



DEPARTMENT OF ENVIRONMENTAL SERVICES

Director's Office

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Memorandum

To: Barbara Donnellan, Marsha Allgeier, **Date:** 3 Aug 2011
Mark Schwartz, Susan Bell, Dinesh
Tiwari, All DES Deputy Directors, Anna
Maynard

CC: Glenn Page

From: *ggg* Greg Emanuel, Deputy Director, Department of Environmental Services

Subject: ARLINGTON COUNTY INFRASTRUCTURE DESIGN AND CONSTRUCTION
STANDARDS – CURB RAMP, CURB EXTENSION and BICYCLE LANE
STANDARDS

As you are aware, the Department of Environmental Services (DES) has been systematically developing (and in some cases re-establishing) a uniform and accepted set of standards to be used primarily for internal county initiated, managed, designed and constructed vertical and horizontal infrastructure projects.

The development of the Arlington County Infrastructure Design and Construction Standards is the product of a County inter-departmental task force headed by the Department of Environmental Services (DES) and joined by the Departments of Community Planning, Housing & Development (CPHD), Fire, Parks, Recreation & Cultural Resources (PRCR), Technology Services (DTS) and the County Managers Office (CMO).

The Arlington County Infrastructure Design and Construction Standards are divided into two categories, Building Design (Vertical Infrastructure) standards and Horizontal Infrastructure standards. While the Building Design standards are now complete the Horizontal Infrastructure standards are still being developed.

Due to the complexity in developing the Horizontal Infrastructure standards and to ensure compliance with the changing environment in which the county operates, there is an immediate need to provide direction and clarification in identifying minimum requirements for the design and placement of Curb Ramps, Curb Extensions and Bicycle Lanes within the county.

Therefore to ensure compliance with Arlington County goals the Curb Ramp, Curb Extension and Bicycle Lane standards will be released as stand alone documents with

effect as of the 1 Sep 2011 for all projects that have not been approved by the county board or have not been issued a construction permit. These standards supersede all previous County Curb Ramp, Curb Extension and Bicycle Lane standards and details.

DES will periodically review and update these standards to ensure that Arlington County continually meets all federal, state and regional legislation, standards, and industry best practices thus ensuring its status as a world-class urban community. Please disseminate within your departments as needed. An electronic copy of this standard can be found on the AC Source page under WG: ACG Standards.

If you have any questions regarding the status of these standards, feel free to contact either my self or Glenn Page the County Standards Engineer, who is part of the Directors Office, at ext: 7525 or at gpage@arlingtonva.us.

Greg Emanuel, Deputy Director
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ATTACHMENT:

1. H-3.2 CURB RAMP STANDARD
2. H-3.3 CURB EXTENSION STANDARD
3. H-3.4 BICYCLE LANE STANDARD

GENERAL**1. Description**

This standard identifies minimum requirements that shall be met for all curb extensions in the design and construction of elements for Arlington County Horizontal Design Standards. The development of this standard is to provide greater guidance in the design and construction of curb extensions while meeting the County's guiding principles for increasing pedestrian safety and accessibility, decreasing county infrastructure costs and decreasing impervious surface area.

2. Related Arlington County Standards

- A. Arlington County Bus Stop Design Standards
- B. Arlington County Horizontal Standards H-3.1 Driveway Entrances
- C. Arlington County Horizontal Standards H-3.2 Curb Ramps
- D. Arlington County Horizontal Standards H-2.1 Storm water Management
- E. Arlington County Construction Standards and Specifications

3. Applicable Standards and Specifications

- A. Americans with Disabilities Act (ADA) Public Rights-of-Way Accessibility Guidelines (PROWAG)
- B. Virginia Department of Transportation (VDOT) Road and Bridge Standards.
- C. Manual of Uniform Traffic Control Devices (MUTCD)

4. Quality Assurance

- A. Reserved

5. Submittals

- A. All curb extensions designs and placements shall be approved by DES Transportation Engineering and Operations Bureau (TE&O).

DESIGN CONSIDERATIONS

A. Definition

A Curb Extension (Nub) is defined as a projection of a curb into the street shadowing parking.

B. Purpose of Curb Extensions

- Purposes of curb extensions may include any of the following:
- Physically and visually narrows street
- Increases visibility of pedestrians and vehicles
- Restricts parking at street intersections and crosswalks
- Provides space for bus loading and unloading areas
- Reduces pedestrian crossing distance
- Provides space for bioretention areas¹
- Provides additional space for pedestrian, bicycle and landscaping facilities

PLACEMENT

- A. Placement - Curb extensions may be placed on any side of a street that has on street parking. They are not approved for use on any side of a street with no parking.

