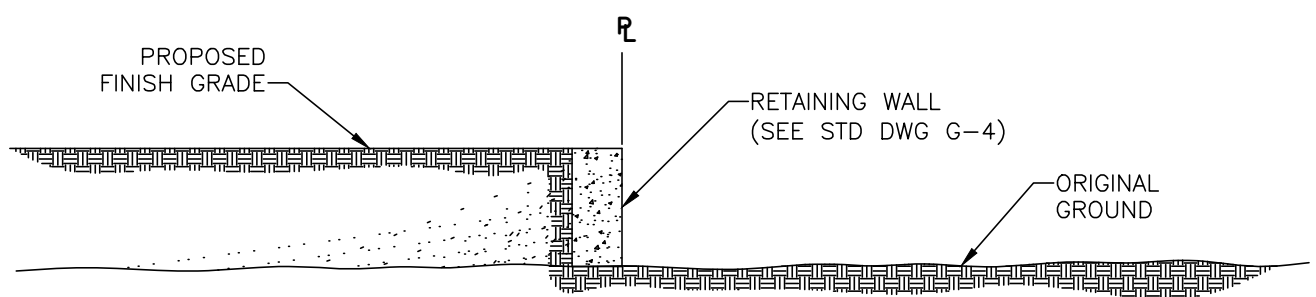
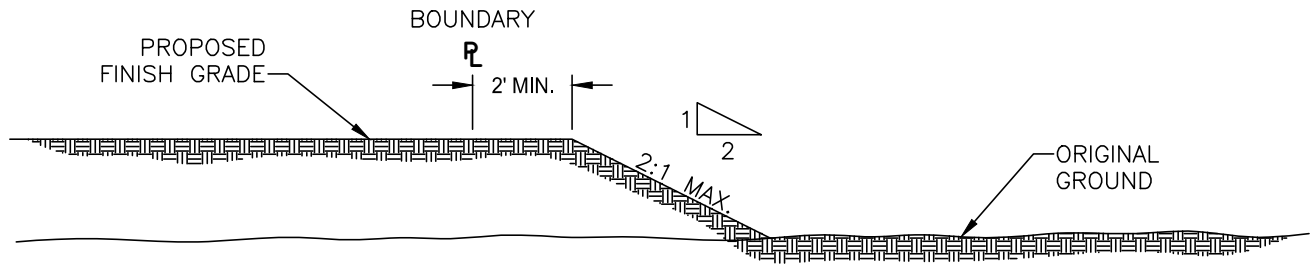
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DRAFTING STANDARDS

APPROVED BY:
Robert M. Muddock 02/26/2021
CITY ENGINEER DATE


DRAWING NUMBER
D - 2




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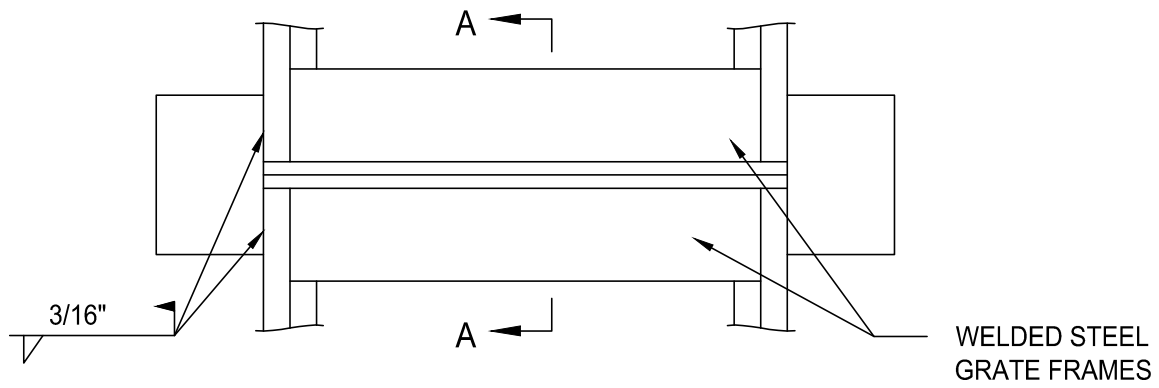
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**EXTERIOR PERIMETER
PROPERTY LINE GRADING FOR
FILL AREAS**

