



**DEPARTMENT OF ENVIRONMENTAL SERVICES**

# **ARLINGTON COUNTY Sign Installation Guidelines**



**Ver. 1.0, May 2020**

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## **GENERAL**

### **Description**

This standard establishes minimum requirements to be met for the placement, size, and installation of signage and sign supports for Arlington County Horizontal Design Standards. Engineers, consultants, planners, designers, and developers working within/for Arlington County shall refer to this document for guidance on the placement, size, type, and installation of signs and sign structures on engineering plans as well as onsite. Specifications including dimensions (size), messaging, support structures, and foundations are included in this document. Typical signs used in Arlington County along with acceptable sizes, messaging and industry-standard (Manual on Uniform Traffic Control Devices) reference numbers, are displayed in Table 1 (Appendix A).

### **Related Standards & Specifications**

- A. Manual on Uniform Traffic Control Devices (MUTCD)
- B. Virginia DOT Supplement to the MUTCD
- C. Arlington County Sign Installation Standards & Specifications

### **Purpose**

Signs are traffic control devices used to direct traffic operations, assign the right-of-way, designate curb space, and provide general information to multi-modal users of the roadway network. The effectiveness of traffic signs is contingent upon visibility, location, position, and messaging, which can be compromised if a sign is installed incorrectly. The purpose of this document is to establish minimum requirements for the placement and installation of signage within Arlington County to maximize effectiveness, messaging, visibility while maintaining safety and access for all roadway network users.

### **Submittals**

Signs can be installed in Arlington County's right-of-way when the following conditions are met:

- A signage plan has been completed and approved by the Transportation Engineering & Operations (TE&O) Bureau.
- All traffic control devices meet current Arlington County standards as specified in this guideline or as otherwise approved by the TE&O bureau.

## MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES GUIDANCE

The Manual on Uniform Traffic Control Devices (MUTCD) is an industry-standard resource that provides guidance for the placement and installation of regulatory, guide, informational, and warning signs.

Use of guidance in the MUTCD is advised when this document lacks specificity for a certain sign type. Approval of TE&O is still required prior to the installation of any such sign using guidance from the MUTCD.

## GUIDANCE FROM OTHER JURISDICTIONS AND STUDIES

In developing this guideline for sign installations in Arlington County, staff reviewed different documents from other jurisdictions. Further detailed information is provided in the Appendix B.

## TECHNICAL REQUIREMENTS FOR SIGN MATERIAL & INSTALLATION<sup>1</sup>

### General

- a) All signs shall conform to guidance from the MUTCD, Virginia Supplement to the MUTCD, and Arlington County guidelines.
- b) All signs shall follow the latest version of the Virginia Standard Highway Signs Manual.
- c) Sign materials shall meet minimum requirements as referenced in the current version of the MUTCD. Sign sheeting shall be made with retro reflective materials and meet minimum reflectivity requirements as specified in the current version of the MUTCD.
- d) Before excavating, the contractor shall verify all existing utilities. Call Miss Utility @ 811 or 1-800-552-7001 or submit tickets online at <https://va811.com/>.
- e) All signs shall be mounted on 2"- 14 gauge square tube telespar posts, 2lbs/ft. [see specifications (STP-1 (MOD) 1321.13 and STP-1 (MOD) 1321.17)].
- f) New signs **shall not** be installed on any utility poles or streetlight poles not owned by Arlington County. These utility poles are often identified by a small silver plate with a number string, often beginning with the letter 'C'. Some poles do not have identifying

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<sup>1</sup> This section includes updated information regarding Appendix C of the "New Sign Install Standards\_Memo" submitted to Engineering Bureau by TE&O on Jan 29<sup>th</sup>, 2020

plates, so each pole must be reviewed for ownership before attaching signs to it. Visit Arlington County's online map, AC Maps<sup>2</sup>, to determine if a streetlight or pole is Dominion-owned or County-owned.

- g) Unless otherwise approved by TE&O, signs should be placed so that the outside edges of the sign panel are a minimum of two (2) feet from the face of curb.
- h) The bottom edges of traffic signs should be seven (7) feet above ground level when located near pedestrian usage and parking areas.

### Stop Signs

- a) Stop signs (R1-1) shall be placed in advance of curb ramps located at intersection corners (see Arlington County Standards).



R1-1

- b) The combination of stop sign and street name sign on a single pole should be placed where it has the greatest visibility to each intersecting roadway. The street name sign shall always be placed above the stop sign on the pole. The stop sign panel shall face oncoming traffic from its respective approach.

