# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-0100</td>
<td>GENERAL STREET POLICIES</td>
<td>7</td>
</tr>
<tr>
<td>7-0101</td>
<td>Street Design</td>
<td>7</td>
</tr>
<tr>
<td>7-0102</td>
<td>Street Dedication</td>
<td>8</td>
</tr>
<tr>
<td>7-0103</td>
<td>Curb &amp; Gutter</td>
<td>8</td>
</tr>
<tr>
<td>7-0104</td>
<td>Service Drive</td>
<td>8</td>
</tr>
<tr>
<td>7-0105</td>
<td>Street Construction</td>
<td>9</td>
</tr>
<tr>
<td>7-0106</td>
<td>Noise Abatement Facilities</td>
<td>9</td>
</tr>
<tr>
<td>7-0107</td>
<td>Street Signs</td>
<td>10</td>
</tr>
<tr>
<td>7-0200</td>
<td>PRELIMINARY STREET PLANNING</td>
<td>15</td>
</tr>
<tr>
<td>7-0201</td>
<td>General Requirements</td>
<td>15</td>
</tr>
<tr>
<td>7-0202</td>
<td>Traffic Counts, Trip Generation and Distribution</td>
<td>16</td>
</tr>
<tr>
<td>7-0203</td>
<td>Street Cross-Section Determination</td>
<td>16</td>
</tr>
<tr>
<td>7-0300</td>
<td>STREET PLAN AND PROFILE REQUIREMENTS</td>
<td>17</td>
</tr>
<tr>
<td>7-0301</td>
<td>Curb Cut Ramps</td>
<td>17</td>
</tr>
<tr>
<td>7-0302</td>
<td>Guardrails</td>
<td>17</td>
</tr>
<tr>
<td>7-0303</td>
<td>Entrances</td>
<td>18</td>
</tr>
<tr>
<td>7-0304</td>
<td>Proposed Street Construction/Plan and Profile Preparation</td>
<td>18</td>
</tr>
<tr>
<td>7-0305</td>
<td>Sight Distance</td>
<td>21</td>
</tr>
<tr>
<td>7-0306</td>
<td>Other Information to be Shown on Plans</td>
<td>22</td>
</tr>
<tr>
<td>7-0400</td>
<td>PAVEMENT DESIGN</td>
<td>26</td>
</tr>
<tr>
<td>7-0401</td>
<td>Design for Subdivision Road Pavements</td>
<td>26</td>
</tr>
<tr>
<td>7-0402</td>
<td>Private Streets, Access Streets and Aisles, Parking Lots</td>
<td>27</td>
</tr>
<tr>
<td>7-0403</td>
<td>Private Driveway Entrances and Pipestem Driveway Standards</td>
<td>28</td>
</tr>
<tr>
<td>7-0404</td>
<td>Dustless Surface Modification or Waiver</td>
<td>29</td>
</tr>
<tr>
<td>7-0500</td>
<td>VDOT POLICY ON THE ACCEPTANCE OF SUBDIVISION STREETS</td>
<td>31</td>
</tr>
<tr>
<td>7-0501</td>
<td>General Acceptance Policies</td>
<td>31</td>
</tr>
<tr>
<td>7-0502</td>
<td>Stub Streets</td>
<td>31</td>
</tr>
<tr>
<td>7-0503</td>
<td>Quit Claim of Utilities</td>
<td>32</td>
</tr>
<tr>
<td>7-0600</td>
<td>PARKING GEOMETRICS AND STANDARDS</td>
<td>33</td>
</tr>
<tr>
<td>7-0601</td>
<td>General Information</td>
<td>33</td>
</tr>
<tr>
<td>7-0602</td>
<td>Geometrics and Standards</td>
<td>33</td>
</tr>
<tr>
<td>7-0603</td>
<td>Off-Street Surface Parking Facilities Within Major Underground Utility Easements</td>
<td>35</td>
</tr>
<tr>
<td>7-0700</td>
<td>COMMON/PIPESTEM DRIVEWAYS</td>
<td>36</td>
</tr>
<tr>
<td>7-0701</td>
<td>General Requirements</td>
<td>36</td>
</tr>
<tr>
<td>7-0702</td>
<td>Access Easements</td>
<td>36</td>
</tr>
<tr>
<td>7-0703</td>
<td>Design and Construction Requirements</td>
<td>36</td>
</tr>
</tbody>
</table>
7-0800 STREET LIGHTS .......................................................................................................................................................... 38
7-0801 General Information ...................................................................................................................................................... 38
7-0802 General Requirements .................................................................................................................................................... 38
7-0803 Authorization and Procedures ........................................................................................................................................ 41
7-0804 Standards and Criteria ..................................................................................................................................................... 44
7-0805 Nonstandard Street Lighting .......................................................................................................................................... 50

7-0900 UTILITY LOCATIONS, MAIL BOX AND ROAD EDGE DELINEATOR ...... 53

LIST OF TABLES
Table 7.1 Street Name Abbreviations ........................................................................................................................................ 14
Table 7.2 Layouts for Off-Street Parking Facilities .................................................................................................................. 33
Table 7.3 Parallel Parking Spaces ................................................................................................................................................ 33
Table 7.4 Universal Size Car Spaces ........................................................................................................................................... 34
Table 7.5 Area Classification ......................................................................................................................................................... 48
Table 7.6 Road Classification ........................................................................................................................................................ 48
Table 7.7 Lighting Levels For Proposed & Existing Streets: Standard Roadway Fixture (RF-1 and RF-2)(Light Emitting Diode) ......................................................................................................................... 49
Table 7.8 Lighting Levels For Proposed Curb & Gutter Streets: Alternate Security Fixtures (RF-3)(Light Emitting Diode) ........................................................................................................................................... 50
Table 7.9 Quick Street Light Requirement Selection .................................................................................................................. 50
<table>
<thead>
<tr>
<th>Standard Designation</th>
<th>Plate No.</th>
<th>Description</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS-1</td>
<td>1-7</td>
<td>Standard Typical Section for Two-Lane Streets without Curb and Gutter</td>
<td>7-0101.2, 7-0105.1, 7-0201, 7-0306.6B, 7-0402.4A</td>
</tr>
<tr>
<td>TS-2</td>
<td>2-7</td>
<td>Standard Typical Section for Undivided Streets with Curb and Gutter</td>
<td>7-0101.2, 7-0103, 7-0105.1, 7-0201, 7-0306.6B, 7-0402.5B</td>
</tr>
<tr>
<td>TS-2</td>
<td>3-7</td>
<td>Standard Typical Section for Multi-Lane Streets with Curb and Gutter</td>
<td>7-0101.2, 7-0103, 7-0105.1, 7-0201, 7-0306.6B</td>
</tr>
<tr>
<td>TS-5A</td>
<td>4-7</td>
<td>Private Streets – Townhouse, Patio, Garden Court, Etc.</td>
<td>7-0101.2, 7-0103, 7-0105.1, 7-0306.6B, 7-0402.2A</td>
</tr>
<tr>
<td>TS-7</td>
<td>5-7</td>
<td>Standard Typical Section – R-C Cluster Subdivision Streets</td>
<td>7-0101.2, 7-0105.1, 7-0304.5A, 7-0305.3, 7-0306.6B</td>
</tr>
<tr>
<td>TU-1</td>
<td>6-7</td>
<td>Typical Standard for Cul-de-sac and “Y” Turnaround</td>
<td>7-0101.2, 7-0103, 7-0105.1, 7-0306.6B, 7-0702.1</td>
</tr>
<tr>
<td>TU-2</td>
<td>7-7</td>
<td>Cul-de-sac on Ditch Section Street - Treatment of Transition</td>
<td>7-0101.2, 7-0105.1, 7-0306.6B</td>
</tr>
<tr>
<td>CGM-1</td>
<td>8-7</td>
<td>Standard Combination Curb and Gutter and Sidewalk</td>
<td>7-0101.2, 7-0103, 7-0105.1, 7-0306.6B</td>
</tr>
<tr>
<td>Standard Designation</td>
<td>Plate No.</td>
<td>Description</td>
<td>Section</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PS-1</td>
<td>9-7</td>
<td>Standard Entrance – Pipestem Lots – Ditch Section</td>
<td>2-0103.3, 7-0101.2, 7-0105.1, 7-0306.6B, 7-0403.2A, 7-0701, 7-0702.1</td>
</tr>
<tr>
<td>PS-2</td>
<td>10-7</td>
<td>Standard Entrance – Pipestem Lots – Curb and Gutter Section</td>
<td>2-0103.3, 7-0101.2, 7-0103, 7-0105.1, 7-0306.6B, 7-0701, 7-0702.1</td>
</tr>
<tr>
<td>TS-3</td>
<td>11-7</td>
<td>Standard Typical Street Construction Section for Service Drives with Curb</td>
<td>7-0103, 7-0104.2, 7-0105.1, 7-0306.6B</td>
</tr>
<tr>
<td>SS-1</td>
<td>12-7</td>
<td>Shoulder Stabilization at Intersections</td>
<td>7-0105.1, 7-0306.6B</td>
</tr>
<tr>
<td>SNS-1</td>
<td>13-7</td>
<td>Standard Street Name Sign – Post Mounted</td>
<td>7-0107.1, 7-0107.4, 7-0104.5, 7-0107.6F</td>
</tr>
<tr>
<td>SNS-2</td>
<td>14-7</td>
<td>Standard Aluminum Street Name Sign Bracket and Plate</td>
<td>7-0107.1, 7-0107.4, 7-0107.5, 7-0107.6C, 7-0107.6F</td>
</tr>
<tr>
<td>SNS-2</td>
<td>15-7</td>
<td>Alternate Post Anchoring Detail for Round Post</td>
<td>7-0107.1, 7-0107.4, 7-0107.5, 7-0107.6C, 7-0107.6F</td>
</tr>
<tr>
<td>SNS-3</td>
<td>16-7</td>
<td>Standard Aluminum Cantilevered Pole Mounted Street Name Wing Bracket</td>
<td>7-0107.1, 7-0107.4, 7-0107.5, 7-0107.6C</td>
</tr>
<tr>
<td>SNS-3</td>
<td>17-7</td>
<td>Specifications for Cantilevered Pole Mounted Sign Wing Bracket</td>
<td>7-0107.1, 7-0107.4, 7-0107.5, 7-0107.7</td>
</tr>
<tr>
<td>TCS-1</td>
<td>17A-7</td>
<td>Typical Detail for Standard Wood Post Stop and Yield Signs</td>
<td>7-0107.1, 7-0107.4, 7-0107.5</td>
</tr>
<tr>
<td>Standard Designation</td>
<td>Plate No.</td>
<td>Description</td>
<td>Section</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------</td>
<td>--------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>TCS-2</td>
<td>17B-7</td>
<td>Typical Locations for Stop and Yield Signs</td>
<td>7-0107.1, 7-0107.4, 7-0107.5</td>
</tr>
<tr>
<td>CUL-1</td>
<td>17C-7</td>
<td>Temporary Cul-De-Sac Sign</td>
<td>7-0107.1, 7-0107.4, 7-0107.5</td>
</tr>
<tr>
<td>CUL-2</td>
<td>17D-7</td>
<td>Temporary Cul-De-Sac Sign Detail</td>
<td>7-0107.1, 7-0107.4, 7-0107.5</td>
</tr>
<tr>
<td>PDS-1</td>
<td>18-7</td>
<td>Pipestem Driveway Sign</td>
<td>7-0107.4, 7-0107.5, 7-0403.2A, 7-0701, 7-0703.2</td>
</tr>
<tr>
<td>TB-1</td>
<td>19-7</td>
<td>Standard Traffic Barricade</td>
<td>7-0306.9</td>
</tr>
<tr>
<td>DE-5</td>
<td>20-7</td>
<td>Standard Driveway Entrance Streets – No Curb and Gutter</td>
<td>7-0403.1A</td>
</tr>
<tr>
<td>PS-3</td>
<td>21-7</td>
<td>Asphalt Concrete Pipestem Standards</td>
<td>7-0403.2A, 7-0701, 7-0703.2</td>
</tr>
<tr>
<td>PS-3A</td>
<td>22-7</td>
<td>Concrete Pipestem Standards</td>
<td>7-0403.2A, 7-0701, 7-0703.2, 7-0703.2B</td>
</tr>
<tr>
<td>TLL-1</td>
<td>23-7</td>
<td>Design Example: Residential Subdivision</td>
<td>7-0802.1A(3), 7-0804.7</td>
</tr>
<tr>
<td>TLL-2</td>
<td>24-7</td>
<td>Design Example: Residential Subdivision</td>
<td>7-0802.1A(3), 7-0804.7</td>
</tr>
<tr>
<td>TLL-3</td>
<td>25-7</td>
<td>Design Example: Industrial Subdivision</td>
<td>7-0802.2C, 7-0804.7</td>
</tr>
<tr>
<td>TLL-4</td>
<td>26-7</td>
<td>Design Example: Commercial Subdivision</td>
<td>7-0802.3B, 7-0804.7</td>
</tr>
<tr>
<td>TLL-5</td>
<td>27-7</td>
<td>Design Example: Planned Development</td>
<td>7-0802.4D, 7-0804.7</td>
</tr>
<tr>
<td>RF-1</td>
<td>28-7</td>
<td>Standard Roadway Fixture – Shoebox Cobra Head for Ditch Section Roads</td>
<td>7-0804.1A(1), 7-0804.6A</td>
</tr>
<tr>
<td>RF-2</td>
<td>29-7</td>
<td>Standard Roadway Fixture – Shoebox Cobra Head for Curb and Gutter Roads</td>
<td>7-0804.1A(1), 7-0804.6A, 7-0804.6B</td>
</tr>
<tr>
<td>IT-2</td>
<td>29A-7</td>
<td>Special Expressway Roadway Fixture for Major Roadways</td>
<td>7-0804.1A(3)</td>
</tr>
<tr>
<td>Standard Designation</td>
<td>Plate No.</td>
<td>Description</td>
<td>Section</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------</td>
<td>--------------------------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>RF-3</td>
<td>30-7</td>
<td>Colonial Style Fixture for Subdivision Roadways with Curb and Gutter</td>
<td>7-0804.1A(2), 7-0804.6C</td>
</tr>
<tr>
<td>N/A</td>
<td>30A-7</td>
<td>Accessible Parking Signs</td>
<td>7-0602.4</td>
</tr>
<tr>
<td>N/A</td>
<td>30B-7</td>
<td>Van Accessible Parking Signs</td>
<td>7-0602.4</td>
</tr>
<tr>
<td>N/A</td>
<td>30C-7</td>
<td>Posting Signage for Accessible Parking</td>
<td>7-0602.4</td>
</tr>
<tr>
<td>UL-1</td>
<td>31-7</td>
<td>Utility Locations – Water, Gas, Sewer</td>
<td>7-0900.1</td>
</tr>
<tr>
<td>UL-3</td>
<td>32-7</td>
<td>Standard Pole Locations</td>
<td>7-0900.1</td>
</tr>
<tr>
<td>MB-1</td>
<td>33-7</td>
<td>Mail Box Location</td>
<td>7-0900.1</td>
</tr>
<tr>
<td>RD-1</td>
<td>34-7</td>
<td>Road Edge Delineator</td>
<td>7-0900.1, 7-0304.20C</td>
</tr>
</tbody>
</table>
7-0100 GENERAL STREET POLICIES