APPROVED BY:

 CITY ENGINEER DATE 02/26/2021

DRAWING NUMBER
G - 1

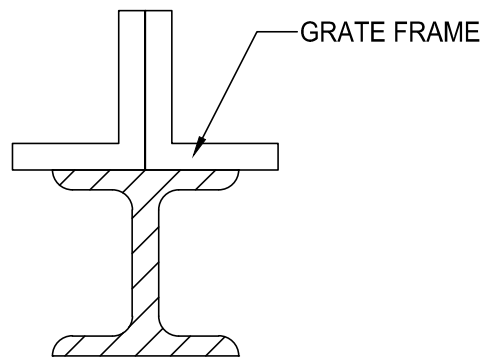




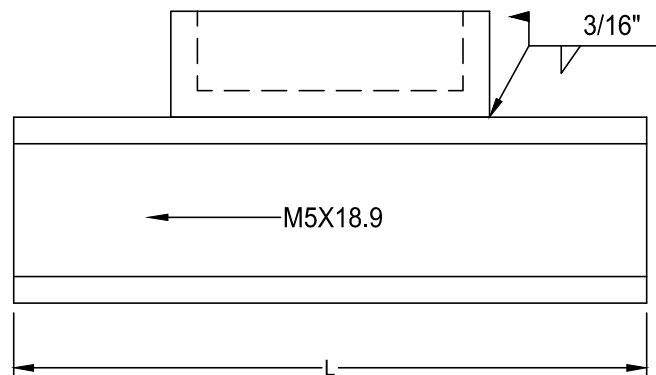
PLAN

NOTES:

1. OMIT 1/2" FRAME ANCHORS OVER CENTER SUPPORT.
2. L=57 INCHES FOR CURB OPENING CATCH BASIN WITH GRATING(S) AND DEBRIS SKIMMER (APWA GREENBOOK STANDARD PLAN 301).
3. ALL EXPOSED PARTS TO BE HOT DIP GALVANIZED PER ASTM A123, AFTER FABRICATION.



SECTION A-A



ELEVATION

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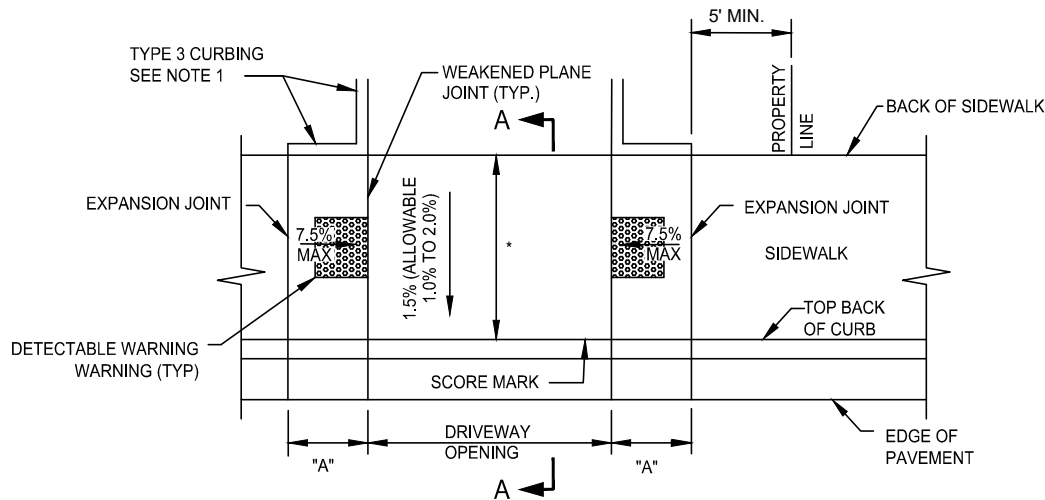
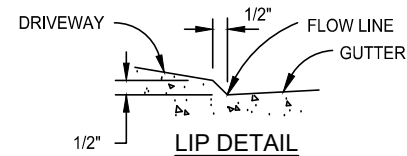
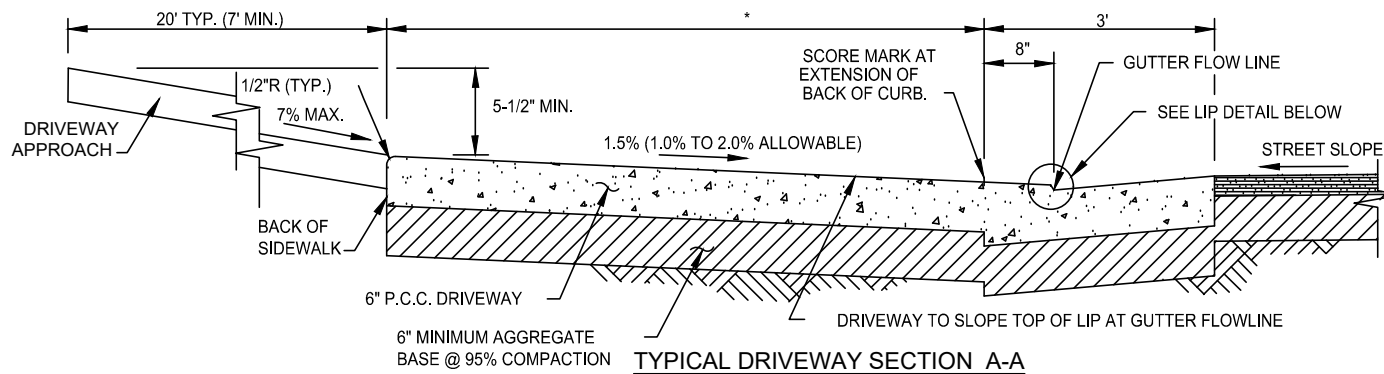
**CENTER SUPPORT ASSEMBLY
FOR MULTIPLE GRATES**