### Pedestrian Warning Signs

- a) Pedestrian warning signs (W11-2) should be installed facing oncoming traffic one hundred fifty (150) feet in advance of the crosswalk and at the crosswalk with a downward pointing arrow. See MUTCD Table 2C-4 for guidance. For roads with crosswalks on each side of an intersection, place advance pedestrian warning signs only on the upstream side of the approaching roadway.
- b) Place W11-2 pedestrian warning signs for crosswalks on the far (downstream) side of curb ramps when possible. This keeps the signs from obscuring the sight lines between pedestrians at the ramps and approaching vehicles.
- c) Pedestrian warning signs for marked crosswalks placed in median noses should be mounted back to back on the same post when possible, instead of one sign and signpost in each median nose. This reduces the number of sign posts needed.
- d) In-Street Pedestrian Crossing Signs (see Arlington County's Guidelines).



W11-2

<sup>2</sup> <https://gis.arlingtonva.us/Html5Viewer/Index.html?viewer=ACMaps.HTML5#>

## Signs in the Median

- a) Signs may be installed in medians that are at least four (4) feet in width. Signs should be installed from 1-3 feet from the nose of median and centered to provide equidistant horizontal clearance from the sign post to the edge of the raised median. Vertical clearance shall be seven (7) feet measured from the median surface to the bottom of the sign, except for roads with six (6) feet or wider raised medians (Figure 1). Place pedestrian warning signs only on the right side of an approach and in the median (where applicable). Additional pedestrian warning signs **shall not** be placed on the left side of the roadway unless otherwise approved by TE&O.

## Sign Placards

- a) “NEW” sign placard (W16-15P) notices shall be installed for conditions which cause a substantial operational or safety change to a roadway, such as adding regulatory signage or converting a two-way stop condition to an all-way stop condition. The NEW placards should be removed six (6) months from the date the new traffic sign has been installed.
- b) “ALL WAY” sign placard (R1-3P) shall be installed where there is all-way stop conditions.