7-0101 Street Design

7-0101.1 Streets must be provided to give access to adjoining property to the satisfaction of the Director. Also, streets must be provided to connect with appropriate highways and with appropriate streets to adjoining developments.

7-0101.2 All rights-of-way must conform to the standards set forth in the current VDOT Subdivision Street Requirements (SSR), VDOT Subdivision Street Acceptance Requirements (SSAR), Multimodal Design Standards for Mixed-Use Urban Centers, and Plates 1-7 through 10-7.

A. Context-sensitive urban road design standards, including but not limited to minimum street width and parking, that are established by a Memorandum of Understanding (MOU) or letter of approval between Fairfax County and VDOT may deviate from the requirements set forth in the VDOT Road Design Manual and the PFM, and may be used only in areas specified in the MOU or letter of approval.

7-0101.3 In subdivisions developed as R-C Clusters, 50-foot-wide access easements will only be required to adjoining properties which are otherwise land locked by having access only by means of a right-of-way less than 50 feet wide. No street construction will be required within the required 50-feet wide access easement.

7-0101.4 Subdivision blocks must be spaced so as to provide reasonable traffic circulation within and between existing or anticipated subdivisions, except as limited above for R-C Cluster developments.

7-0101.5 Traffic Calming

A. Traffic calming measures for all existing roadways or segments of roadways already incorporated in the VDOT secondary road system must be in accordance with VDOT standards and the Fairfax County Residential Traffic Administration Program (RTAP).

B. Traffic calming measures designed on new subdivision streets not yet incorporated in the VDOT secondary road system must be in accordance with VDOT standards and the RTAP guidelines.

1. For any by-right development incorporating traffic-calming measures, the community support requirement in the RTAP guidelines do not apply.
2. For any proposed development requiring approval of a rezoning, special exception or special permit and incorporating traffic-calming measures, the community support requirements in the RTAP guidelines apply only if stipulated by the Fairfax County Department of Transportation.

7-0102 Street Dedication

7-0102.1 The width of the right-of-way must be established in accordance with the current Fairfax County Comprehensive Plan and the VDOT Road Design Manual. The width must account for all features, which are to be maintained by VDOT.

7-0102.2 The subdivider may be required to dedicate more than one-half of the right-of-way, if necessary, to improve the horizontal alignment or meet the minimum design standards for that street.

7-0102.3 Also, the subdivider may be required to assume responsibility for grading, widening, surfacing, or curbing of the street as may be deemed necessary by the Director and VDOT to meet minimum State and County safety and/or design standards.

7-0102.4 When a development abuts one side of any street which has been included in the VDOT roadway system, the developer must dedicate one-half of any right-of-way necessary to make the street comply with the minimum width.

7-0103 Curb & Gutter (See Plates 2-7, 3-7, 4-7, 6-7, 8-7, 10-7, 11-7)

7-0103.1 Curb and gutter must be installed on the side of arterial, collector and local streets which provide frontage to lots within new subdivisions in which the average lot size is less than 18,000 square feet.

7-0103.2 Header curbs must be installed for raised medians and service drives for proper channelization of traffic as deemed necessary by the Director.

7-0103.3 Curb cuts for commercial and industrial use entrances must be in accordance with the current VDOT Road and Bridge Standards and the VDOT Road Design Manual.

7-0103.4 No curb cut on public streets may be less than 30 feet from the point of curvature of the curb line/edge of pavement return of the intersecting streets.

7-0104 Service Drive

7-0104.1 Whenever a development abuts a road which is included in the State system of primary highways (route numbers below 600), a service drive extending for the
full length of the development along the road, and providing limited access thereto, must be provided; however, in subdivisions approved for R-C Cluster development, dedication only, without construction, will be required. The situations outlined in § 7-0104.3 are not subject to this paragraph.

7-0104.2 Service drive construction must conform to the standards as set forth in Plate 11-7.

7-0104.3 Service drives are not required along adopted Virginia byways or the Dulles Toll Road (Route 267), or interstate highways. The plan must clearly label the interstate highway, the Dulles Toll Road (Route 267), or the street designated as a Virginia byway by the Commonwealth of Virginia Transportation Board. The Board of Supervisors or the Director may waive service drive requirements if the service drive provisions of Article 17 of the Zoning Ordinance are met. However, service drive waivers will not be required in areas where design guidelines (i.e., Tysons, comprehensive plan, revitalization district standards) do not require them.

7-0105 Street Construction

7-0105.1 All streets should be constructed and surfaced in accordance with the standards set forth in Plates 1-7 through 12-7.

7-0105.2 Where required, easements of widths appropriate to the purpose intended must be provided.

A. If the design engineer is unable to obtain off-site easements necessary to construct streets to the property line, it may be permissible to stop the street construction a distance from the boundary of the development sufficient to allow the proper slope to the boundary line, and provide a deposit for future completion of the street to the boundary line.

B. In this case, on-site grading easements must be obtained for future completion of the street when the off-site area is developed.

C. Slope construction easements must be shown where required.

7-0106 Noise Abatement Facilities

7-0106.1 On roads where the Board by resolution has designated noise abatement districts or corridors, the grading plans for the subdivisions and site plans must show noise abatement measures where the Director deems such construction would be effective.
7-0000 STREETS, STREET LIGHTS, PARKING AND DRIVEWAYS

7-0106.2 There are no specific engineering criteria for the abatement of noise which can be built into every street design. Each street is a separate case which must be designed separately to achieve the desired results.

7-0106.3 Noise buffers may be provided by three methods:

A. Distance, such as greater setbacks;

B. Bulk or mass, such as masonry walls or earthen berms; and/or

C. Elevation, lowering or raising the source so as to remove it from the plane in which its force will be strongest against that which is to be protected.

7-0106.4 The design of noise abatement devices is flexible and is the responsibility of the submitting engineer. It is also the responsibility of the submitting engineer to prove to the Director that they attempted to provide noise abatement design in those areas designated by the Board.

7-0107 Street Signs

7-0107.1 Vandal-proof street name signs (see Plates 13-7 to 17-7) must be installed within the dedicated public street right-of-way at all street intersections in a location satisfactory to the Director.

7-0107.2 A street name sign is required for all common pipestem driveways or private streets indicating the private street name, where applicable, the house numbers, and designation “private driveway.”

7-0107.3 All private street and private driveway signs that do not meet the vandal-proof sign standard for use within the dedicated public street right-of-way must be privately owned and privately maintained.

7-0107.4 All methods and materials must conform to the standards as set forth in Plates 13-7 through 18-7, and § 7-0107.6.

7-0107.5 Street signs must be installed at all street intersections in a location satisfactory to the Director based on the following criteria used by VDOT (see Plates 13-7 through 18-7, and § 7-0107.6 et seq.).

A. Stop or Yield signs must be placed at intersections on those streets that have the least amount of anticipated traffic, in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and as approved by VDOT for public streets or the Director for private streets.
B. Stop signs must be placed at intersections where the potential of poor sight distance would necessitate a full stop to increase safety.

7-0107.6 Street Sign Specifications

A. The name plate must be a minimum width of 9 inches. The blank length to be used for a given street name is the shortest length on which the name will fit when 6 inch letters are used except the length will be a minimum of 30 inches.

B. The maximum length is 48 inches unless approved by the Director and Sign Shop Supervisor of DPWES.

C. The blank name plate will be of the “EXTRUDED” type and consist of aluminum alloy, ASTM 209B-6063-T6, treated with “ALODINE 1200” chemical conversion coating process. The extruded blank name plate must have a web thickness of 0.090 inches and flange thickness of 0.250 inches and each corner of the name blank must be square cut. Holes are required in the blank name plate as detailed in Plates 14-7, 15-7 and 16-7.

D. The sign background must be blue sheet reflective materials, letters must be silver reflective sheeting, 3M® brand, conforming to the specifications for “Encapsulated Lens Reflective Sheeting for Traffic Control Signs,” as specified by VDOT Road and Bridge Specifications, Section 701.02, also specified in Federal Specification LS300C, Reflectivity 2, and specifications on file with the Director, or approved equal. (Approval by the Director and Sign Shop Supervisor of DPWES.) The specification on file with the Director contains a sheeting manufacturer’s field performance and replacement obligation. The reflective material must be applied to both sides of the treated blank name plate with mechanical equipment in a manner specified by the sheeting manufacturer. The sign background must be comprised of not more than one piece of reflective sheeting. Reverse screen process color method of fabrication is acceptable, but only if the process colors used are approved by the sheeting manufacturer. Screen process colors must be clear coated.