DESIGN

A. Dimensions

1. Width

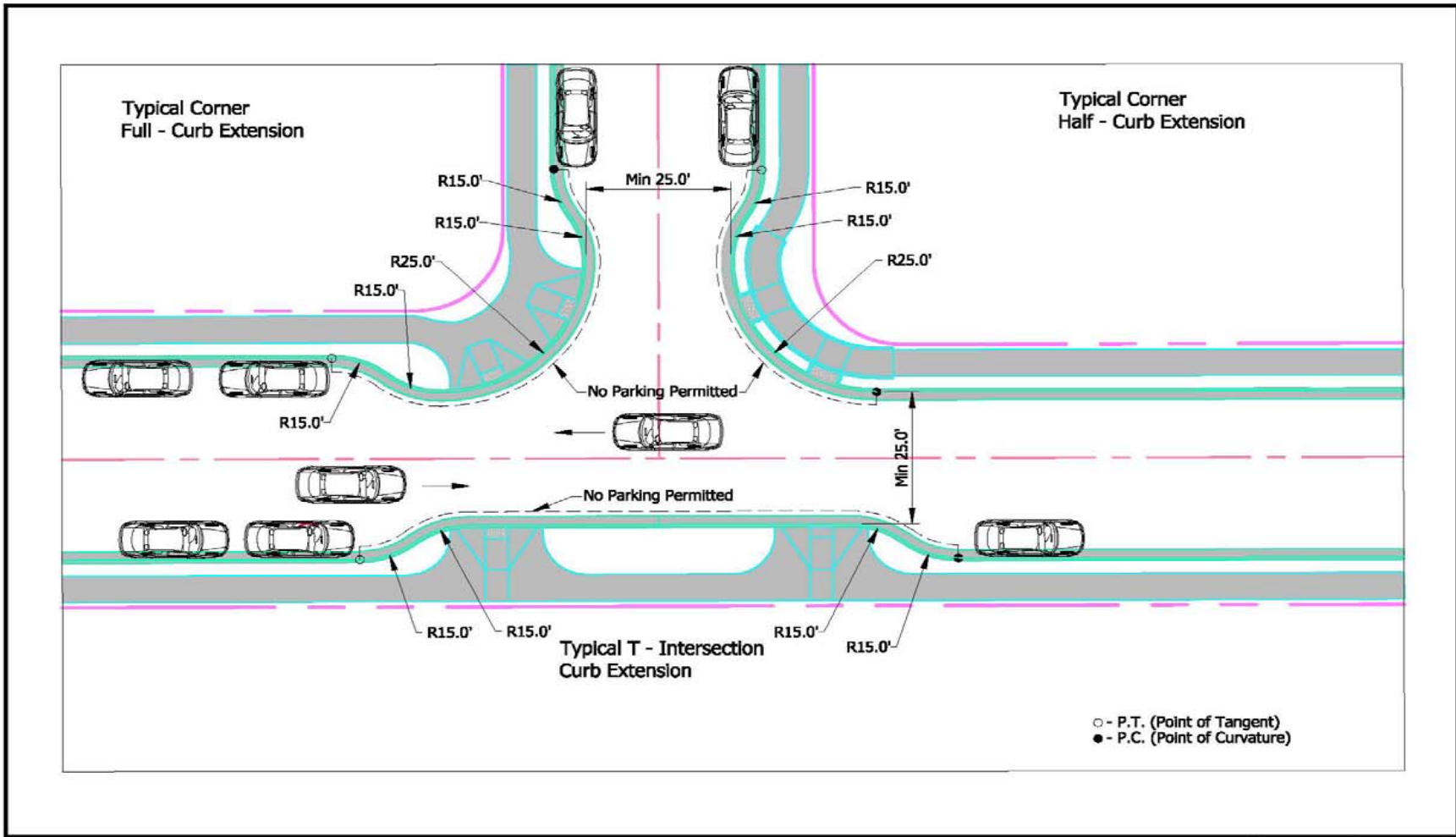
Parallel Parking Lane Width	Curb Extension Width
7'	5.5'
7.5'	6'
8' or greater	6.5'
Minimum curb extension width used shall be 5.5'	
Angled Parking	
To determine the width of curb extensions used in angled parking locations use the following formula: Parking Space length (perpendicular to curb) – Gutter width = Curb extension width. Refer to Detail CE-3.0	

Arlington County standard gutter width of 1.5' shall be used. The parking lane width is measured perpendicularly from the face of the curb to the center of the parking edge line. If there is no marked parking edge line, then assume a width of 7'.

¹ The standards for streetscape bioretention and similar stormwater management facilities will be established under the separate “Stormwater Management” standard (H-2.1).