W16-15P



R1-3P



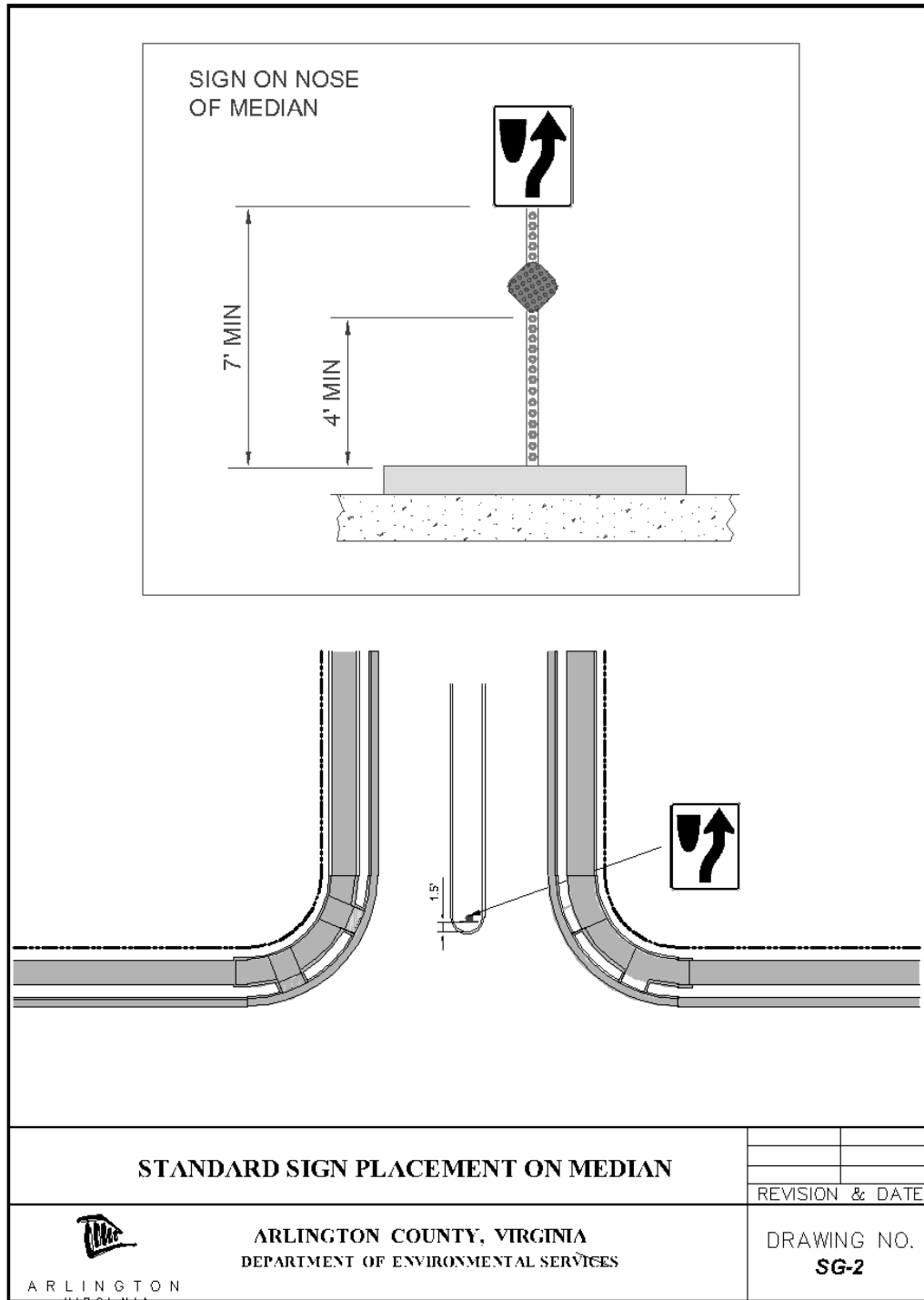
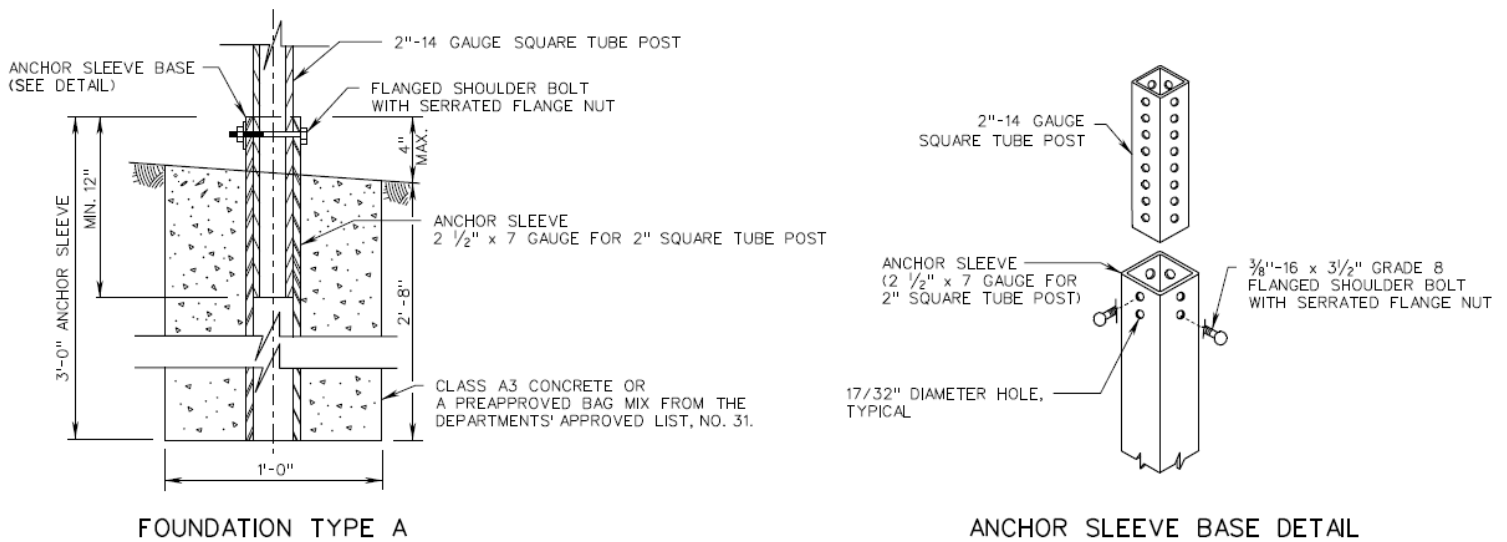