APPROVED BY:
Robert Muddock
CITY ENGINEER

02/26/2021
DATE

DRAWING NUMBER
SD - 16





SLOPE OF GUTTER	"A" (APPROX. LENGTH)
0.25% TO 0.65%	6'-0"
> 0.65% TO 1.75%	7'-0"
> 1.75% TO 2.55%	8'-0"
> 2.55% TO 3.20%	9'-0"
> 3.20% TO 3.70%	10'-0"
> 3.70%	SEE NOTE 2

NOTES:

1. TYPE 3 CURBING ON SITE SHALL EXTEND TO WHERE THE DRIVEWAY APPROACH IS A MINIMUM OF FOUR INCHES ABOVE THE BACK OF SIDEWALK ELEVATION AT THE DRIVEWAY.
 2. LENGTH OF DRIVEWAY FLAIR ON STREETS STEEPER THAN 3.70% SHALL REQUIRE SPECIAL APPROVAL BY DESIGN CHIEF OF THE DEPARTMENT OF TRANSPORTATION.
 3. A 1/2-INCH CONCRETE BATTER SHALL BE PLACED ON ALL CURB LIPS.
 4. SEE STD. DWG. AR-4.7 FOR ELEMENTS NOT SHOWN HEREON.
- * DRIVEWAY APRON MATCHES SIDEWALK WIDTH