2. Curb Return Radius – the typical radius is 25’ measured to the face of curb, but may be increased or decreased with justification, based on turning movements in each specific case.
3. Transition/Reverse Curve Radius – The typical reverse curve radius is 15’ measured to the face of curb, but may be increased or decreased with justification. Angle point transitions are not permitted.
4. Length
 - a. Typical Corner Curb Extension – a typical corner curb extension tangent section may be present and the length shall be determined by site conditions. Not all corner curb extensions shall have tangent sections.
 - b. Typical T-Intersection Curb Extension - The minimum curb extension length required is through the intersection and includes the outside edge of both crosswalks (marked or unmarked), measured along the face of curb from the Point of Curvature (PC) to Point of Tangent (PT) of the tangent section and excluding both transition sections. Refer to Detail CE-1.0
 - c. Typical Mid-Block Curb Extension
 - i. Used for Mid-Block crosswalks - The minimum curb extension tangent length shall be 30’ measured along the face of curb from the PC to the far edge of the marked crosswalk and excluding both transition sections. On the approach to the marked mid block crosswalk a curb extension tangent section with a minimum length of 20’ is required and shall be measured from the PC to the near edge of the marked crosswalk. Refer to Detail CE-2.0
 - ii. Used for landscape facilities – The minimum curb extension tangent length shall be 12’, measured along the face of curb from the PC to PT of the tangent section and excluding both transition sections.
 - d. Typical Curb Extension when used for bus operations shall have a tangent section with a minimum of 40’ and shall be measured along the face of curb from the PC to PT of the tangent section and excluding both transition sections. The tangent section may need to be lengthened if curb ramps are incorporated.
- B. Turning Movements – shall be calculated using a AASHTO 2004 City Bus. On streets with large vehicle operations, an appropriate larger vehicle shall be used for turning movement calculations.
- C. Parking shall not be permitted along the curb extension.
- D. Drainage – Positive drainage shall be achieved at the gutter. The use of scupper drainage may be approved for use on a case by case basis by the Water Sewer and Streets Bureau (WSS).