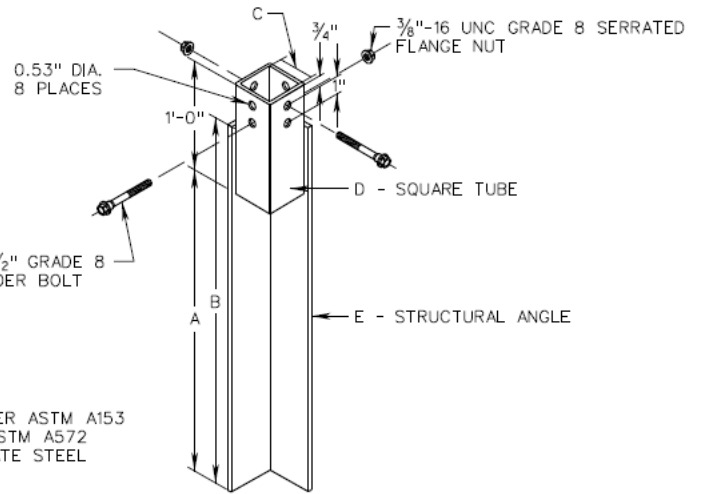
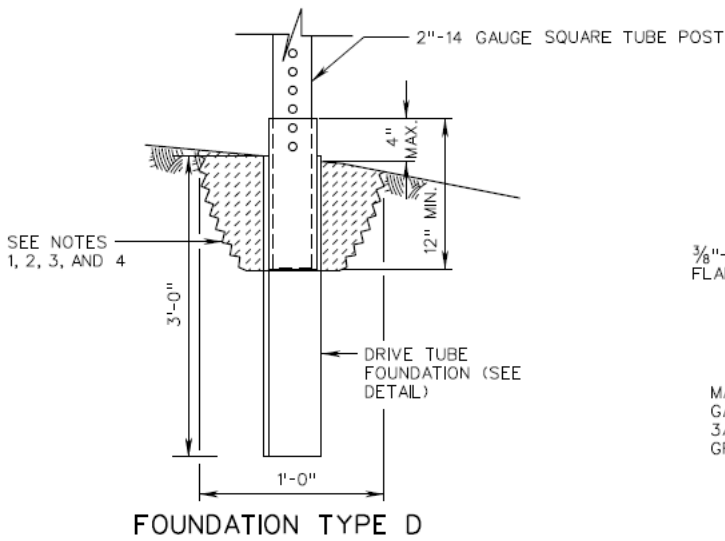
Figure 1: Sign Placement on Median

## Posts and/or Foundations

- a) For all sign posts, use 7-gauge heavy duty anchor (30" x 2.50") with hardware for 2" post. Use 5/16" corner bolt with flanged nut and 3/8" driver rivet with washer (see Arlington County Specifications). Figures 2 to 5 illustrate the modified sign standards from the 2016 (VDOT ROAD & BRIDGE STANDARDS) and two optional supplemental details.
- b) Contact the TE&O construction manager or his/her designee at (703) 228-3788 or (571) 414-7497 for further assistance/guidance.



**Figure 2: Anchor Sleeve Foundation and Base Detail**



3/8"-16 UNC x 3/2" GRADE 8  
FLANGED SHOULDER BOLT

MATERIALS:  
GALVANIZED PER ASTM A153  
3/16" THICK ASTM A572  
GRADE 50 PLATE STEEL

DRIVE TUBE FOUNDATION DETAIL

**NOTES:**

1. EXCAVATE TO A DEPTH OF NO LESS THAN 8" AND NO GREATER THAN 12" PRIOR TO INSTALLATION OF DRIVE TUBE FOUNDATION.
2. THE EXCAVATED AREA SHALL BE BACKFILLED WITH A CEMENTITIOUS MATERIAL AND SHALL BE TAPPED WITH EACH 6" LIFT.
3. THE SQUARE TUBE POST SHALL BE INSERTED INTO THE SLEEVE OF THE DRIVE TUBE FOUNDATION A MINIMUM OF 12".
4. DRIVE CAP SHALL BE UTILIZED FOR INSTALLATION OF DRIVE TUBE FOUNDATION. WHEN USING A POWER DRIVER, A SHANK SHALL ALSO BE REQUIRED.

DRIVE TUBE FOUNDATION TABLE			
FOUNDATION TYPE	SIZE OF POST	DRIVE TUBE FOUNDATION DIMENSION	
TYPE D	2 INCH 14 GA.	A	27"
		B	36"
		C	2 1/8"
		D	2 1/2" X 2 1/2" X 3/16" ASTM A500 GRADE B
		E	2 1/2" X 2 1/2" X 3/16" ASTM A36