E. Letter size and type will conform to MUTCD, 6 inches high or 3 inches, as applicable for street name and abbreviation. The letter height of the street name may be reduced from 6 inches to 5 inches when use of the 6-inch letters would require a sign blank longer than 48 inches.

F. The extruded street name plates must be mounted to the sign post by means of a post to sign (post top) bracket and sign to sign (cross) bracket made of high strength die-cast aluminum alloy number 380 having a tensile strength of 49,000 psi, such as Model No. VSS-6 as supplied by Vulcan Signs or an approved equal. The post top and cross brackets must have two angled gussets or ribs on each side.
for extra strength and must be smoothly finished free of holes, pits or flaws. Each set of brackets must be drilled and tapped to receive six each 5/16 – 18 ½ inch, 12-point spline head bolts and four each 5/16 – 18 3/8-inch hex head set screws with 5/32-inch center pin, made of stainless steel, zinc, or cadmium plated steel. Post top and cross brackets must be cast or machined to receive extruded blades with a 0.090-inch web and 0.250-inch flange thickness. Six vandal-proof 12-point spline head bolts and four hex head set screws with center pin must be furnished with each set of brackets. The complete unit must be rigidly fastened together and must be theft proof when fastened to the post. The signs must be non-rotating. The post will be galvanized steel 2-3/8 inches outside diameter, schedule 40, wall thickness 0.154 inches, such as manufactured by United States Steel or an approved equal. The post must be installed either in a concrete footing or an approved alternate anchoring system. When using concrete, the post and footing must be at least 2-feet deep and the concrete must extend a minimum of 4 inches outside the edges of the pipe. The concrete must be exposed at the ground surface, see Plate 13-7. A key or anchor rod must be provided in the post, 6 inches from the bottom of the post to prevent lifting and turning. The post may also be set 2 feet in the ground and supported by an approved anchor device which is listed in Plates 14-7 and 15-7.

G. At signalized intersections, street name signs for both streets will be installed on all vertical supports for the traffic signals. Signs will be mounted with standard aluminum cantilevered pole mounted street name brackets.

H. The bottom of the lowest street name plate must be 10 feet above ground level, except at signalized intersections. At signalized intersections, the bottom of the lowest street name plate must be at least 16 feet above ground level.

I. The shorter name plate must be mounted above the longer name plate in the assembly. No more than 2 name plates must be mounted in each assembly.

J. In subdivisions where no curb and gutter is placed, the street name sign must be erected in such a manner that the longest name plate is a minimum of 2 feet back of the ditch line and is safe from damage from traffic.

K. In subdivisions where curb and gutter is placed, the street name sign must be erected to conform to the location standard.

7-0107.7 Specifications for cantilevered pole mounted street name sign wing brackets. (See Plate 17-7).

A. Purpose. The purpose of this specification is to set forth certain specific minimum design requirements for a pole mounted street name sign wing bracket suitable for mounting modern street name signs, of lengths up to 48
inches and 9 inches upon the sides of steel, aluminum or wood traffic signal vertical supports and capable of being mounted either upon the side of pipe having an outside diameter of 2 inches or more.

B. General Description

1. The brackets sought must be cast of high strength aluminum alloy, or approved non-corrosive alternate, degreased, tumbled and polished to a low-sheen smooth finish to assure resistance to the accumulation of dirt and weather-borne deposits which might wash down upon the street name sign blades and cause premature defacement of the signs.

2. The brackets must be “L” shaped in design, with one leg of the “L” intended for attachment to the upright support, and the other leg intended to cantilever out from the support to provide bracing for the sign against both vertical and lateral forces. The design of the bracket must make it suitable either for nailing, screwing or banding to wood supports, or for bolting or banding to metal supports. The leg for attachment to the support must be equipped with 3/8-inch holes, 1 inch on centers, or multiples thereof, to match the standard spacing of holes in channel posts.

3. The bracket must be designed to accept and support the sign in the angle of the L, and each leg of the L must be integrally cast block, containing a vertical slot with minimum dimensions 1-inch long, 1-inch deep and 0.140-inches wide for securing the sign blade to the bracket.

4. The sides of all slots must be solid metal with two holes per slot (both on the same side of the slot), drilled and tapped to accept two special saw tooth heat-treated plated steel fasteners 5/16 inch – 18 UNC-2B for securing the sign blades against removal from the slots by vandalism, and to minimum fatigue failures in the sign blade resulting from wind vibration. The side of each slot opposite the set screws must be cast or machined accurately vertical to assure when installed, the sign assembly will not appear bent or askew.

C. Sample

1. A sample of the cantilevered bracket must be submitted to the purchaser, for approval of design at bid opening to assure that the bracket offered meets the requirements of purchaser and meets the purpose and intent of the specification.

2. Using a level is recommended on installation of posts, brackets, and signs.
3. Back of channel to be slotted for insertion of an aluminum leveling shim.

7-0107.8 List of Street Name Abbreviations – Standard SNS-1.

Table 7.1 Street Name Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Original Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALLEY</td>
<td>ALEY</td>
</tr>
<tr>
<td>AVENUE</td>
<td>AVE</td>
</tr>
<tr>
<td>BOULEVARD</td>
<td>BLVD</td>
</tr>
<tr>
<td>CENTER</td>
<td>CTR</td>
</tr>
<tr>
<td>CIRCLE</td>
<td>CIR</td>
</tr>
<tr>
<td>CLUSTER</td>
<td>CL</td>
</tr>
<tr>
<td>CORRIDOR</td>
<td>CORR</td>
</tr>
<tr>
<td>COURT</td>
<td>CT</td>
</tr>
<tr>
<td>COVE</td>
<td>COVE (not CV)</td>
</tr>
<tr>
<td>CAUSEWAY</td>
<td>CSWY</td>
</tr>
<tr>
<td>DRIVE</td>
<td>DR</td>
</tr>
<tr>
<td>EAST</td>
<td>E</td>
</tr>
<tr>
<td>GREEN</td>
<td>GR</td>
</tr>
<tr>
<td>GROVE</td>
<td>GRV</td>
</tr>
<tr>
<td>HEIGHT</td>
<td>HT</td>
</tr>
<tr>
<td>HIGHWAY</td>
<td>HWY</td>
</tr>
<tr>
<td>ISLE</td>
<td>ISLE (not IS)</td>
</tr>
<tr>
<td>LANE</td>
<td>LA</td>
</tr>
<tr>
<td>LANDING</td>
<td>LND</td>
</tr>
<tr>
<td>LOOP</td>
<td>LP</td>
</tr>
<tr>
<td>NOOK</td>
<td>NK</td>
</tr>
<tr>
<td>NORTH</td>
<td>N</td>
</tr>
<tr>
<td>PATH</td>
<td>PATH (not PA)</td>
</tr>
<tr>
<td>PIKE</td>
<td>PIKE (not PI)</td>
</tr>
<tr>
<td>PASS</td>
<td>PASS (not PS)</td>
</tr>
<tr>
<td>PARKWAY</td>
<td>PKWY (not PKY)</td>
</tr>
<tr>
<td>PLAZA</td>
<td>PLZ</td>
</tr>
<tr>
<td>ROAD</td>
<td>RD</td>
</tr>
<tr>
<td>RIDGE</td>
<td>RDG</td>
</tr>
<tr>
<td>RUN</td>
<td>RUN (not RN)</td>
</tr>
<tr>
<td>ROADWAY</td>
<td>RDWY (not RDY)</td>
</tr>
<tr>
<td>ROW</td>
<td>ROW (not RW)</td>
</tr>
<tr>
<td>SOUTH</td>
<td>S</td>
</tr>
<tr>
<td>SQUARE</td>
<td>SQ</td>
</tr>
<tr>
<td>STREET</td>
<td>ST</td>
</tr>
<tr>
<td>TRACE</td>
<td>TC</td>
</tr>
<tr>
<td>TERRACE</td>
<td>TER</td>
</tr>
<tr>
<td>TURNPIKE</td>
<td>TPKE</td>
</tr>
<tr>
<td>TRAIL</td>
<td>TR</td>
</tr>
<tr>
<td>VIEW</td>
<td>VIEW (not VW)</td>
</tr>
<tr>
<td>WALK</td>
<td>WALK (not WK)</td>
</tr>
<tr>
<td>WAY</td>
<td>WAY (not WY)</td>
</tr>
<tr>
<td>WEST</td>
<td>W</td>
</tr>
</tbody>
</table>
7-0200 PRELIMINARY STREET PLANNING

7-0201 General Requirements. All streets which are to be dedicated for public use, must be designed to comply with the applicable geometric standard in accordance with the current VDOT Road Design Manual and Plates 1-7 through 3-7.

7-0201.1 In order to determine the proper street cross-section to use to facilitate review and approval of preliminary plats, the following information must be provided for each street intersection:

A. The number of vehicles per day entering and leaving the intersection must be noted on each leg of each street in each direction.

B. The proposed street right-of-way, together with the proposed width of street (face of curb to face of curb or edge of pavement to edge of pavement) for each block on every street in the subdivision, is to be shown.

C. All street construction must be within the dedicated street right-of-way. Easements will not be accepted to make up the minimum required right-of-way if any construction is proposed thereon. Slope construction easements must be provided where required.

7-0201.2 The following information must be shown for all streets which intersect the exterior boundary of the subdivision and which will provide access to adjoining undeveloped property:

A. Number of acres expected to contribute vehicles to this street;

B. An indication of how the adjoining property is shown on the adopted comprehensive plan together with the number of units per acre residential density proposed;

C. The total number of units expected to be contributing to the subject street; and

D. The total vehicles per day expected to be using the street.

7-0201.3 For streets which intersect the exterior boundary of the subdivision and connect with existing, dedicated or proposed streets in adjoining subdivisions, the following is required:

A. The number of lots from the adjoining subdivision from which vehicles will be expected to use the subject street; and
B. The number of vehicles expected to enter the subdivision over the subject street from said lots.

7-0202 Traffic Counts, Trip Generation and Distribution

7-0202.1 Peak hour traffic estimates must be used for intersection analysis. Twenty-four-hour ADT counts must be used to determine typical sections.

7-0202.2 Trip Generation must be calculated in accordance with the current VDOT Road Design Manual and VDOT Administrative Guidelines for the Traffic Impact Analysis Regulations (24VAC 30-155-10).

7-0202.3 All preliminary plats must show trip distributions for: the traffic which will be generated by the subject development; traffic from the adjoining development passing through it; or traffic from adjoining undeveloped property which will ultimately be subdivided with traffic passing through the subject subdivision.

7-0203 Street Cross-Section Determination

7-0203.1 Cross-sections may be reduced at intersections and at entrances contributing high volumes of traffic.

7-0203.2 If a through street has a wide cross-section on both ends and traffic volumes would indicate a reduction for only several hundred feet in the middle of the development, the full width street section must be continued for its entire length.

7-0203.3 Averaging of traffic volumes (e.g., averaging 6,000 VPD on one end of the street with 2,000 VPD on the other end to produce a 4,000 VPD volume and thus a lower cross-section) is not permitted for the purpose of reducing cross-sections.

7-0203.4 All calculations which indicate the number of vehicles per day for each portion of each street in the subdivision must be shown to expedite the review for conformance of proposed typical sections with VDOT standards. Lacking this information, it will be assumed that no estimates have been made and the plan will be returned for inclusion of traffic data.
7-0300  STREET PLAN AND PROFILE REQUIREMENTS

7-0301  Curb Cut Ramps

7-0301.1 Policy on Ramps for Mobility Impaired Persons:

A. If in the right-of-way, all developments must provide standard curb-cut ramps in conformance with VDOT standards (current version of IIM-LD-55). When outside the right-of-way, utilize Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the Virginia USBC standards. Consideration must be given to curb cut ramps when establishing right-of-way widths.

B. In parking lots for commercial and industrial site plans, standard curb-cut ramps must be located at the major crosswalks. Where site plan sidewalks are constructed at various vertical elevations, a curb-cut ramp must be installed at each sidewalk elevation.

