

# **DESIGN & CONSTRUCTION STANDARDS**

**Landscaping • Screening • Buffering**



**STAFFORD COUNTY, VIRGINIA**

**Adopted May 21, 2019**

**Design and Construction Standards for Landscaping,  
Buffering and Screening (DCSL)  
Stafford County, Virginia**

**SECTION 100**

**DESIGN AND CONSTRUCTION STANDARDS**

# **Part 1**

# **Design Standards**

## TABLE OF CONTENTS

PART 1	DESIGN STANDARDS	
101.0	GENERAL	1
101.1	PURPOSE	1
101.2	EFFECTIVE DATE	1
101.3	AMENDMENTS	2
101.4	ADMINISTRATIONS	2
101.5	WAIVERS AND DEPARTURES	2
101.6	FEES	2
101.7	APPEALS OF DIRECTORS DECISION	2
101.8	CRIMINAL PENALTIES –EMERGENCY ORDERS	3
102	APPLICABILITY	3
110.0	BUFFER YARDS	5
110.1	STREET BUFFERS ADJACENT TO FREEWAYS/INTERSTATES	6
110.2	STREET BUFFERS ADJACENT TO ARTERIAL AND COLLECTOR STREETS	7
110.3	TRANSITIONAL BUFFERS	7
TABLE 1.0	TRANSITIONAL BUFFER	8
TABLE 2.0	TRANSITIONAL BUFFERS MATRIX	9
120.0	LANDSCAPING	11
120.1	PARKING LOT, INTERIOR	11
120.2	PARKING LOT, PERIMETER	14
120.3	PARKING LOT, VEHICLE ACCESS DRIVE	15
120.4	STREET TREES	16
130.0	SCREENING	19
140.0	CREDITS	21
141.0	SUBSTITUTION	22
142.0	ALTERNATIVE COMPLIANCE	22
143.0	DEPARTURE FROM DESIGN STANDARDS	23
PART 2	CONSTRUCTION STANDARDS	
150.0	PURPOSE	25
151.0	INSTALLATION AND MAINTENANCE CRITERIA	25
152.0	PLANT TYPE, SIZE AND CHARACTERISTICS	25
153.0	REQUIRED LANDSCAPE NOTES	26
154.0	SAMPLE PLANTING SCHEDULES	29
200.0	DEFINITIONS	39
300.0	REFERENCES	42

## **Section 101.0 General**

This document as referenced in the Code of the County of Stafford, Virginia, Chapter 28, may also be known as the “DCSL” or simply the “landscape manual”.

### **Section 101.1 Purpose**

- (a) This manual, fully named THE DESIGN AND CONSTRUCTION STANDARDS FOR LANDSCAPING, BUFFERING AND SCREENING, STAFFORD COUNTY, VIRGINIA, has been developed and designed to assist the public in knowing the policies and regulations which apply to land development in Stafford County (County). The provisions contained herein relate primarily to the requirements which apply to the review and approval of development plans and plats, and construction in accordance with those plans.
- (b) This documents effectuates or supplements requirements of the following:
  - 1. Zoning Ordinance
  - 2. Subdivision Ordinance
  - 3. Standardized Landscape Specifications for the Commonwealth of Virginia
  - 4. Code of the Commonwealth of Virginia
  - 5. Virginia Uniform Statewide Basic Building Code
  - 6. Chesapeake Bay Preservation Area Designation and Management Regulations VR-173-02-01
  - 7. Virginia Department of Transportation Standards and Specification
- (c) The laws and ordinance in Section 101.1(b) shall take precedence in the event of conflict between them and this manual.
- (d) This manual is adopted by reference and shall have the force and effect of law. In the event any part or provision of this manual is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions of this manual, which shall remain effective.
- (e) The standards and specifications contained herein are the minimum acceptable standards. The use of native species and xeriscaping practices are encouraged. The use of invasive species shall not be permitted. The Director of Planning and Zoning may, in certain circumstances, require higher standards if it is deemed necessary for the insurance of health, safety, and welfare of the citizens of the County.

### **Section 101.2 Effective Date**

The original effective date of this document was January 12, 2006 per Ordinance O05-33 adopted by the Board of Supervisors.

The document was last amended per Ordinances O06-64 and O06-65 on the 19<sup>th</sup> day of September, 2006.

**Section 101.3 Amendments**

- (a) The Board of Supervisors shall amend this document which shall be effective from the date of approval.
- (b) The provisions of this document are adopted as policies of the Board of Supervisors.

**Section 101.4 Administration**

- (a) The provisions of this document shall be administered jointly and cooperatively by the Department of Planning and Zoning, and the Department of Public Works.
- (b) Generally, the Department of Planning and Zoning shall be responsible for the formal approval. The bonding and security processes shall be the responsibility of the Department of Public Works.
- (c) The Department of Planning and Zoning shall be responsible for site inspection and related enforcement of regulations found in the manual.