**Figure 3: Foundation Type "D" Detail**

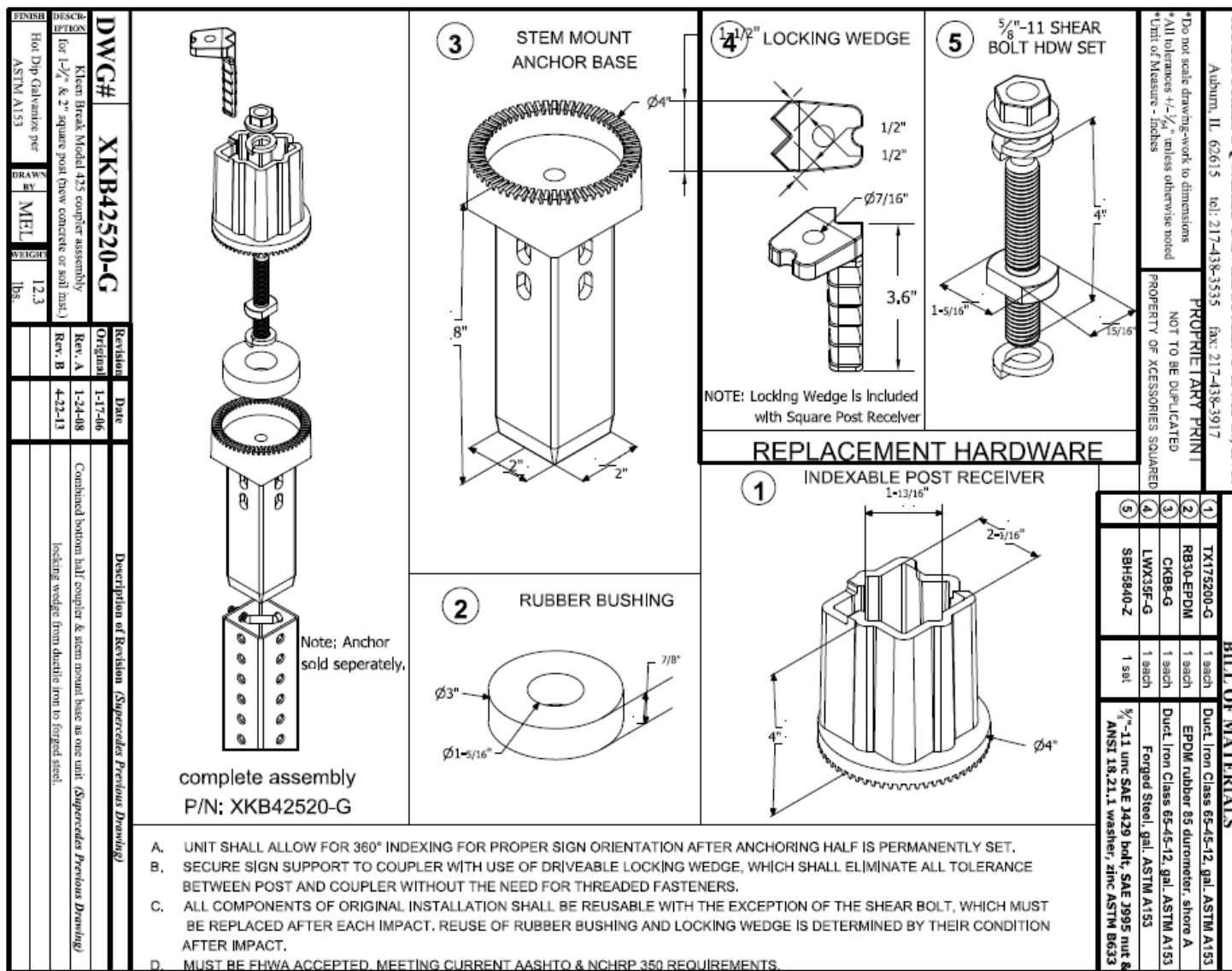


Figure 4: Optional Use for Breakaway Locations

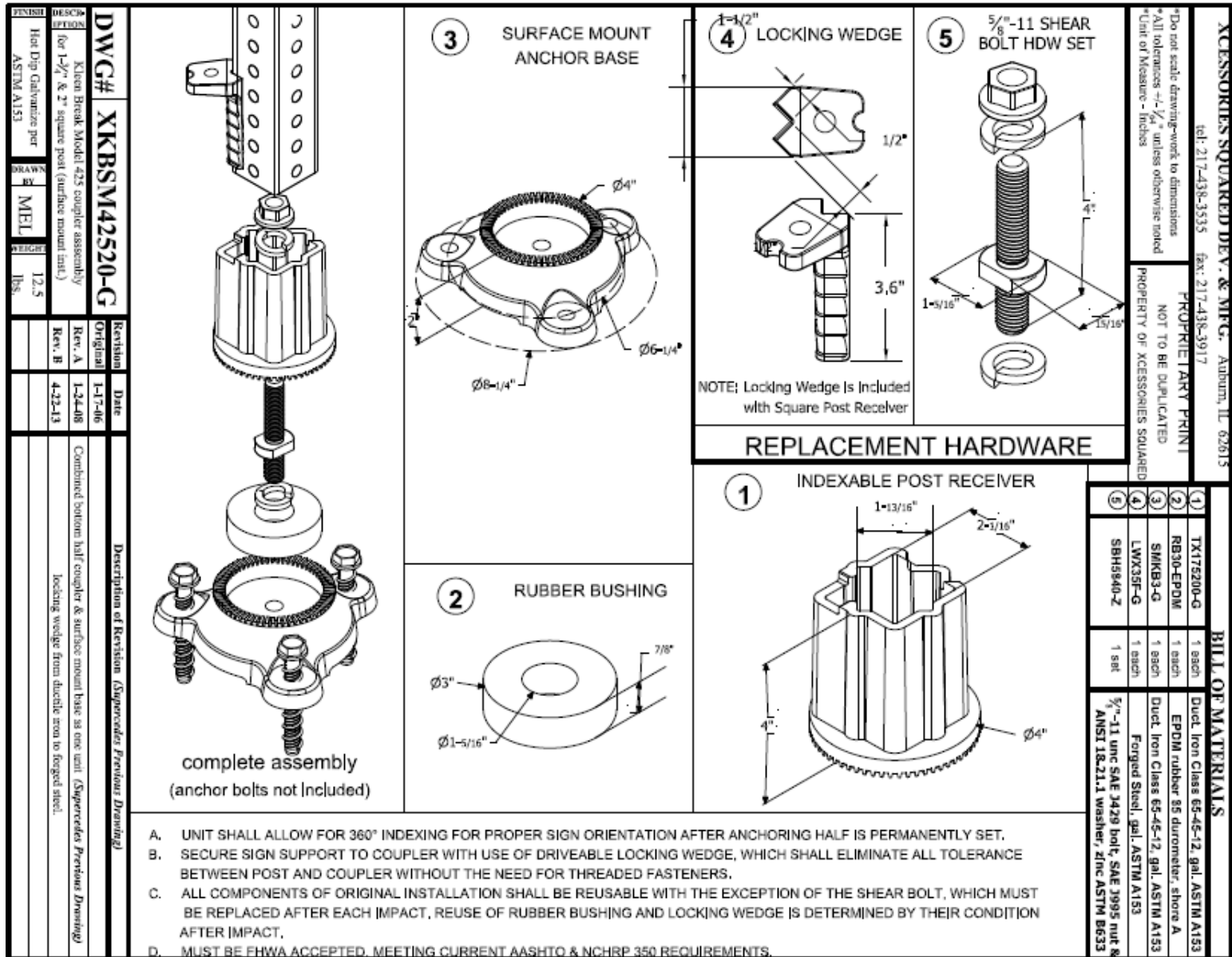


Figure 5: Optional Use for Locations Where Utility Conflicts May Occur

### Parking Restriction Signs

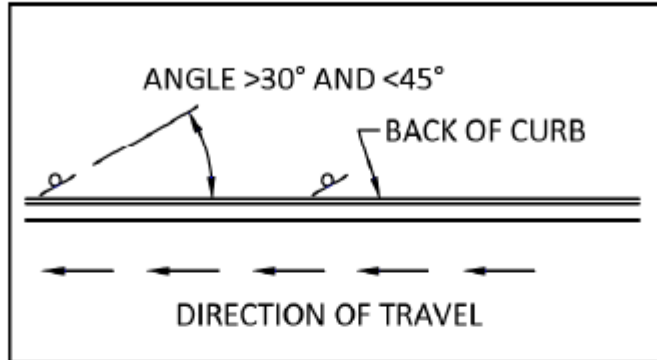
- a) When No Parking signs or Zoned Parking signs are installed between driveways, there should be 17-20 feet between signs to accommodate one vehicle space, or a minimum of 36 feet between signs to allow space for two cars to park.<sup>3</sup>