C. Churches, schools and appropriate public facilities site plans must provide standard curb-cut ramps as required by the Director.

D. All requirements of the Virginia USBC must be met.

7-0301.2 Location of Ramps for Mobility Impaired Persons:

A. The locations of curb-cut ramps for mobility impaired persons must be indicated per standards in § 8-0000 et. seq.

7-0302  Guardrails

7-0302.1 The location of guardrails must be indicated on the plans.

7-0302.2 A guardrail must be provided where determined by VDOT for public streets, or as determined by the Director for private streets when vehicles are to be protected from drops in excess of 10 feet.

A. The actual starting and stopping point of the guardrail will be determined by the VDOT representative in the field after the fill has been placed.

B. Generally, a guardrail may be omitted when the side slopes are 6:1 or flatter for a minimum of 25 feet from the edge of pavement unless there are hazardous obstacles within the clear zone limits.

C. Approval of alternatives by VDOT is required before plans will be approved by the Director.
D. The following note must appear on all plans: “Standard guardrail and handrails must be installed at hazardous locations, as designated during final field inspection by VDOT on all roads maintained by or to be maintained by VDOT and by Fairfax County for all other roads.”

E. Sidewalk location in relation to guardrail must be in accordance with the current Appendix B of the VDOT Road Design Manual.

7-0303 Entrances

7-0303.1 All driveway entrances (including pipestem entrances) must be indicated, along with the size, length, and type of driveway entrance culvert.

7-0303.2 CG-11 entrances must be used for subdivision street connections.

7-0303.3 CG-11 entrances must be used for all commercial entrances, entrances of parking bays, parking courts, townhouses, etc.

7-0303.4 All two-way commercial entrances from public streets, including entrances to townhouse or multi-family dwelling developments and private streets, must be a minimum of 30-feet wide at the back of the entrance return.

7-0304 Proposed Street Construction/Plan and Profile Preparation

7-0304.1 Stations must be indicated every 100 feet on centerline; at points of curvature, points of intersection and points of tangency; at centerline intersections, at subdivision or section limits; and at turnaround radius points.

7-0304.2 Existing centerline profiles for 200 feet minimum distance must be shown to insure a proper grade tie when a proposed street is an extension of or connects with an existing street.

7-0304.3 When a proposed street intersects with an existing street, the centerline profile of the existing street must be shown for 350 feet minimum distance to right and left of proposed connection.

7-0304.4 The centerline and building restriction line profiles extended 300 feet beyond the property line or boundary must be shown on all street providing access to adjoining property.

7-0304.5 A grade line of all proposed street construction must include:
A. Percent of grade. The minimum grade for curb and gutter is one percent except that the Director may allow a decrease to ½ percent based upon unusual topographic conditions. The maximum grade of street construction is in accordance with the current VDOT Road Design Manual and Plate 5-7 of the PFM except as may be approved by the Director.

B. Elevations at the beginning and the end of all vertical curves.

C. The length of vertical curves with elevations and stations of vertical points of intersection (PVI).

D. Elevations computed every 500 feet on all tangent sections, and grades computed every 25 feet in all vertical curves.

E. Elevations at all:
   1. Centerline intersections of streets;
   2. Street centerline intersections with the boundaries of a subdivision;
   3. Curb returns;
   4. Culvert and storm sewer crossings; and
   5. Curb inlets.

F. The point of finished grade on typical section (i.e., centerline, top of curb, etc.) must be shown.

7-0304.6 Paved roadside ditches must be indicated in the profile where the depth is not in conformance with the standard street cross-section.

7-0304.7 All proposed and existing culverts, storm sewer crossings, sanitary sewer crossings, and utility crossings must be shown on street profiles at the proper location and grade.

7-0304.8 When a proposed street parallels or is located near an existing stream or open drainageway, profiles of the top of the bank of the stream, computed water elevations and invert (or flow line) of stream or open drainageway must be provided. The relationship of a proposed street grade to existing profiles of the stream or open drainageway must be shown. Street construction may not encroach on the approved floodplain limit of the stream.
7-0000 STREETS, STREET LIGHTS, PARKING AND DRIVEWAYS

7-0304.9 Grade profiles of proposed curb and gutter construction in cul-de-sacs are to be computed along the face of the curb starting at the beginning of the curb return, following the face of curb around the cul-de-sac to the end of the return opposite the point of beginning.

A. Grade ties of the proposed street, before entering the cul-de-sac grade, must be shown on each end of the cul-de-sac grade profile to insure proper grade connection.

B. Other acceptable methods may be used subject to the approval of the Director and VDOT.

7-0304.10 Building restriction line profiles for cul-de-sacs must be radial to the existing profile at face of curb and proposed curb grade.

7-0304.11 If a temporary turnaround/cul-de-sac is to be constructed at the end of a street which is intended to be extended with the development of the abutting property, the proposed grade and existing profiles must be carried through to provide for the future extension of the proposed street for a distance of 300 feet beyond the property line. Final lot grading of the proposed extension must be shown on the grading plan.

A. If approved by the Director, the developer must provide and post a sign informing the public at temporary cul-de-sacs that the cul-de-sac is temporary and the road is subject to continuation in the future. The sign must be located so as to be clearly visible to drivers and pedestrians entering the cul-de-sac bulb. The sign must be in place before the issuance of the first residential use permit for any residence in the related site plan/subdivision plan that is using the street for access. The sign must be maintained by the developer until bond release, or until the roadway is accepted into the VDOT system for maintenance and operations, whichever occurs first, after which the sign will be maintained by Fairfax County.

7-0304.12 Street construction must be provided for the full frontage of all lots.

7-0304.13 All street improvements intended for public maintenance must be constructed within the dedicated street right-of-way.

7-0304.14 The maximum centerline grade of permanent cul-de-sacs is 3 percent. However, steeper grades may be permitted in certain instances with the prior approval of the Director.

7-0304.15 If a difference exists in elevations on proposed curb grades, curb elevations showing top of right curb and top of left curb must be shown on the plans.
7-0304.16 Curb returns must be shown on the profiles. The identification, by number, of the curb returns may be required on the plan and profile.

7-0304.17 Street landings must be provided on plans to ensure adequate sight distance.

7-0304.18 Driveway profiles where steep grades prevail must be shown. Lot grading plans must provide for adequate vehicular clearance for driveway approaches, departures and breakover transitions.

7-0304.19 Profiles of the centerline of a street and both left and right curb returns must be shown at the intersections of streets on steep grades to assure proper transition from one street to the other.

7-0304.20 A proper connection to any proposed VDOT construction must be shown when appropriate.

A. VDOT approval is required on all plans and revisions within VDOT rights-of-way.

B. State route numbers of existing streets must be shown.

C. A symmetrical transition of the pavement at an intersection with existing street must be shown.

1. Transitions must be a minimum of 60 feet from the end of the curb return to the existing edge of pavement.

2. A longer pavement transition and a turn lane may be required depending on the location of the intersection. Standard road edge delineators must be shown. (See Plate 34-7.)

7-0305 Sight Distance

7-0305.1 All sight distance requirements on streets to be publicly maintained must be in accordance with the current VDOT Road Design Manual. Sight distance must be shown along the actual line of sight. Sight distance for the left turn position into an entrance or street must be addressed. VDOT recognizes only two types of entrances onto the highway system; private entrances and commercial entrances.

A. Subdivision street connections to the existing highway system are considered as commercial entrances until these streets are accepted into the highway system.
B. Roads within subdivisions, including commercial entrances, must meet the intersection sight distance requirements and stopping sight distance requirements.

7-0305.2 Sight distances must take into consideration any objects that will restrict sight distance, including vegetation, which may only be apparent in the spring and summer. Two-feet vertical clearance is desirable along the line of sight. Two-feet horizontal clearance is desirable from the line of sight. Additional sight distance may be required with heavy truck volume and/or steep grades in accordance with Appendix C of the current VDOT Road Design Manual.

7-0305.3 The sight distance requirements of R-C cluster subdivision streets, which are to be privately maintained must be determined as set forth in Plate 5-7.

7-0305.4 Within new subdivision streets, for private residential entrances serving only one or two lots, sight distance requirements are based on providing stopping distance for a vehicle in the street with a height of eye and a height of object in accordance with the current VDOT Road Design Manual.

7-0305.5 If the design speed is unknown, it must be assumed to be 5 mph above the posted speed limit.

7-0305.6 Profiles of existing roads must be shown for a minimum of 350 feet or the applicable sight distance length, whichever is greater, beyond the limits of construction.

7-0306 Other Information to be Shown on Plans

7-0306.1 The design for all pipestem driveways must be shown, either by reference to a standard or by drawings. Turnarounds and the location of required utilities must also be shown.

7-0306.2 Adequate ingress-egress easements must be provided when more than one lot is to use a common driveway.

7-0306.3 Paved ditches at edge of roadway and at the toe of a fill must be shown along with easements where necessary. Computations for determining the need for paved ditches must be provided.

7-0306.4 A maximum 2:1 slope at end of street construction, with a necessary easement, must be shown on the plan.

7-0306.5 Erosion and Sediment control protection to be provided at the end of construction of curb and gutter must be shown.
7-0000 STREETS, STREET LIGHTS, PARKING AND DRIVEWAYS

7-0306.6 The typical cross-section for public and private streets and access aisles must be shown.

A. Where a special typical section is approved, details must be provided on plans.

B. Typical sections and geometric design criteria for streets must conform to the current VDOT Road Design Manual and Plates 1-7 through 12-7.

7-0306.7 Cul-de-sacs must be provided at the ends of all dead-end streets, except where exempted by the stub street criteria in § 7-0600 et seq.

A. The minimum pavement radius in the cul-de-sac is 45 feet and the minimum right-of-way radius of the cul-de-sac is 52 feet for curb and gutter and 55 feet for ditch section streets.

B. As may be determined by the Director, the minimum pavement radius of a cul-de-sac is 60 feet and the minimum right-of-way radius of the cul-de-sac is 70 feet for the purpose of providing a turnaround area for public school buses.

C. The Director may require the greater cul-de-sac radius for school bus turnaround purposes where one or more of the following factors are present and indicate the present or future need for a school bus turnaround:

1. Parking is permitted on the cul-de-sac.

2. There is no other means of providing safe and convenient access within a subdivision to an established or proposed school bus stop.

3. The cul-de-sac is further than 600 feet from an interior cross-section connection.

4. The cul-de-sac would serve to eliminate a school bus stop along an existing or proposed road with a respective traffic count of greater than 5,500 VPD.

5. The proposed cul-de-sac is greater than 1 mile from an existing or proposed elementary school site.

7-0306.8 Sidewalks must be shown where required by the Subdivision Ordinance, Zoning Ordinance or the PFM.

7-0306.9 Traffic barricades or OM-4 Series Object Markers referenced in the MUTCD and “NO THRU STREET” signs must be shown where required. (See Plate 19-7.)
7-0000 STREETS, STREET LIGHTS, PARKING AND DRIVEWAYS

7-0306.10 Water service cutoffs must be located in utility strips unless otherwise permitted by the Director.

7-0306.11 Asphalt header curb may be approved for use on site plans and subdivisions only when it is of a temporary nature and is expected to remain in place for a short duration. It will not be approved for use in parking lots on commercial sites.

7-0306.12 The following notes must be shown on all plans: A smooth grade must be maintained from centerline of existing road to proposed curb and gutter to preclude the forming of false gutters and/or the ponding of any water on the roadway.

7-0306.13 The following notes must be shown for all streets, service drives, etc., R-1 through R-5:

A. The methods and materials used in the construction of all streets must conform to the current VDOT Road and Bridge Specifications unless herein modified.

B. Rights-of-way must be cleared for full width, all utilities in place, fine graded to true typical section before asphalt material is applied.