**Section 101.5 Waivers and Departures**

- (a) The provisions of this document shall be required unless specifically waived, where applicable, by either the Agent or the Planning Commission, according to their respective areas of administration, as cited in this document. Waiver and Departure requests for fees, monetary contributions, escrows, and extensions of plan approval validity shall not be considered.
- (b) In considering and acting upon waivers and departures and in consideration of the public health, safety, and welfare, the County may prescribe appropriate conditions and safeguards to further express the intent of this manual.
- (c) Waivers and Departures shall be part of the official record of the submission by an application with the appropriate fees.

**Section 101.6 Fees**

The application fees for review of plats, plans, waivers, departures or other necessary documents, are established by the Board of Supervisors by resolution.

**Section 101.7 Appeals of Agent's Decision**

The decision of the Agent is final. If the Agent disapproves any plan submitted pursuant to all processing requirements identified in the section, and the applicant of such plan contends that such disapprovals were not properly based on applicable state and local ordinances and policies, (s)he may

appeal to the Board of Supervisors. Such appeal must be filed with the Board of Supervisors within ten (10) days of the written disapproval by the Agent.

**Section 101.8 Criminal Penalties – Emergency Orders:**

**Refer to Article XVII, Enforcement, of the Zoning Ordinance**

**Section 102.0 Applicability**

Buffer areas, basic landscaping, tree cover requirements and screening shall be provided for all major developments except for any development within the boundaries of a public airport, where required by the Zoning Ordinance and in accordance with this document.

**Section 103.0 – 109.0 Reserved**

# Buffer Yards



## Section 110.0 Buffer Yards

All major development may be subject to Sections 110.1, 110.2, and 110.3 of this document. Sections 110.1, 110.2, and 110.3 will determine the location, width and plant units for each buffer yard. Paragraphs (a) through (j) are applicable to all buffer yards.

### a. Plant Units

Large Trees = 10 p.u. each

Understory Trees = 7 p.u. each

Large Shrubs ( $\geq$  3-feet in height) = 3 p.u. each

Small Shrubs ( $<$  3-feet in height) = 1 p.u. each

Ornamental Grasses = 1 p.u. each

- b. Plantings must be a mix of plant unit types as follows: (50) percent of the p.u. shall be large trees; (30) percent of the p.u. shall be understory trees; (10) percent of the p.u. shall be large shrubs; and (10) percent of the p.u. shall be small shrubs and/or ornamental grasses.
- c. When calculating number of individuals, the results shall be rounded up.
- d. A minimum of 25 percent of the total number of shrubs shall be evergreen shrubs.
- e. A minimum of 20 percent of the total number of large trees must be large size evergreen trees, and a minimum of 20 percent of the total number of understory trees must be understory size evergreen trees.
- f. Sections 110.1 and 110.3: Maintenance within these buffers shall be the minimum necessary to retain a healthy natural appearance of native vegetation with a natural ground cover.
- g. Section 110.2: Maintenance within this buffer type shall be the minimum necessary to retain healthy vegetation; shall include regular pruning/shaping of the vegetation to maintain healthy growth and desired appearance; shall maintain required vegetation heights; and can include regular weeding/mulching to promote a sculptured appearance.
- h. If a 5 foot berm, 8 foot solid freestanding wall or noise abatement wall is located within the buffer yard, plant units and buffer yard width shall be reduced by 50%. The berm or wall shall be located nearest to the right-of-way.
- i. If a 3 foot berm or 3 foot solid freestanding wall similar to the material of the primary building is located within the buffer yard, the width of the buffer yard shall be reduced by 25%.
- j. For Section 110.3, Transitional Buffers. If a six (6) foot tall privacy/opaque fence is located within the buffer yard, plant units and buffer yard width shall be reduced by 50%. The fence should be located nearest to the abutting property.

### **Section 110.1 Street Buffers adjacent to Freeways/Interstates**

The following are buffer requirements for all development adjacent to roads designated by VDOT as a freeway/interstate. Access to this road is strongly restricted.