- b) The angle between Parking signs and direction of travel, should measure between 30 and 45 degrees (Figure 6).

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<sup>3</sup> When “No Parking” signs are installed at the intersections, an adequate “sight triangle” is recommended according to the posted speed limit & traffic control device(s) of the streets forming the intersection

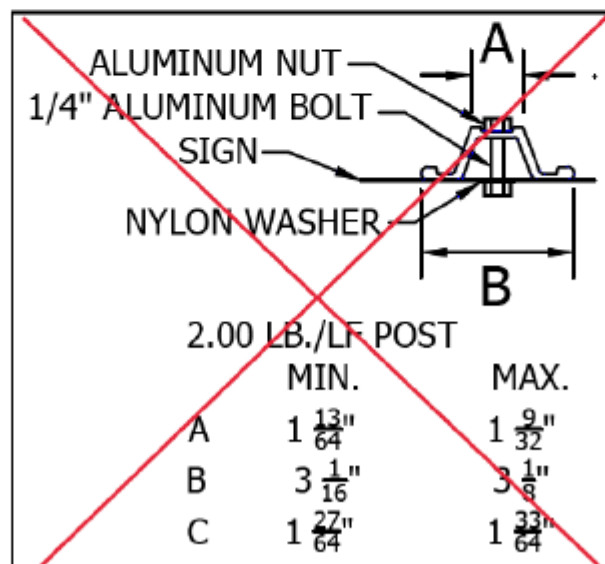
# Updated Parking Signs

## Parking Sign Detail



**NOTES:**

1. PARKING SIGN TO BE MUTCD R7-2 WITH ARROW.
2. WHERE POSSIBLE SIGNS SHOULD BE MOUNTED TO LIGHT POLE WITH STAINLESS STEEL BANDS.
3. DRIVING CAP TO BE USED WHEN DRIVING POST