C. Dust control must be maintained on those sections of the project as may be designated by the inspector.

D. A sidewalk must be provided as required by § 101-2-2 of the Subdivision Ordinance and Zoning Ordinance, § 17-201. Further, sidewalks must be constructed in accordance with the PFM. VDOT will accept maintenance in accordance with their current Subdivision Street Requirements. Where required, proposed sidewalks must be constructed in accordance with UD-3 standards.

E. Water curb stops or meters will not be accepted in the gutter line or wings of driveways aprons. Water curb stops or meters are to be located in the grass strip between the back of the curb and the front edge of the sidewalk.

7-0306.14 If private streets are proposed in the development that do not meet VDOT standards, the following note must be included on all plans and plats associated with the private streets: “The private streets in this development do not meet the standards necessary for inclusion in the system of state highways and will not be maintained by VDOT or Fairfax County, and are not eligible for rural addition funds or any other funds appropriated by the General Assembly of Virginia and allocated by the Commonwealth Transportation Board.” If private streets are proposed in the development that are constructed to VDOT standards, but are not intended for inclusion in the system of state highways, the following note must be
included on all plans and plats associated with the private streets: “The private streets in this development are not intended for inclusion in the system of state highways and will not be maintained by VDOT or Fairfax County, and are not eligible for rural addition funds or any other funds appropriated by the General Assembly of Virginia and allocated by the Commonwealth Transportation Board.”
7-0401.1 Required thicknesses of subbase, base course, and top or surface are shown in the street standards. Subbase thickness is based on a subgrade CBR value of 10. CBR tests of subgrade soils must be conducted for actual determination of required subbase thickness before construction.

7-0401.2 Alternate equivalent pavement sections may be submitted with the approval of the Director before construction. Their design must be in accordance with either the current VDOT Pavement Design Guide for Subdivision and Secondary Roads in Virginia or AASHTO Guide for Design of Pavement Structures, 1993 or for CBR test values less than 10, 1 inch of additional aggregate subbase must be provided for each point below 10. The VDOT design method may not be used when any subgrade CBR value is less than 4. When the subgrade CBR value is less than 4, 1 inch of additional subbase is required for each point below CBR 10. If one or both consecutive CBR values are less than 4, the pavement design must be based on the lowest CBR value and remain constant between these test locations.

A. All equivalency values must be determined in accordance with the VDOT Pavement Design Guide, Appendix III, Paving Material & Allowable Values. The pavement design may vary in different sections of the road, where CBR values or traffic volumes change significantly. Subsurface drainage and construction method must be considered in making this determination.

B. Laboratory CBR tests are required for all pavement designs submitted for review. These tests must be made at each change in subgrade soils and at a maximum spacing of 500 feet where subgrade soils remain constant. Spacing of CBR tests must be in accordance with the VDOT Pavement Design Guide, and a minimum of two CBR samples will be required for cul-de-sac or dead end streets of less than 500 feet in length.

C. Where base asphalt is required, a minimum thickness of 1½ inches of temporary asphalt surface must be placed immediately after the base has been compacted and cured. Temporary asphalt must be placed and maintained in “sag” curves to provide positive drainage to curb inlets. The temporary asphalt must be removed immediately before placing the final surface course. As an alternate method of obtaining positive drainage, the approach gutters for drop inlet structures in sag areas must temporarily be omitted. Instead, the face block is to be secured to the drop inlet and the base asphalt is to be finished flush with the opening of the structure at the face block. Immediately before placement of the final surface course, the base asphalt must be removed and the approach gutter section cast.
7-0000 STREETS, STREET LIGHTS, PARKING AND DRIVEWAYS

7-0402  **Private Streets, Access Streets and Aisles, Parking Lots**

7-0402.1 Private streets must be located in accordance with § 11-300 of the Zoning Ordinance and § 101-2-2 of the Subdivision Ordinance.

7-0402.2 In residential developments subject to shared:

A. For geometric design, see Plate 4-7.

B. For pavement design, see standard pavement § 7-0402.6.

7-0402.3 For single family condominium and single family residential, five or less lots:

A. For geometric design, use the pipestem lot standards.

B. For pavement design, use standard pavement § 7-0402.6.

7-0402.4 For single family residential (including condominium) subdivisions in which the average lot size or equivalent is 18,000 square feet or more and when the street serves more than five units:

A. The geometric design must be in accordance with the current VDOT Road Design Manual for shoulder and ditch section streets and Plate 1-7.

B. The pavement design must be in accordance with the current VDOT Pavement Design Guide for Subdivision and Secondary Roads in Virginia.

7-0402.5 For single family residential (including condominium) subdivisions in which the average lot size or equivalent is less than 18,000 square feet and when the street serves more than five units:

A. The geometric design must be in accordance with the current VDOT Road Design Manual for curb and gutter section streets and Plate 2-7.

B. The pavement design must be in accordance with the current VDOT Pavement Design Guide for Subdivision and Secondary Roads in Virginia.

7-0402.6 Standard Pavement Design

A. When maintained by the property owner (e.g., shopping centers, office buildings):

1. A 6-inch base and a 1 1/4-inch asphalt surface is required to ensure a dustless surface.
2. No soils test or subbase will be required.

3. A Prime and Double Seal surface treatment may be approved by the Director in light traffic situations.

4. Portland Cement Concrete pavement design in accordance with current engineering procedures is acceptable.

B. When maintained by individual homeowners, a homeowners’ association or similar organization:

1. A 6-inch base and a 2½-inch asphalt surface is required to ensure a dustless surface.

2. Soils tests must be provided for the laboratory CBR test, VTM-8. If the CBR is less than 10, 1 inch of subbase is required for each point below CBR 10. If the subgrade CBR is 10 or greater, no subbase is required. These criteria do not apply to subdivisions or their metric equivalent.

3. A concrete pavement designed in accordance with current engineering procedures is acceptable.

All aggregate subbase and base material, as well as subgrade for all streets, parking areas, sidewalks, shoulders, and curb and gutter must be compacted in accordance with VDOT Road and Bridge Specifications, Sections 305, 308 and 309.

**Private Driveway Entrances and Pipestem Driveway Standards**

7-0403.1 Private Driveways

A. Private driveway entrances on curb and gutter streets must conform to VDOT Road and Bridge Standards (CG-9B through CG-9D). Private driveway entrances on streets with no curb and gutter must conform to Plate 20-7.

7-0403.2 Pipestem Driveways

A. For geometric design, see Plates 9-7, 10-7, 18-7, 21-7 and 22-7.

B. For pavement design, see standard pavement § 7-402.6.
C. All aggregate subbase and base material, as well as subgrade for pipestem driveways must be compacted in accordance with VDOT Road and Bridge Specifications, Sections 305, 308 and 309.

7-0404 Dustless Surface Modification or Waiver

7-0404.1 General Policy. The Director may approve a modification or waiver of the dustless surface requirements for off-street parking and loading areas, including aisles and driveways, upon a determination that the modification or waiver will not have an adverse impact on the site and on the surrounding area with regard to such factors as the natural environment, storm drainage, water quality, and erosion and sediment.

7-0404.2 An application for a modification or waiver is reviewed based on the following items:

A. Structure or use to which the off-street parking or loading area is accessory.

B. Stated reasons for the request of the dustless surface modification or waiver.

C. Requested duration of the dustless surface modification or waiver.

D. Type(s) and location of proposed alternate parking lot surface(s).

E. Size of the parking and loading area(s) and the percentage of these areas proposed for alternate surfacing.

F. Type of vehicles which will use the facility and frequency of use.

G. Soil types and details/sections of proposed alternate surface(s).

H. Proposed maintenance program.

I. Resultant effect of the modification or waiver on the natural environment, storm drainage, water quality and erosion and sediment.

J. Proposed method of delineation of parking spaces and travelways.

7-0404.3 The proposed alternate surface must consist of gravel. Other alternate surfaces, such as grass reinforcement systems and other appropriate surfaces, may be considered for use by the Director upon specific request based on factors related to storm drainage, frequency of use, types of vehicles used, soil conditions, and other relevant concerns.
The Director may approve or deny the request and may impose any conditions, restrictions and time limitations deemed necessary to assure that the off-street parking and/or loading areas will be compatible with and will not adversely impact the adjacent area. Such conditions and restrictions can include but need not be limited to, the following:

A. The size and location of the alternate surface area may be restricted, and additional landscaping and transitional screening may be required to protect adjacent areas.

B. Pavement must be placed from the edge of the existing abutting roadway for a minimum distance of 25 feet into the interior of the site at each entrance and exit to prevent the parking area surfacing materials from entering the abutting street.

C. Runoff must be channeled away from and/or around driveway and parking area entrances. In addition, proper drainage provisions are required to ensure the stability of the alternate surface used in lieu of a dustless surface.

D. The vehicle speed limit must be restricted to 10 mph less.

E. Parking spaces, loading spaces, and travelways must be constructed and maintained in good condition at all times.

F. Periodic inspections must be performed by the owner to monitor dust conditions, drainage adequacy, and the compaction and migration of all surfaces.

G. Routine maintenance must be performed on the parking lot surface to prevent unevenness, wear-through to subgrade soil, and the creation of potholes. Corrective action must be taken to alleviate such problems as they occur.

H. The application of water, or other substance approved by the Director, must be made during dry periods to the surface to control dust.

I. A maintenance agreement must be provided satisfactory to the Director.

The Director has the right to revoke the approval of a dustless surface modification or waiver and require a dustless surface to be constructed at the owner’s expense for violations of the conditions of approval, or when the Director determines that a change in the use of the site, site conditions or adjacent properties warrants the provision of a dustless surface.
7-0500  VDOT POLICY ON THE ACCEPTANCE OF SUBDIVISION STREETS

7-0501  General Acceptance Policies

7-0501.1  VDOT policy on the acceptance of publicly maintained subdivision streets must be in accordance with the current VDOT Subdivision Street Requirements (SSR), VDOT Subdivision Street Acceptance Requirements (SSAR), or Multimodal Design Standards for Mixed-Use Urban Centers.

7-0502  Stub Streets

7-0502.1  Stub streets of a lot depth in length will be accepted into the State Secondary Highway System under the following conditions:

   A. There is no entrance access from the contiguous lots to the stub streets.

   B. The approved preliminary plat of the subdivision delineates the extension of the stub street on future sections of the subdivision.

      1. In this instance the construction plan must note that the street will be extended as a part of subsequent construction plans yet to be submitted, or

      2. A preliminary plat of an adjacent parcel has been submitted which shows a connection to the stub street, or

      3. The stub street is the sole access to an adjacent parcel, or

      4. The stub street is a portion of a future street as delineated on an adopted Comprehensive Plan, or

      5. Stub streets, requested by the Director to facilitate future traffic circulation between a subdivision being developed and an adjoining undeveloped property when it eventually becomes subdivided, and which have the concurrence of VDOT, are acceptable.

   C. Adequate on-site and off-site topography is provided to ensure that the stub streets can be extended to meet the current standards for street construction.

7-0502.2  Short dead-end streets that terminate at the subdivision boundary which are proposed for future extension beyond the subdivision boundary, and serve one or more lots, will be provided with a temporary cul-de-sac, constructed in a temporary easement, located either on-site or off-site. Funds must be deposited with the Director for removal of an on-site cul-de-sac when the street is extended.
7-0503 Quit Claim of Utilities

7-0503.1 All utilities or other facilities located in the VDOT right-of-way must quit claim their rights in dedicated streets in exchange for a permit from VDOT.

7-0503.2 The permit must be requested concurrently with the request for acceptance of the streets into the VDOT system for maintenance. The permit would also cover any overhead or underground crossings.
7-0600 PARKING GEOMETRICS AND STANDARDS

7-0601 General Information

7-0601.1 See Article 11 of the Zoning Ordinance for required number of parking spaces per use. Parking must also conform with any applicable rezoning, special exception, special permit or variance.