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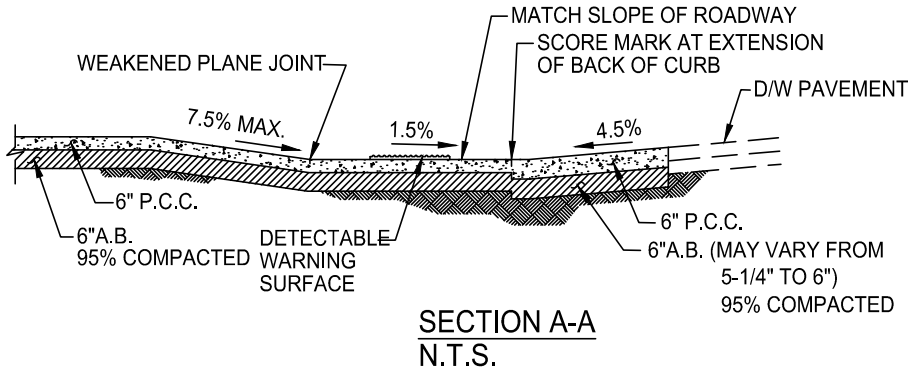
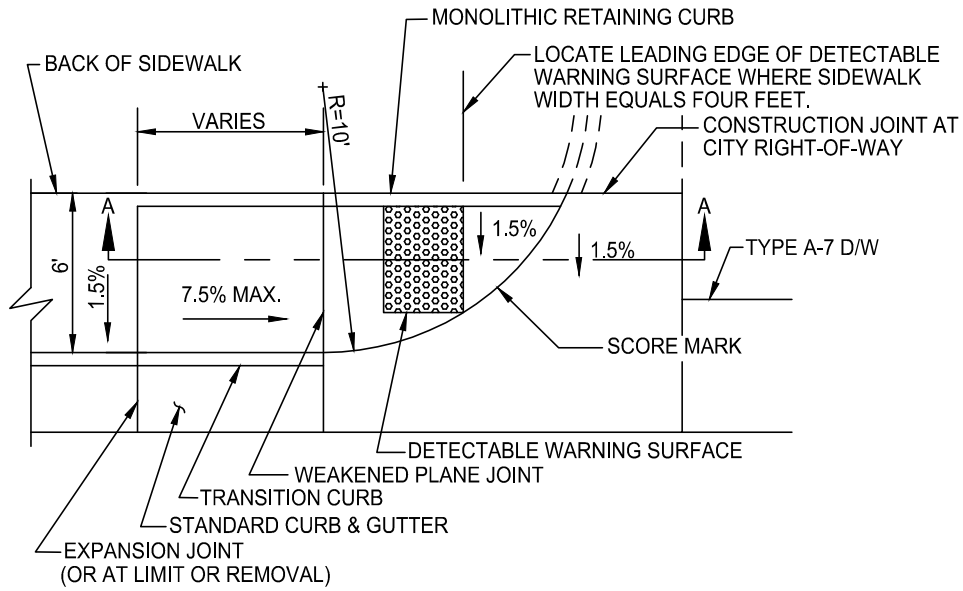
**COMMERCIAL DRIVEWAYS
TYPE A-6**

APPROVED BY:
Bob Muddoch
CITY ENGINEER

02/26/2021
DATE

DRAWING NUMBER
ST - 20





NOTES:

1. IT MAY BE USED FOR RECONSTRUCTION OF TYPE A-7 DRIVEWAYS IN AREAS WITHOUT SUFFICIENT RIGHT-OF-WAY FOR STANDARD TYPE A-7 DRIVEWAY CONSTRUCTION AND WITHOUT WALKWAY EXTENSION ON TO ABUTTING PROPERTY.
2. NO PULL BOX, UTILITY VAULT, UTILITY POLE, MANHOLE OR SIMILAR APPURTENANCE SHALL BE LOCATED WITHIN SIDEWALK RAMP AREA.
3. IT IS DESIRABLE TO LOCATE ALL DRAIN INLETS OUT OF SIDEWALK RAMP AREA. USE OF DRAIN INLET WITHIN RAMP AREA REQUIRES SPECIAL DESIGN OF INLETS.