E. Materials – poured concrete shall be used for all curb, gutter and curb ramps.



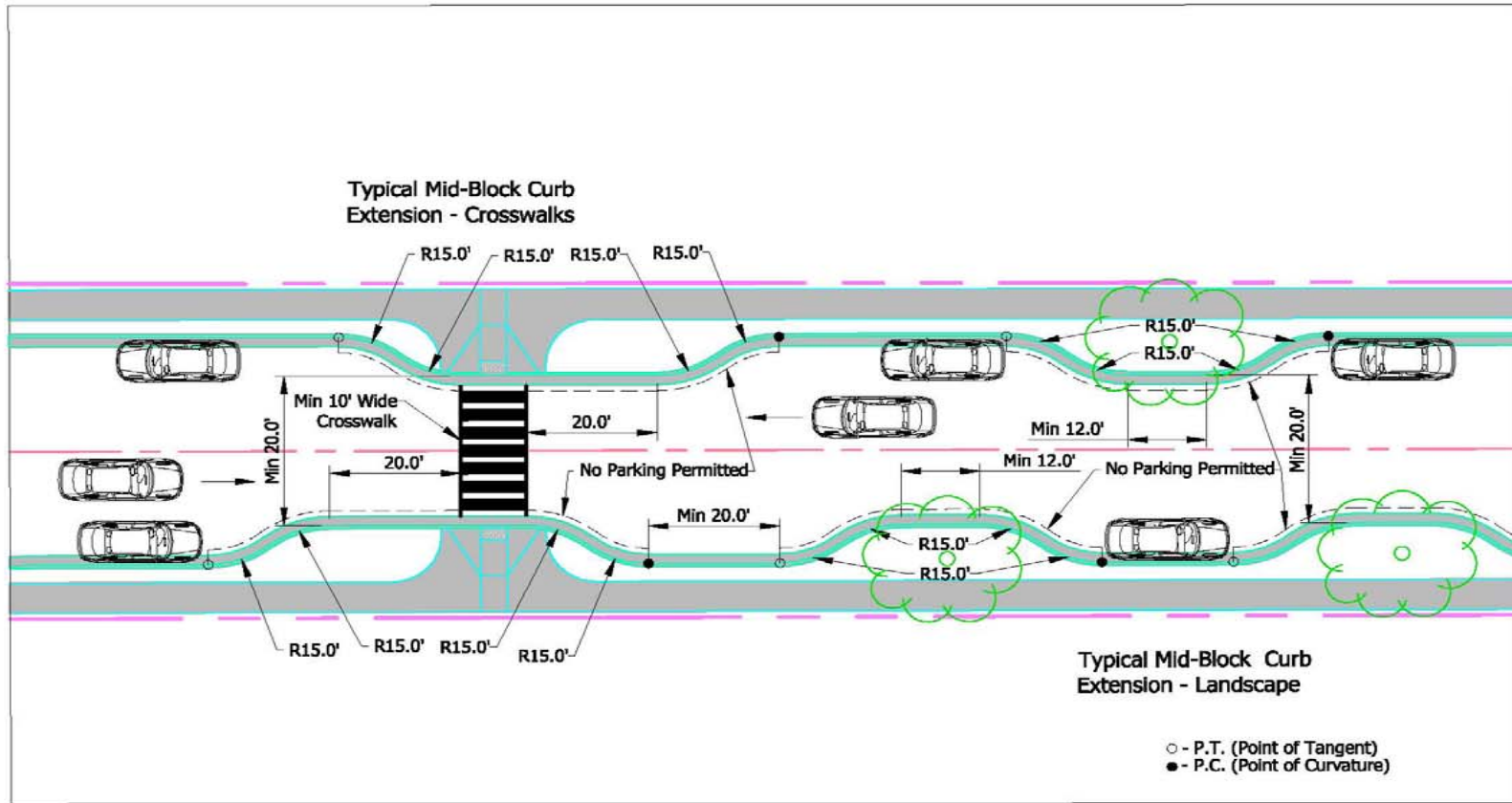
TYPICAL CORNER CURB EXTENSION PLACEMENT

REVISION & DATE	



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DRAWING NO.
CE-1.0
Sheet 1 of 1



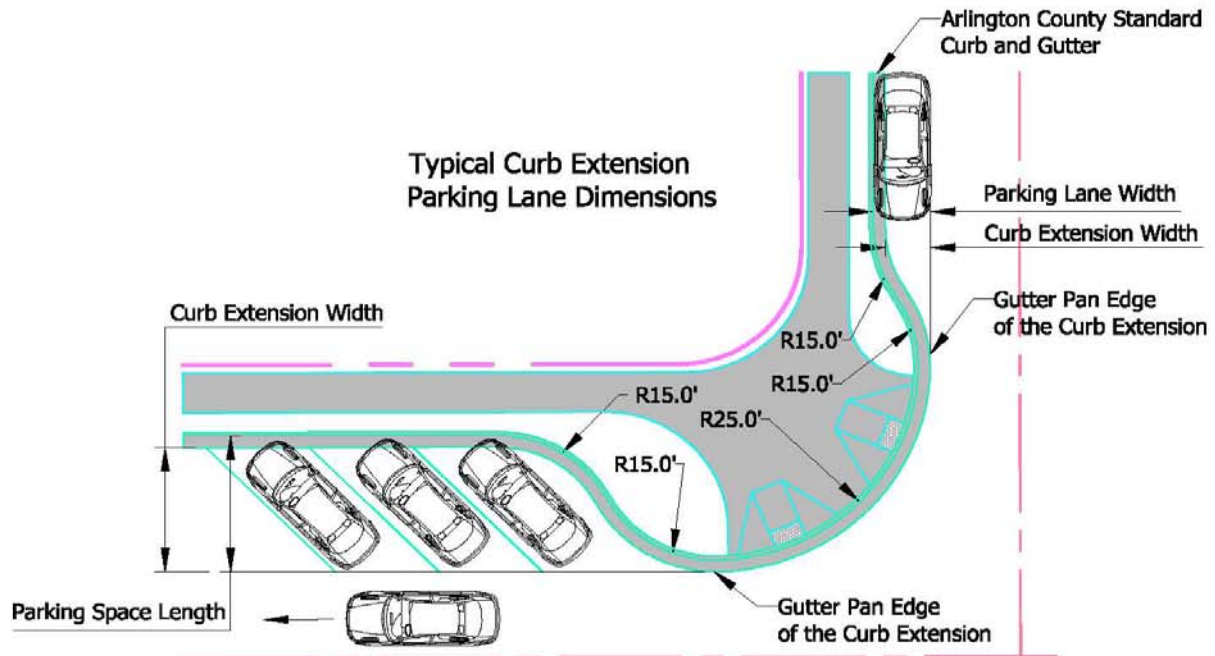
TYPICAL MID-BLOCK CURB EXTENSION PLACEMENT

REVISION & DATE	



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CE-2.0
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Parallel Parking Lane Width	Curb Extension Width
7'	5.5'
7.5'	6'
8' or greater	6.5'

Minimum curb extension width used shall be 5.5'

Angled Parking

To determine the width of curb extensions used in angled parking locations use the following formula:

$$\text{Parking Space Length (Perpendicular to Curb)} - \text{Gutter width} = \text{Curb extension width}$$

TYPICAL CURB EXTENSIONS - PARKING LANE DIMENSIONS

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