**Note:**

1. ELIMINATE U-CHANNEL POST FROM ALL PLANS AND REPLACE WITH STANDARD 1321.1 OR 1321.17.

**Figure 6: Parking Sign Detail**

# **APPENDIX A**

**“TYPICAL SIGN TYPES USED BY ARLINGTON COUNTY”**



**Table 1: Size & Dimension of Typical Signs Installed by Arlington County**

<u>SIGN NO</u>	<u>ARLINGTON COUNTY SIGN SIZE</u>	<u>ALTERNATE SIGN SIZE</u>	<u>DESCRIPTION</u>	<u>SIGN NO</u>	<u>ARLINGTON COUNTY SIGN SIZE</u>	<u>ALTERNATE SIGN SIZE</u>	<u>DESCRIPTION</u>
R1-1	30X30	36X36	STOP	R7-201	6X12		Tow Away Zone
R1-2	30X30	36X36	Yield	R8--3AL	18x24		No Parking (Left)
R1-3p	6X18		All Way (plaque)	R8-3AR	18x24		No Parking (Right)
R1-5			Yield Here to Peds	R8-3AB	18x24		No Parking (Both)
R1-5aL	24X30	30X36	Yield Here to Pedestrians (Left)	R10-4c			
R1-5aR	24X30	30X36	Yield Here to Pedestrians (Right)	R10-6a	24X30		Stop Here on Red
R1-5L	24X24	30X30	Yield Here to Peds (Left)	R10-7	24X30		Do Not Block Intersection
R1-5R	24X24	30X30	Yield Here to Peds (Right)	R10-11	24X30		No Turn on Red
R1-6	12X36		In-Street Ped Crossing	R10-11a	24X30		No Turn on Red
R1-6B	12X36		In-Street Ped Crossing	R10-11d	24X24		No Turn on Red From This Lane
R2-1	24X30	30X36	Speed Limit	R10-15	30X30	36X36	Turning Vehicles Yield to Peds
R2-5B	24X30	30X36		R17-3aP			
R3-1	30X30		Movement Prohibition				
R3-3	30X30		Movement Prohibition	S1-1	30X30		School
R3-4	30X30		Movement Prohibition	S2-1			

<u>SIGN NO</u>	<u>ARLINGTON COUNTY SIGN SIZE</u>	<u>ALTERNATE SIGN SIZE</u>	<u>DESCRIPTION</u>	<u>SIGN NO</u>	<u>ARLINGTON COUNTY SIGN SIZE</u>	<u>ALTERNATE SIGN SIZE</u>	<u>DESCRIPTION</u>
R3-5a	30X36		Mandatory Lane Control	S4-3p			School
R3-5L	30X36		Mandatory Movement Lane Control (Left)	S5-2	24X30		End School Zone
R3-5R	30X36		Mandatory Movement Lane Control (Right)				
R3-6L	30X36		Optional Movement Lane Control (Left)	W1-1L	30X30		Horizontal Alignment (Left)
R3-6R	30X36		Optional Movement Lane Control (Right)	W1-1R	30X30		Horizontal Alignment (Right)
R3-7L	30X30		Left Lane Must Turn Left	W1-2L	30X30		Horizontal Alignment (Left)
R3-7R	30X30		Right Lane Must Turn Right	W1-4L	30X30		Horizontal Alignment (Right)
R3-8	36X36		Advance Intersection Lane Control	W1-5L	30X30		Horizontal Alignment (Left)
R3-8R	36X36		Advance Intersection Lane Control (Right)	W1-5R	30X30		Horizontal Alignment (Right)
R3-9a	30X36		Two-Way Left Turn Only (overhead)	W1-8R	18X24		Chevron Alignment (Right)
R3-9cP	12X24		Two-Way Left Turn Only (post-mounted)	W2-1	30X30		Intersection Warning
R3-9dP	12X24		BEGIN	W2-2R	30X30		Intersection Warning (Right)
R3-17	18X24		END	W2-6	30X30		Intersection Warning
R3-17bP	12X24		Bike Lane (plaques)	W3-1	30X30		Advanced Traffic Control
R3-17cP	12X24			W3-2a	30X30		Advanced Traffic Control
R3-17p	12X24			W3-3	30X30		Advanced Traffic Control
R3-20R	24X36			W3-3a	30X30		