**Table 7.2 Layouts for Off-Street Parking Facilities**

There must be three major layouts for off-street parking facilities for automobiles:

- Parallel Parking
- Universal Size Car Parking
- Accessible Parking for Persons with Disabilities

7-0602 Geometrics and Standards. The following tables represent the minimum size requirements for required automobile parking spaces:

7-0602.1 Parallel Parking Spaces

**Table 7.3 Parallel Parking Spaces**

<table>
<thead>
<tr>
<th>Direction of Parking</th>
<th>Stall Width ft.</th>
<th>Depth of Stalls ft.</th>
<th>Aisle Width ft.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-way aisle (one-side parking)</td>
<td>8</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>One-way aisle (two-side parking)</td>
<td>8 (16 feet total)</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>Two-way aisle (two-side parking)</td>
<td>8 (16 feet total)</td>
<td>22</td>
<td>20</td>
</tr>
</tbody>
</table>

* Where required, fire lanes must be in accordance with § 9-0202.21(4).
7-0602.2 Universal Size Car Spaces

<table>
<thead>
<tr>
<th>Table 7.4 Universal Size Car Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parking Angle</strong></td>
</tr>
<tr>
<td>45°</td>
</tr>
<tr>
<td>60°</td>
</tr>
<tr>
<td>90°</td>
</tr>
</tbody>
</table>

* Where required, fire lanes must be in accordance with § 9-0202.2I(4).
** This dimension may be reduced by up to 1.5 ft. where the Director determines that adequate “head-in” overhang exists exclusive of required planting or screening requirements, and sidewalks.

7-0602.3 Motorcycle Parking Spaces. When provided, motorcycle parking spaces must conform to the following minimum geometrics. The stall width must be 4 feet and the depth of the stall perpendicular to the aisle must be 9 feet. The travel aisle must be as set forth in Tables 7.3 and 7.4.

A. Motorcycle parking spaces are not considered in the required parking tabulation.

7-0602.4 Accessible parking spaces, related access aisles and accessible routes for persons with disabilities must conform to all requirements of the USBC. Copies of the applicable specifications are available from the International Code Council. Each such space must be identified by an above-grade sign. The required signs must be 12 inches wide by 24 inches high. These signs must display the internationally recognized symbol of accessibility and the words “DMV PERMIT REQUIRED, PENALTY $100 - $500 FINE TOW-AWAY ZONE” as illustrated in Plate 30A-7. Van accessible spaces must have an additional sign 12 inches wide by 7 inches high and must display the words “VAN ACCESSIBLE” as illustrated in Plate 30B-7 and must be mounted below the primary sign. All required signs must be installed on a wall or post so that the lower edge of the sign(s) is not less than 4 feet nor more than 7 feet above grade as illustrated in Plate 30C-7. Such signs must be located so they cannot be obscured by a vehicle parked in the space. These signs must consist of white lettering on a blue background.

7-0602.5 Bicycle Parking. Bicycle parking must be consistent with the Fairfax County Bicycle Parking Guidelines.

7-0602.6 Delineation of Parking Spaces. Except for parking spaces provided for and on the same lot with single family detached or attached dwellings, all paved parking areas must be delineated in accordance with the following:
A. All parking lot delineations must be in white or, at the discretion of the Director, an alternative color may be permitted, if the color is in contrast with the parking lot surface and does not conflict with the delineation of fire lanes or other restricted parking areas.

B. Parking spaces must be delineated with a single line having a minimum width of 4 inches. Parallel curb or head-in parking spaces must be striped for the full width or length of the parking stall. Notwithstanding the above, the Director may approve an alternative delineation of parking spaces upon a determination that the proposed markings clearly define the parking spaces.

C. The width or length of all parking stalls must be measured from the centerline of the stripe or alternative marking to the centerline of the adjacent stripe or marking used to delineate the parking stall or face of a physical barrier, such as a wall or curbing.

D. Parking space delineation must be maintained for visual effectiveness.

E. Parking spaces in unpaved lots must be delineated by providing individual wheel stops for each unpaved parking space, unless an alternative is approved by the Director.

7-0603 Off-Street Surface Parking Facilities Within Major Underground Utility Easements

7-0603.1 Use Limitations

A. The use of concrete or porous pavement material is not permitted.

B. Aboveground permanent structures are not permitted.

C. Underground utility crossings and/or underground utilities which directly serve the parking facility are permitted.

D. A representative of the owner of the major utility easement must be present on-site during all grading and/or construction.
7-0700 COMMON/PIPESTEM DRIVEWAYS

7-0701 General Requirements. See Plates 9-7, 10-7, 18-7, 21-7 and 22-7.

7-0701.1 The desirable maximum grade for all pipestem driveways is 15 percent. The Director may approve grades in excess thereof where an unusual environmental or topographic condition exists.

7-0701.2 All pipestem driveways must have an adequate angle of approach and angle of departure with a landing at the connecting street. All pipestem driveways must have a minimum centerline radius of 50 feet.

7-0702 Access Easements

7-0702.1 Adequate ingress and egress easements must be provided when more than one lot is to use a common driveway, and suitable provision must be made for a turnaround on all pipestem driveways serving three or more lots as per Plates 6-7, 9-7 and 10-7.

7-0702.2 Single lot pipestems under 12 feet in width must be provided with an ingress and egress easement 12 feet in width.

7-0702.3 All pipestem driveways regardless of number of units served or easement width must have such additional easements provided for slopes where necessary due to terrain. Easements must note which lots have the right to use these driveways.

7-0703 Design and Construction Requirements

7-0703.1 The plan view, including necessary turnaround, utilities, and typical section of pipestem driveways serving more than one lot, must be shown on the grading plan for each construction or development phase. The pipestems must be included in each project’s completion bond.

7-0703.2 Pipestem driveways must be designed and constructed in accordance with Plates 1-2, 18-7, 21-7 and 22-7, except that:

A. In R-C Cluster subdivisions, the wearing surface of pipestem driveways may be surfaced with a prime coat and a double seal treatment over proper base, in accordance with VDOT Road and Bridge Specifications, Section 309, 314, 315 and 316.

B. A 6-inch welded wire fabric reinforced concrete pavement is acceptable in lieu of 2 ½-inch asphalt surface (see Plate 22-7).
1. Concrete must be as specified by Table II-17 of VDOT Road and Bridge Specifications, Section 217, Class 20 General Use, central mixed, and delivered in agitator-type equipment.

2. The reinforcement must be adequately supported by metal chairs at a level of 3 inches (+ or -½ inches) above the bottom of concrete.

3. Expansion joints must be provided every 30 feet in accordance with VDOT Road and Bridge Specifications, Section 212, and must be placed all the way through the joints.

4. Contraction joints must be provided every 15 feet. The joints must be 1½ inches deep.

5. Longitudinal control joints must be provided in the center of all pipestems.

6. Compaction of subgrade must conform to VDOT Road and Bridge Specifications, Section 305. The compaction must be verified by County inspectors before placing the concrete.

7. The pavement surface must have a minimum cross slope of 50:1. Storm water runoff may not be channeled longitudinally within the paved portions of the pipestem or along the edge unless curb and gutter is provided. When a crown is used, a well-defined swale must be provided, as required, on both sides of the drive.

8. Concrete curing materials must conform to VDOT Road and Bridge Specifications, Section 220.

9. Opening to traffic must conform to VDOT Road and Bridge Specifications, Section 316.04.

10. Concrete may be hand-finished, and must be provided with a broom or burlap drag texture.

11. Material, equipment and construction methods must comply with VDOT Road and Bridge Specifications, except where stricter specifications are identified.
7-0800  STREET LIGHTS

7-0801  General Information

7-0801.1 Street lighting must be installed, unless waived by the Director with all developments as a requirement of subdivision and site plans for the purpose of enhancing crime deterrence and pedestrian safety, and improving potentially hazardous intersections. The extent of street lighting improvements required for each development must be based on the proposed density and land use. The installation costs of the required street lighting improvements must be paid by the Developer.

7-0801.2 The developer must bond 100 percent of the estimated street light installation cost as part of the overall bond required by the Director before plan approval in accordance with § 2-0500 et seq. This bonding estimate will be based on an average cost per street light as determined by the Director. All easements required by the electric utility company for street lighting must be provided by the developer.

7-0801.3 The required street lighting improvements must be installed by the electric utility company serving the new development. However, the developer may perform the civil portion of the installation with the prior approval of the utility company. All required VDOT permits for the purpose of installing street lights must be obtained by the electric utility. The fees for these VDOT permits will be included in the utility company cost estimate to be paid by the developer. The street lighting systems must be owned and maintained by the electric utility, unless the developer opts for a nonstandard street lighting system in accordance with § 7-0805.

7-0801.4 After the street lights are installed and energized, the County will be responsible for making payments to the electric utility company for the monthly operating and maintenance costs.

7-0801.5 The Board may approve a nonstandard street lighting system, if such a system satisfies all the criteria of § 7-0805.

7-0802  General Requirements

7-0802.1 Residential Subdivisions

A. Subdivisions with an Average Lot Size Less Than 18,000 square feet.

1. Street lights must be installed along all subdivision roadways that are or will be included in the State Roadway System and must meet the VDOT clear zone requirements or pass current crash test requirements for obstacles within street clear zones. Along adopted Virginia byways, street
lights are required only at intersections and entrances and to address the safety issues outlined in § 7-0801.1. Street lights are not required along private roadways.

2. A minimum of three street lights must be installed along all the existing and/or proposed State roadway(s) at all entrances into the subdivision, except at private entrances serving a private home. If the frontage along the entrance is not sufficiently long to accommodate the three required street lights, then the number of required street lights must be adjusted accordingly. When subdivision lots are accessed directly from an existing State roadway, street lights must be installed along the entire frontage of these lots, unless the State roadway is designated as an adopted Virginia byway. Along adopted Virginia byways, street lights are required only at road intersections and commercial entrances and to address safety issues outlined in § 7-0801.1.

3. Refer to Plate 23-7 for a typical lighting layout.

B. Subdivisions with an Average Lot Size of 18,000 square feet or greater.

1. Street lights are not required for roadways within subdivisions.

2. A minimum of three street lights must be installed along all the existing State roadway(s) at all proposed entrances into the subdivision, except at private entrances serving a private home. If the frontage along the entrance is not sufficiently long to accommodate these three required street lights, then the number of required street lights must be adjusted accordingly.

3. Refer to Plate 24-7 for a typical lighting layout.

7-0802.2 Industrial and Commercial Subdivisions

A. Street lights must be installed along all roadways that are or will be included in the State Roadway System and must meet the VDOT clear zone requirements or pass current crash test requirements for obstacles within street clear zones. This must include a minimum of one street light at each intersection within the subdivision. Along Virginia byways, street lights are required only at road intersections and commercial entrances and to address safety issues outlined in § 7-0801.1. Street lights are not required along private roadways.

B. A minimum of three street lights must be installed along the existing State roadway(s) at all entrances into the subdivision. When subdivision lots are accessed directly from an existing State roadway, street lights must be installed along the entire frontage of these lots, unless the State roadway is designated as an adopted Virginia byway. Along adopted Virginia byways, street lights
are required only at road intersections and commercial entrances and to address safety issues outlined in § 7-0801.1.

C. Refer to Plate 25-7 for a typical lighting layout.

7-0802.3 Site Plans

A. Street lights must be installed along all existing and/or proposed State roads providing frontage to the development, unless the State roadway is designated as an adopted Virginia byway and must meet the VDOT clear zone requirements or pass current crash test requirements for obstacles within street clear zones. Along adopted Virginia byways, street lights are required only at road intersections and commercial entrances and to address safety issues outlined in § 7-0801.1.

B. Refer to Plate 26-7 for a typical lighting layout.

7-0802.4 Planned Developments (PDH, PDC, PRC, PRM and PTC Districts)

A. Street lights must be installed along all roadways that are or will be included in the State Roadway System unless the State roadway is designated as an adopted Virginia byway and must meet the VDOT clear zone requirements or pass current crash test requirements for obstacles within street clear zones or other standards, as applicable. Along adopted Virginia byways, street lights are required only at road intersections and commercial entrances and to address safety issues outlined in § 7-0801.1.