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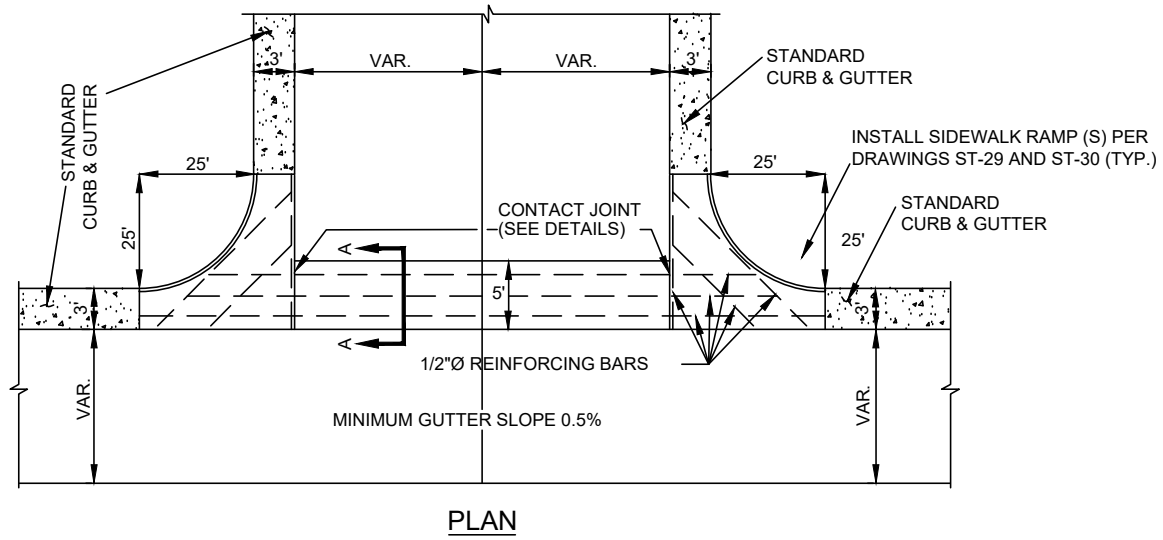
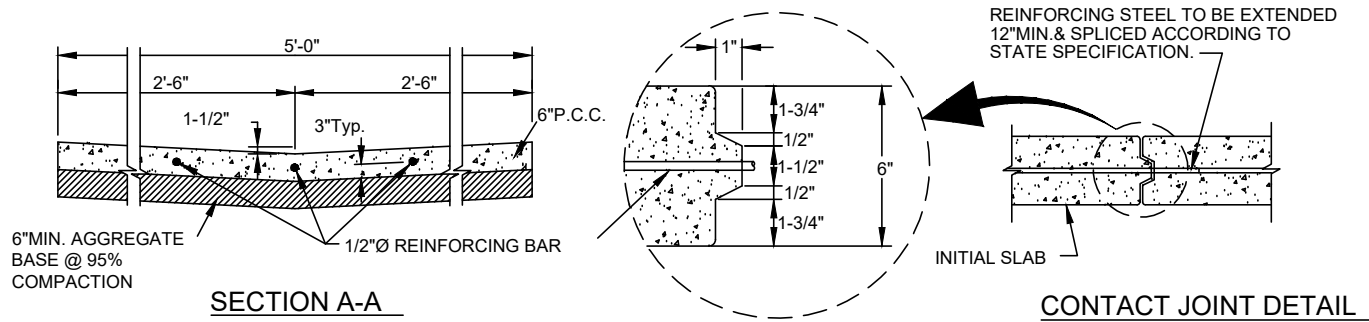
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**SIDEWALK RAMP FOR A-7 DRIVEWAYS
WITHOUT ADDITIONAL R/W
(NOT FOR NEW CONSTRUCTION)**

APPROVED BY:
Robert Murock 02/26/2021
CITY ENGINEER DATE

DRAWING NUMBER
ST - 21B





NOTE:
 6" MIN AGGREGATE BASE (95% RELATIVE COMPACTION)
 TO BE PLACED WITHIN LIMITS OF CROSS GUTTER.

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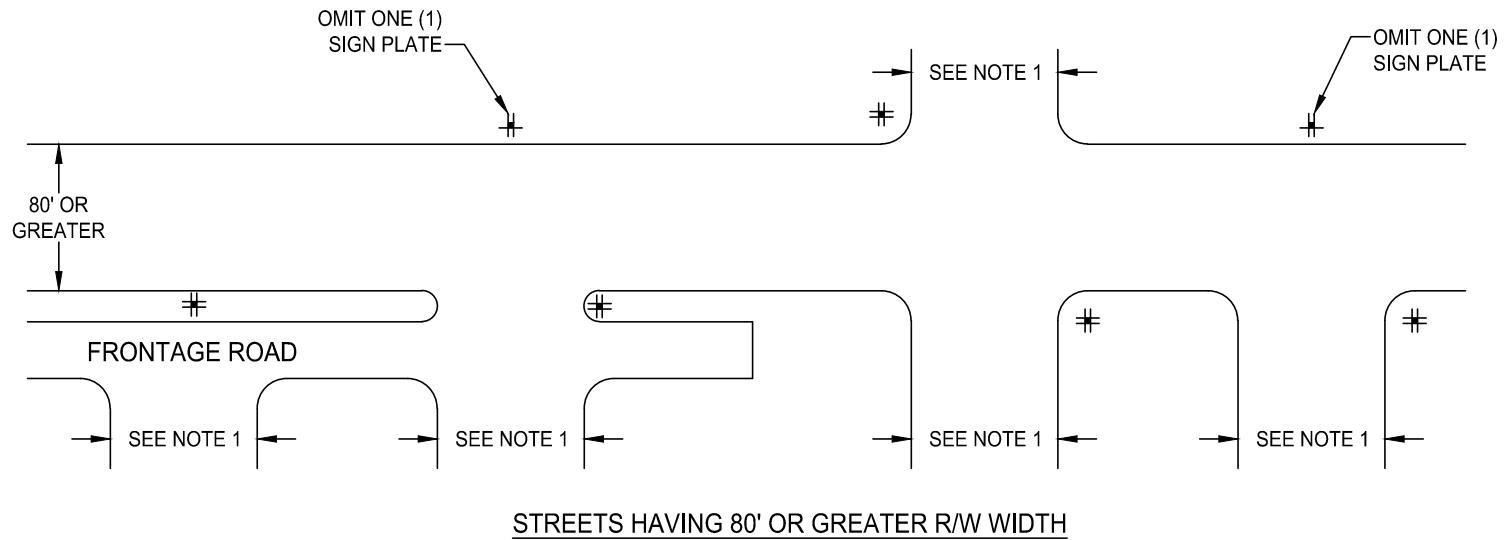
CROSS GUTTER