<u>SIGN NO</u>	<u>ARLINGTON COUNTY SIGN SIZE</u>	<u>ALTERNATE SIGN SIZE</u>	<u>DESCRIPTION</u>	<u>SIGN NO</u>	<u>ARLINGTON COUNTY SIGN SIZE</u>	<u>ALTERNATE SIGN SIZE</u>	<u>DESCRIPTION</u>
R4--4	30X36		Begin Right Turn Lane Yield to Bikes	W4-4p	12X24		Cross Traffic Does Not Stop (plaque)
R4-7	24X30		Keep Right	W6-3	30X30		Two-Way Traffic
R4-11	30X30		Bicycles May Use Full Lane	W9-2L	30X30		Lane Ends Merge Left
R5-1	30X30		Do Not Enter	W11-1	30X30		Bicycle
R5-1a	18X30	36X24	Wrong Way	W11-2	30X30		Pedestrian
R5-1L			Wrong Way (Left)	W11-15	30X30		Bicycle / Pedestrian
R6-1L	12X36	18X48	One Way (Left)	W12-2	30X30	36X36	Low Clearance (with arrows)
R6-1R	12X36	18X48	On Way (Right)	W13-1	18X18		Advisory Speed
R6-4	24X30		Roundabout Directional (2 chevrons)	W14-1	30X30		Dead End, No Outlet
R6-4L	24X30		Roundabout Directional (2 chevrons) (Left)	W15-1	30X30		Playground
R6-4R	24X30		Roundabout Directional (2 chevrons) (Right)	W16-7	12X24		Downward Diagonal Arrow
R6-5p	30X30		Roundabout Circulation (plaque)	W16-7p	12X24		Downward Diagonal Arrow (plaque)
R7-1	12X18		Parking Restrictions	W16-7pR	12X24		Downward Diagonal Arrow (plaque) (Right)
R7-1L	12X18		Parking Restrictions (Left)	W16-9p	12X24		Ahead (plaque)
R7-8L	12X18	12X24	Parking Restrictions (Left)	W16-15p	12X24		New (plaque)
R7-8R	12X18	12X24	Parking Restrictions (Right)	W17-1	30X30		Speed Hump
R7-20	24X24		Fee Station	W17-1a			

<u>SIGN NO</u>	<u>ARLINGTON COUNTY SIGN SIZE</u>	<u>ALTERNATE SIGN SIZE</u>	<u>DESCRIPTION</u>	<u>SIGN NO</u>	<u>ARLINGTON COUNTY SIGN SIZE</u>	<u>ALTERNATE SIGN SIZE</u>	<u>DESCRIPTION</u>
R7-20a				W23-2	30X30	36X36	New Traffic Pattern Ahead
R7-21	12X18		Parking Restrictions				
R7-22aR	12X18						
R7-22L	12X18		Parking Restrictions (Left)				
R7-22R	12X18		Parking Restrictions (Right)				
R7-101 (MOD)							
R7-107 (MOD)	12X30		Parking Restrictions				
R7-107 (SPECIAL)							

# **APPENDIX B**

## **“RELATED RESEARCH AND STUDIES”**

### **Washington State DOT, Traffic Manual, November 2018**

Chapter 2 of the Washington State Department of Transportation (DOT) Traffic Manual provides guidance on the design, installation and maintenance of various traffic signs. The chapter contains information about sign installation on the state roadway system and is intended for persons involved in traffic operation or design.

### **Oregon DOT Traffic Sign Design Manual- Version 03-04, June 2018**

More specific details about the various standards for designing signs and sign installation (supports) appear in Chapter 2 and Chapter 3 of this manual.

### **Oregon DOT Standard Specification for Construction, 2018**

PART 00800, PART 00900 -Section 00940.47- and PART 02000 - Section 02925.62- provides guidance on Sign Erecting, Signal and Sign Mounting Hardware.

### **Minnesota DOT, Traffic Engineering Manual, October 31, 2009**

The Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) provides legal standards, allowable limits, and alternatives for the design, use, and application of traffic signs. The purpose of chapter 6 of the “Traffic Engineering Manual” is to describe typical applications and procedures related to installation of traffic signs on MN/DOT streets and highways.

### **Sign Installation Guide by United States Department of Agriculture (Forest Service) in Cooperation with USDOT & FHWA, July 2003**

This guide contains information needed to install traffic control signs on National Forest System Roads (NFSR) in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and EM-7100-15, Sign and Poster Guidelines for the Forest Service. It provides a quick visual reference to field personnel placing and maintaining the most often used signs and markers. It does not include every type of sign or marker used, but should give contractors, cooperators, volunteers, and Forest Service personnel guidance on how signs should be installed.