B. A minimum of three street lights must be installed along all existing or proposed State roadways at all entrances into the development, except at private entrances serving a private home. If the property’s frontage along the entrance is not sufficiently long to accommodate these three required street lights, then the number of required street lights must be adjusted accordingly. Where the existing or proposed State roadway provides frontage to the development, street lights must be installed along the entire frontage, unless the State roadway is designated as an adopted Virginia byway. Along adopted Virginia byways, street lights are required only at road intersections and commercial entrances and to address safety issues outlined in § 7-0801.1.

C. Street lights must be installed throughout the development in accordance with the residential subdivision, industrial and commercial subdivision and site plan requirements as previously stated in § 7-0802.1 et. seq.

D. Refer to Plate 27-7 for a typical lighting layout.
7-0802.5 Public Improvement Plans

A. Street lights must be installed along roadways that are or will be included in the State Roadway System in accordance with the residential subdivision, industrial and commercial subdivision, site plan and planned development requirements as previously stated in § 7-0802.

7-0803 Authorization and Procedures

7-0803.1 Fairfax County is served by two electric utility companies: Dominion Energy (Dominion) and the Northern Virginia Electric Cooperative (NOVEC). Depending on which electric service area the project is located in, the following authorization and procedures apply.

7-0803.2 Dominion Electric Service Area:

A. In order to minimize cost and disruption, Dominion may include the cabling to the new street lights in their construction plans for the electrical infrastructure serving the development. As soon as construction begins, the developer must provide approved plans to Dominion showing all the street lighting improvements that have been bonded with the development.

B. A minimum of 135 days before the desired street light installation date, the developer must request that DPWES obtain a cost estimate and construction sketch for the street lights. DPWES will submit this cost estimate request to Dominion. Dominion will prepare and submit to DPWES a construction sketch and cost estimate within approximately 45 days. The use of common trenches for street light wiring and the electric service to the lots is to be considered in order to minimize cost. Upon receipt, DPWES will review the construction sketch and cost estimate to ensure that the scope of the street light installations conforms to the approved plan and then DPWES will forward the cost estimate to the developer for payment to the County.

C. The developer must make full payment to the County for the street light installations within 30 days after receiving the copy of the cost estimate, but in no case will the payment be accepted by DPWES after the cost estimate has expired. Fully executed copies of all deeds of the required street light easements must be transmitted directly to Dominion. Dominion will not be obligated to install any street lights until authorization from DPWES and all signed easement agreements from the developer have been received. After the payment has been received and cleared by the bank, DPWES will authorize Dominion to proceed with the street light installation.
D. The developer must coordinate directly with Dominion to schedule the installation of street lights. This coordination must be for installation of the wiring for the street lights, concurrently with the electric service, and the subsequent installation of the light poles, fixtures, and final connection when the site is ready for such work. If the street light installations have not been scheduled within one year of the date of the cost estimate, and if the delay is not the fault of Dominion, Dominion may revise the cost estimate, which may require additional payment by the developer.

E. Once full payment has been made by the developer for the bonded street lights and all easements have been granted to Dominion, the developer’s bond can be reduced to account for the street light installation. Any damage claims resulting from the installation of the street lights must be resolved between the developer and Dominion before final bond release.

F. The County will make final payment to Dominion and accept the street lights into the County Street Light System upon the submission of an invoice requesting payment and a standard completion report to DPWES by Dominion, except that the street light installations must be inspected and approved by the County before making final payment and acceptance.

7-0803.3 NOVEC Electric Service Area:

A. As soon as construction begins, the developer must request in writing that NOVEC prepare a cost estimate for the required street lights. The developer must provide approved plans to NOVEC showing all the street lighting improvements that have been bonded with the development.

B. NOVEC must prepare and deliver a street light wiring construction sketch and cost letter to the developer for payment. The use of common trenches for street light wiring and the electric service to the lots is to be considered in order to minimize cost. The developer is to pay NOVEC directly for the required street light wiring work. NOVEC will prepare and provide the developer a cost estimate for the subsequent installation work of the street light poles and fixtures included on the plans, with a copy sent to DPWES. The street light poles and fixtures are to be installed when the site is ready for such work by NOVEC. Easement agreements and plats must be included with this cost letter.

C. DPWES will review NOVEC’s construction sketch and cost estimate to ensure that the scope of the street light installations conforms to the approved development plan. DPWES will authorize NOVEC in writing to include the new street lights into the Fairfax County Street Light Account. If the cost estimate is not in agreement with the approved plans, DPWES will mark up the street light construction sketch indicating the deficiencies found and return it to
NOVEC for correction. Adjustment to the street light layout may need to be made to account for any change in the original existing conditions when the plans were approved. After NOVEC has made the necessary corrections, it will be authorized by DPWES to include these street lights into the County account.

D. The developer must make full payment to NOVEC for the street light installations within the time frame that the cost estimate is valid. Fully executed copies of all deeds of the required street light easements must be included with the payment. NOVEC will not be obligated to install any street lights until full payment and all signed easement agreements have been received. NOVEC must provide DPWES with a copy of the receipt provided to the developer for the street light installation payment.

E. The developer must coordinate directly with NOVEC to schedule the installation of street lights. This coordination must be for installation of the wiring for of the street lights, concurrently with the electric service, and the subsequent installation of the light poles and fixtures when the site is ready for such work. If the street light installations are not completed within one year of the date of payment of the estimated cost, providing the delay is not the fault of NOVEC, NOVEC may require the developer to make additional payment.

F. The developer must submit to the County payment receipts for all the street light installations indicated on the approved plans as verification that the street light requirements have been satisfied. Subject to verification that all required easements have been provided to NOVEC, the developer’s bond can be reduced to account for the street light installation.

G. The County will accept the street lights into the County Street Light System upon the submission of a standard completion report to DPWES by NOVEC, except that the street light installations must be inspected and approved by the County before acceptance.

7-0803.4 DPWES will review the electric utility company construction sketch and cost estimate to ensure that the scope of the street light installations conforms to the approved development plan. DPWES will authorize in writing the electric utility company to include the new street lights into the Fairfax County Street Light Account. If the cost estimate is not in agreement with the approved plans, DPWES will mark up the street light construction sketch indicating the deficiencies found and return it to the electric utility company for correction. Adjustment to the street light layout may need to be made to account for any change in the original existing conditions when the plans were approved. After the electric utility company has made the necessary corrections, it will be authorized by DPWES to include these street lights into the County account.
7-0803.5 The developer must make full payment to the electric utility company for the street light installations within the time frame that the cost estimate is valid. Fully executed copies of all deeds of the required street light easements must be included with the payment. The electric utility company will not be obligated to install any street lights until full payment and all signed easement agreements have been received. The electric utility company must provide DPWES with a copy of the receipt provided to the developer for the street light installation payment.

7-0803.6 The developer must coordinate directly with the electric utility company to schedule the installation of street lights. This coordination must be for the wiring of the street lights, concurrently with the electric service, and the subsequent installation of the light poles and fixtures when the site is ready for such work. If the street light installations are not completed within one year of the date of the cost estimate payment, providing the delay is not the fault of the electric utility company, the electric utility company may require the developer to make additional payment.

7-0803.7 The developer must submit to the County payment receipts for all the street light installations indicated on the approved plans as verification that the street light requirements have been satisfied and that the developer’s bond can be reduced to account for the street light installation.

7-0803.8 The County may accept the street lights into the County Street Light System upon the submission of a standard completion report to DPWES by the electric utility company, except that the street light installations must be inspected and approved by the County before acceptance.

7-0804 Standards and Criteria

7-0804.1 Luminaire Style

A. There are three standard lighting fixture styles and poles available for use. The selection of the style of fixture and pole combination for a particular development is to be made in relation to the area classification (see Table 7.5) and roadway classification (see Table 7.6). These lighting fixtures are to be set in accordance with the current VDOT Road Design Manual, Section A-2, Clear Zone Guidelines for fixed objects and must meet the VDOT clear zone requirements or pass current crash test requirements for obstacles within street clear zones. The available lighting fixtures are as follows:

1. Dominion Shoebox Cobrahead or NOVEC Cobrahead (RF-1 and RF-2): This is a cut-off fixture which is bracket mounted to a concrete (RF-2) or wood pole (RF-1) (see Plates 28-7 and 29-7). These two fixtures can be used on all roadways and area classifications, where the clear zone is less
than 20 feet. When street light poles are set in-line with an existing power pole line, the light pole is to be wood (RF-1). When the light pole is to be set in an area where the electrical distribution is underground, the poles are to be concrete (RF-2). When the street light poles are set in front of an existing pole line, either RF-1 and RF-2 (preferred) can be used.

2. Colonial Cut-off (RF-3): This is a top pole mounted coach fixture on a black fiberglass pole that is set in the utility strip (see Plate 30-7).

3. Expressway (EX): This special fixture is only used on primary roadways where the VDOT’s clear zone is greater than 20 feet. This fixture can be installed on wood poles (EX-1) or concrete (EX-2) (see Plate 29A-7).

B. Local Roadways in Residential, Single Family Detached Dwelling, classification areas: The preferred luminaire is the Colonial Cut-off (RF-3). This fixture is limited to curb-and-gutter roadways and underground electrical wiring. As an alternative, the RF-1 and RF-2 can also be used. For local roadway with commercial or industrial classifications, use RF-1 or RF-2 luminaires.

C. Collector and Arterial roadways in Commercial/Industrial and Residential classification areas: Luminaires to be used are the RF-1 or RF-2. Where the clear zone for fixed objects is greater than 20 feet, the luminaires to be used are the EX-1 and EX-2.

7-0804.2 Street Light Source

A. The standard light source for all street lights is the Light Emitting Diode (LED) with Smart City capability. The use of LED street lights must conform to the standards as set forth in Tables 7.7 and 7.8, unless otherwise approved by the Director.

B. Any use of existing Mercury Vapor (MV), High Pressure Sodium (HPS), or Metal Halide (MH) street lights along existing state frontage must be converted to LED. These new fixtures must meet the requirements of the American National Standards Institute/Illuminating Engineering Society’s (ANSI/IES) Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting (ANSI/IES RP-8-18, or latest).

7-0804.3 Light Level Requirements. Illumination levels are determined based on area classification as described in Tables 7.7, 7.8 and 7.9. See Tables 7.5 for definitions of area classifications. Due to the variations in the geometrics and traffic counts for existing State roadways, the design of street lights at these locations is site specific. The initial design of these street lights must conform to the generalized standards as
set forth in Table 7.7. Special coordination with DPWES during the preparation of this street light design may be required to address specific site conditions. The design of these street lights must be shown on the first submission construction plans. This street light design may be subject to revision after review by DPWES. DPWES may also adjust approved street lighting layouts along existing State roadways. DPWES will explain to the developer the reasons why the approved lighting layout is adjusted. These modifications will be made only to coordinate with the location of existing or proposed street lights adjacent to the site or to meet current ANSI/IES RP-8-18.

A. Residential Areas

1. Street lights must be provided along roadways within new residential subdivisions in accordance with § 7-0802.1. Luminaire size and maximum allowable spacing and mounting height must conform to the standards set forth in Tables 7.7 and 7.8.

2. A minimum of three street lights must be provided at all subdivision entrances as set forth in Tables 7.7.

B. Commercial/Industrial Areas

1. Street lights must be provided along all proposed and existing roadways that are or will be included in the State Roadway System within new commercial and industrial subdivisions. Luminaire size and maximum allowable spacing must conform to the standards set forth in Tables 7.7.

2. A minimum of three street lights must be provided at all subdivision entrances as set forth in Tables 7.7.

7-0804.4 Pole Placement and Bracket Length

A. All standard roadway fixtures must be installed in such a manner as to maintain a minimum roadway overhang of 2 feet. All pole locations must conform to the current edition of the VDOT Road Design Manual, Section A-2-Clear Zone Guidelines and must meet the VDOT clear zone requirements or pass current crash test requirements for obstacles within street clear zones.