APPROVED BY:
Paul M. ...
 CITY ENGINEER

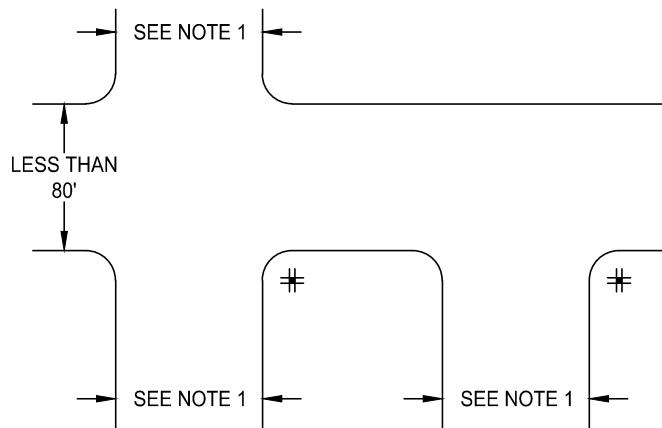
02/26/2021
 DATE

DRAWING NUMBER
ST - 32





STREETS HAVING 80' OR GREATER R/W WIDTH



STREETS HAVING LESS THAN 80' R/W WIDTH

NOTE:

1. SIDE STREETS INDICATED ARE STREETS WITH R/W WIDTHS EQUAL TO OR LESS THAN R/W WIDTH FOR THROUGH STREET
2. STREET SIGNS ARE TO BE LOCATED AT MID-RETURN APPROXIMATELY 30 INCHES BEHIND THE FACE OF CURB OR 6" BEHIND ATTACHED SIDEWALKS. SEE STANDARD DRAWING T-1 WHEN COMBINED WITH A STOP SIGN.
3. SIGNS SHALL BE INSTALLED ON NORTHEAST AND SOUTHWEST CORNERS OF INTERSECTIONS. SIGNS SHALL BE INSTALLED ON STREET LIGHTING STANDARD WHEN APPROPRIATE AND AS APPROVED BY CITY.
4. CITY TO REVIEW AND APPROVE SIGN LOCATIONS PRIOR TO INSTALLATION.
5. SEE STANDARD DRAWINGS T-1, T-3, T-4, T-5A, T-5B, AND T-6B.

LEGEND:

STANDARD STREET NAME SIGN INSTALLATION. FOUR (4) SIGN PLATES ON POST OR ON STREET LIGHT POLE.

THREE (3) SIGN PLATES ON POST OR ON STREET LIGHT POLE.

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STREET NAME SIGN GENERAL LOCATION

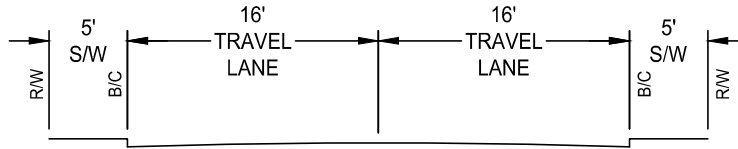
APPROVED BY:

Bob Muddoch 02/26/2021
CITY ENGINEER DATE

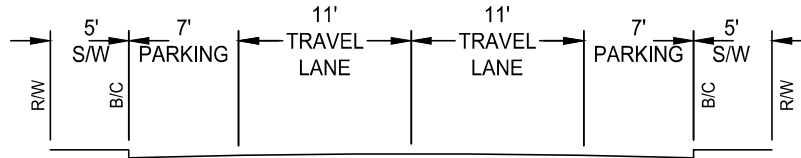


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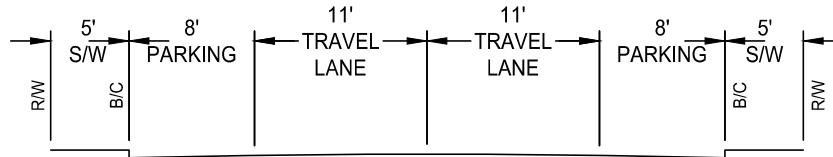
T - 6A



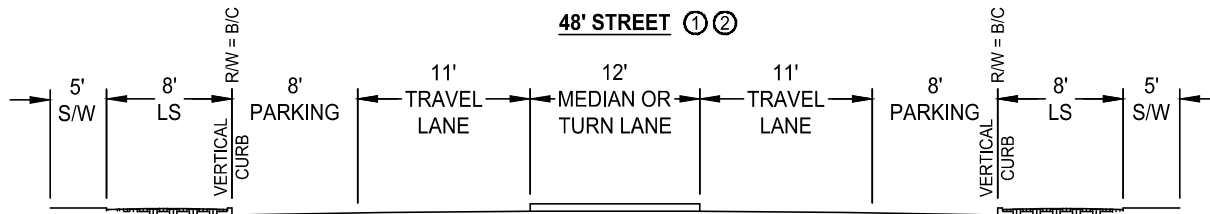
42' STREET ②



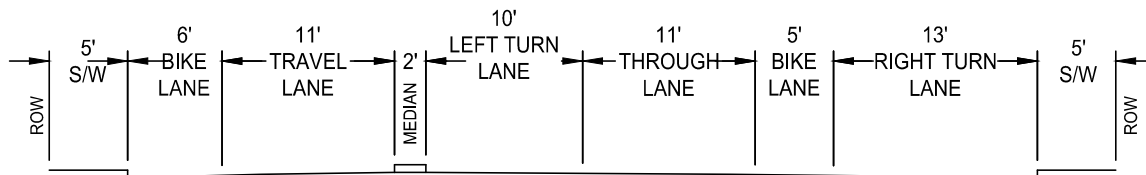
46' STREET ②



48' STREET ① ②



50' STREET ① ③ ⑤



68' EXPANDED INTERSECTION ④

AT THE DISCRETION OF PUBLIC WORKS

- ① ADJACENT TO SCHOOLS OR PARKS WIDEN THE SIDEWALK TO 8'.
IF PARKING IS NOT NEEDED, PARKING CAN BE CHANGED TO 6' BIKE LANE.
IF BIKE LANES ARE NEEDED, ADD 12'.
- ② 8' OF LANDSCAPING SEPARATING THE STREET FROM THE SIDEWALK MAY BE ADDED.
- ③ IF PARKING IS NOT NEEDED, IT MAY BE REMOVED. MINIMUM RIGHT-OF WAY SHALL BE 40 FEET.
ADJACENT TO SCHOOLS OR PARKS WIDEN THE SIDEWALK TO 8'.
IF PARKING IS NOT NEEDED, PARKING CAN BE CHANGED TO 6' BIKE LANE.
- ④ IF BIKE LANES ARE NOT NEEDED, REDUCE BY 11'.
- ⑤ LANDSCAPING AND SIDEWALK SHALL BE DEDICATED BY FEE TITLE OR LANDSCAPE/PEDESTRIAN EASEMENT AS APPROVED BY THE DIRECTOR.

MINOR DEVIATION MAY BE APPROVED BY THE DIRECTOR.

DATE 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE
01	STN	JRW	02/16/2021

CITY OF ELK GROVE - PUBLIC WORKS

TYPICAL STREET CROSS SECTIONS
42', 46', 48', 50' AND 68'

APPROVED BY:
Robert Murock 02/26/2021
CITY ENGINEER DATE

DRAWING NUMBER
T - 9A