1. Residential Areas. Poles located at intersections must be installed as close as possible to, but outside, the radius of the intersection. Poles located along roadways between intersections must be installed with a 1-foot offset to side lot property boundaries. All pole placements and bracket lengths must conform to the standards set forth in Tables 7.7.
2. Commercial/Industrial Areas. Poles located at intersections must be installed as close as possible to, but outside, the radius of the intersection. Poles located along roadways between intersections must be installed, if possible, with a 1-foot offset to side lot property boundaries. All pole placements and bracket lengths must conform to the standards set forth in Table 7.7.

B. Standard colonial style roadway lighting fixtures must utilize black fiberglass poles. These poles should be installed 2 feet behind the face of curb.

C. If a development has frontage on an existing or proposed public service road, street lights must be located to light the main roadway in accordance with adopted illumination standards.

7-0804.5 Luminaire Mounting Height – All RF-1 and RF-2 luminaires must be installed with mounting heights as specified in Table 7.7. All RF-3 luminaires must be installed at a height of 14 feet.

7-0804.6 Street light information to be shown on development plans:

A. The standard roadway fixture for use on ditch section roadways is the RF-1 (Plate 28-7). However, the RF-1 can be substituted with the RF-2 (concrete pole with underground wiring) if desired. The RF-1 locations must be designated on the plan in accordance with the symbol shown in Plate 28-7 or 29-7. Each RF-1 location must be dimensioned from edge-of-pavement to face-of-pole. Each RF-1 location must be labeled as to luminaire size, bracket length and mounting height as follows: RF-1-luminaire size-bracket length(mounting height), e.g., RF-1-145-12(35) refers to a 145 watt luminaire with a 12-foot bracket length at a mounting height of 35 feet.

B. Standard roadway fixture for use on curb-and-gutter roadways (Plate 29-7). The RF-2 locations must be designated on the plan with the symbol shown in Plate 29-7. Each RF-2 location must be labeled as to luminaire size, bracket length and mounting height as follows: RF-2-luminaire size-bracket length(mounting height), e.g., RF-2-71-10(35) refers to a 71 watt luminaire with a 10-foot bracket length at a mounting height of 35 feet.

C. Standard colonial style roadway lighting fixture (Plate 30-7). The RF-3 locations must be designated on the plan in accordance with the symbol shown in Plate 30-7. Each RF-3 location must be labeled as to luminaire size as follows: RF-3-luminaire size, e.g., RF-3-72 refers to a 72 watt luminaire.

D. Special Expressway lighting fixture (Plate 29A-7). The EX-1 and EX-2 locations must be designated on the plan in accordance with the symbol shown
in **Plate 29A-7.** Each EX-1 and EX-2 location must be labeled as to luminaire size, bracket length, mounting height and tilt as follows: EX-1-luminaire size-bracket length(mounting height)(tilt), e.g., EX-1-145-1(35)(0) refers to a 145 watt luminaire with a 1-foot bracket length at a mounting height of 35 feet with a tilt of zero.

E. All RF-1, RF-2, RF-3, EX-1, and EX-2 street lights must be plotted accurately to scale on the plans with respect to pole location and, where applicable, bracket length.

7-0804.7 For design examples, see **Plates 23-7 through 27-7.**

<table>
<thead>
<tr>
<th>Table 7.5 Area Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential</strong> – All land uses as described in Article 3 of the <a href="#">Zoning Ordinance</a>.</td>
</tr>
<tr>
<td><strong>Commercial Industrial</strong> – All land uses as described in Articles 4 and 5 of the <a href="#">Zoning Ordinance</a>.</td>
</tr>
<tr>
<td><strong>Planned Development</strong> – All land uses as described in Article 6 of the <a href="#">Zoning Ordinance</a>.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 7.6 Road Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local</strong> – Roadways used primarily for direct access to residential, commercial, or industrial or other abutting property. These roadways do not carry through traffic.</td>
</tr>
<tr>
<td><strong>Collector</strong> – Roadways used for serving through traffic between arterial and local roadways. These roadways are used mainly for traffic movement within residential, commercial and industrial areas.</td>
</tr>
<tr>
<td><strong>Arterial</strong> – Roadways used as a principal network for through traffic flow. These roadways connect areas of principal traffic generation and important rural highways entering population centers such as cities.</td>
</tr>
</tbody>
</table>
### Table 7.7 Lighting Levels For Proposed and Existing Streets: Standard Roadway Fixture (RF-1 and RF-2)(Light Emitting Diode)

<table>
<thead>
<tr>
<th>Area Classification</th>
<th>Roadway Section Type</th>
<th>Roadway Width ft.</th>
<th>Luminaire Size Watts</th>
<th>Maximum Spacing ft.</th>
<th>Mounting Height ft.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Curb &amp; Gutter</td>
<td>30</td>
<td>54</td>
<td>175</td>
<td>30</td>
<td>1,3,4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36</td>
<td>54</td>
<td>165</td>
<td>30</td>
<td>1,3,4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>44</td>
<td>71</td>
<td>200</td>
<td>35</td>
<td>1,3,4</td>
</tr>
<tr>
<td></td>
<td>Ditch</td>
<td>24</td>
<td>37</td>
<td>170</td>
<td>25</td>
<td>1,3,4</td>
</tr>
<tr>
<td></td>
<td>Section</td>
<td>36</td>
<td>54</td>
<td>165</td>
<td>30</td>
<td>1,3,4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>48</td>
<td>71</td>
<td>200</td>
<td>35</td>
<td>1,3,4</td>
</tr>
<tr>
<td>Industrial/Commercial</td>
<td>Curb &amp; Gutter</td>
<td>30</td>
<td>105</td>
<td>220</td>
<td>35</td>
<td>1,3,4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36</td>
<td>105</td>
<td>215</td>
<td>35</td>
<td>1,3,4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>44</td>
<td>145</td>
<td>220</td>
<td>35</td>
<td>2,3,4</td>
</tr>
<tr>
<td></td>
<td>Ditch</td>
<td>24</td>
<td>105</td>
<td>220</td>
<td>35</td>
<td>1,3,4</td>
</tr>
<tr>
<td></td>
<td>Section</td>
<td>36</td>
<td>105</td>
<td>215</td>
<td>35</td>
<td>1,3,4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>48</td>
<td>145</td>
<td>220</td>
<td>35</td>
<td>1,3,4</td>
</tr>
</tbody>
</table>

**NOTES:**

1/ All luminaires to be installed on one side of the roadway.

2/ Luminaires are to be set symmetrically on both sides of the roadway. When the development only fronts one side of the road, street lights only need to be provided on that side at the spacing specified.

3/ Luminaires bracket lengths are to be sized as to provide a 2-ft. roadway overhang. The maximum bracket length for standard concrete poles is 12 ft. Longer brackets, up to 20 ft. (in 2-ft. increments), are available for wood poles (down guiding is required) and for special concrete poles. Pole locations are to be determined based on current VDOT Road Design Manual, Section A-2-Clear Zone Guidelines.

4/ Unless otherwise approved by the Director, the light source must have a Correlated Color Temperature (CCT) of 3,000 Kelvin, or lower where approved, and a Type III Distribution.
Table 7.8 Lighting Levels For Proposed Curb & Gutter Streets: Alternate Security Fixtures (RF-3)(Light Emitting Diode)

<table>
<thead>
<tr>
<th>Area Classification</th>
<th>Roadway Classification</th>
<th>Luminaire Size Watts</th>
<th>Maximum Spacing ft.</th>
<th>Mounting Height ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential, Single Family Detached</td>
<td>Local</td>
<td>72</td>
<td>160</td>
<td>14</td>
</tr>
</tbody>
</table>

NOTES:
Poles to be placed on one side of the roadway.
Unless otherwise approved by the Director, the light source must have a Correlated Color Temperature (CCT) of 3,000 Kelvin, or lower where approved, and a Type III Distribution.

Table 7.9 Quick Street Light Requirement Selection

<table>
<thead>
<tr>
<th>Plan Classification</th>
<th>Three Street Lights at All Entrances</th>
<th>Street Lights along all Interior Roadways</th>
<th>Street Lights Along All Abutting Roadways</th>
<th>Street Lights Required at Private Roadways</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Plan</td>
<td>N/A</td>
<td>N/A</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subdivision Plans</th>
<th>Average Lot Size is 18,000 ft² or Greater</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Lot Size is Less Than 18,000 ft²</td>
<td>YES</td>
<td>YES</td>
<td>N/A</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>Industrial or Commercial</td>
<td>YES</td>
<td>YES</td>
<td>N/A</td>
<td>NO</td>
</tr>
</tbody>
</table>

| Public Improvements Plans | N/A | YES | YES | NO |

7-0805  Nonstandard Street Lighting

7-0805.1  It is the County’s objective to provide for the implementation of a safe, effective, and economical street lighting system. To this end, standard fixtures, lighting intensities, and implementation criteria are specified in § 7-0801 through § 7-0804. However, nonstandard street lighting systems may be approved to satisfy the requirements of § 7-0800 et seq., if the resulting lighting levels meet or exceed those specified for the area under consideration. In addition, the nonstandard street lighting system must meet the general County goals of crime deterrence, increased pedestrian safety, and reduced hazardous driving conditions. Any proposed street light system that does not conform to the requirements of § 7-0801 through § 7-0804 is considered nonstandard. This may include any deviation from standard

2018 PFM Page 7-50
fixtures, poles, brackets, illumination intensities, light sources and lighting layout required in § 7-0800 et seq. However, minor adjustments of standard pole locations to accommodate lot lines or unusual physical topographical features of the site are allowable and will not cause a lighting system to be considered nonstandard.

7-0805.2 The procedure to obtain approval of a nonstandard street light system will be as follows:

A. The developer must submit to DPWES a written request to use a nonstandard street light system. This request will include a description of the nonstandard street light system components and lighting layout, and lighting computations as per § 7-0805.5B. Schematic drawings or pictures of the nonstandard street light components, manufacturer’s specifications, and photometric data must also be submitted.

B. After reviewing the information submitted, DPWES will provide a recommendation on the acceptance, modification, or rejection of the proposed nonstandard street light system.

7-0805.3 All nonstandard street light systems must comply with VDOT requirements for street lights, including clear zone consideration.

7-0805.4 If a nonstandard street light system is proposed for a planned development made up of more than one section, then an overall nonstandard street lighting layout for the entire development must be submitted to DPWES before approval of any section of the development.

7-0805.5 The following conditions must be met before a final approval of a nonstandard street light system:

A. The existing and/or proposed nonstandard street light system must include all areas where street lighting is specified in accordance with § 7-0800 et seq.

B. Lighting computations for the proposed nonstandard lighting system must be provided by the developer to DPWES. These computations must show that the proposed nonstandard lighting system meets the ANSI/IES RP-8-18 or latest version, and that it conforms to the guidelines of the International Dark-Sky Association (IDA) concerning glare and light trespass. These computations must be sealed by a Lighting Certified professional by the National Council on Qualifications for the Lighting Professional (NCQLP), or by a State licensed professional engineer.
C. The developer must, as a condition of the approval of the nonstandard street light system, enter into an agreement with the County for the perpetual maintenance and operation of the lighting system. This agreement must be recorded in the land records of the County and must run with the title of the land. The agreement will stipulate the following:

1. The arrangements for and all costs associated with perpetual operation and maintenance of the nonstandard street light system must be the responsibility of and at the sole expense of the property owner(s). The County will not be obligated to bear any of the cost to operate or maintain the nonstandard street light system.

2. The nonstandard street light system will be replaced with standard street lights, as specified in § 7-0800 et seq., at the option of the County, if this system is not properly operated or maintained in the future. Such a street light replacement must be at the sole expense of the property owner(s).

3. The County will not be obligated to install, remove or replace or to pay for the installation, removal or replacement of nonstandard street lights.
7-0900.1 See Plates 31-7 and 32-7 for utility locations for water, gas, sewer and utility poles. See Plate 33-7 for mail box locations. See Plate 34-7 for road edge delineator locations.