- a. A buffer yard as required shall be provided along the entire frontage along the road designated as a freeway/interstate.
  - b. When planting is required, evergreens shall not be placed within 40 feet from the edge of the right-of-way.
  - c. A noise impact study shall be conducted and submitted with the application to Stafford County and VDOT for all residential development adjacent to a freeway/interstate to determine if noise abatement walls shall be required. VDOT State Noise Abatement Policy, effective January 1, 1997 as amended, shall be applicable. The U.S. Code of Federal Regulations part 772(23 CFR 772) will be the guiding document for the analysis and abatement of highway traffic noise.
  - d. If a noise abatement wall is required, it shall be the responsibility of the developer/development to coordinate the location, design, construction and maintenance of the wall with VDOT officials. This includes providing funds that VDOT may not receive as a result of the funding programs described in the U.S. Code of Federal Regulations part 772 (23 CFR 772).
  - e. The wall shall be shown on the approved preliminary subdivision or construction plan with a note stating at what phase the wall will be constructed. The plan shall show any construction easements that may be required to construct the wall.
  - f. If the noise abatement wall is required and is not eligible for funding per the U.S. Code of Federal Regulations part 772 (23 CFR 772), then alternative means to best satisfy the results of the study must be approved via a Departure from Design Standards.
- (1) **Major Residential Subdivisions**
- a. The buffer yard width is 100' with 325 Plant units per every 100 linear feet.
- (2) **Non-residential Development**
- a. The buffer yard width is 60 feet with 132 Plant units per every 100 linear feet.

## **Section 110.2 Street Buffers adjacent to Arterial or Collector streets**

The following are buffer requirements for all development adjacent to roads designated by VDOT as arterial streets or collector streets.

### **(1) Major Residential Subdivisions**

- (a) The planting area shall be 25 feet wide with 75 Plant units per every 100 linear feet and shall be exclusive of all parallel easements.
- (b) Per Section 22-153 of the Subdivision Ordinance, the buffer yard shall be an open space parcel, except A-1 and A-2 zoning districts. This open space parcel will be under the ownership of the homeowners association for that subdivision and used exclusively for the purpose of providing the required buffer yard.
- (c) Plantings shall not be located in an area that may create a visual obstruction along the street or within the area determined to be the line of sight for any intersection, drive aisles and parking aisles unless such vegetation is maintained so not to be located within the clear zone, which is the area located from 3 feet to 10 feet above the ground. All vegetation shall be maintained regularly to maintain a clear line of sight and to remove any branches/limbs greater than 3 feet in height and less than 10 feet in height. This may be accomplished by selecting the proper plants based on size at maturity and regular pruning maintenance.

### **(2) Non-residential Development**

- (a) The buffer yard shall be 15 feet wide with 50 Plant units per every 100 net linear feet and is exclusive of all parallel easements.
- (b) Plantings shall not be located in an area that may create a visual obstruction along the street or within the area determined to be the line of sight for any intersection, drive aisles and parking aisles unless such vegetation is maintained so not to be located within the clear zone, which is the area located from 3 feet to 10 feet above the ground. All vegetation shall be maintained regularly to maintain a clear line of sight and to remove any branches/limbs greater than 3 feet in height and less than 10 feet in height. This may be accomplished by selecting the proper plants based on size at maturity and regular pruning maintenance.

## **Section 110.3 Transitional Buffers**

A transitional buffer may be required if the use of an adjacent property is different than the proposed development. See Table 1 to determine if a transitional buffer will be required. The transitional buffer shall be required along the entire length of the property line abutting the use that impacts the development. If a specific use is not listed, the Zoning Administrator shall determine the category in which the unlisted use will be categorized.

- (a) Per Section 22-153 of the Subdivision Ordinance, the transitional buffer on residential zoned properties, except A-1 and A-2, shall be an open space parcel. The open space parcel shall be owned and maintained by an HOA for the subdivision.

- (b) If the developing property with a residential use is adjacent to a vacant residential or agriculture zoned property or property proposed to be a residential use according to an approved General Development Plan (GDP), the developing property shall not be required to provide a transitional buffer.
- (c) If the developing property with a non-residential use is adjacent to a residential property, vacant property zoned residential or agricultural, or property proposed to be a residential use according to an approved GDP, the developing property shall provide 100% of the required buffer for the highest intense residential use on Table 2 permitted on the adjacent property. If a hardship is encountered that is not self-imposed, the developing property has the option to provide screening as outlined in Section 130 (1), pending approval by the agent.
- (d) If the developing property with a residential use is adjacent to a vacant property zoned non-residential or proposed to be a non-residential use according to an approved GDP, the developing property shall provide 100% of the required buffer for the highest intense use permitted on the adjacent property zoning district.
- (e) If the developing property with a non-residential use is adjacent to a vacant property zoned non-residential or property proposed to be a non-residential use according to an approved GDP or Conditional Use Permit (CUP), the developing property shall not be required to provide a transitional buffer.
- (f) Development of property zoned PD-2 (Planned development-2) shall be exempt from complying with Table 1.0, Transitional Buffer matrix.

**Table 1.0 Transitional Buffer**

**TB-A** – 20’ wide with 65 plant units per every 100 linear feet

**TB-B** – 35’ wide with 115 plant units per every 100 linear feet

**TB-C** – 50’ wide with 162 plant units per every 100 linear feet

TABLE 2 TRANSITIONAL BUFFERS MATRIX												
PROPOSED USE	ADJACENT USE											
	1	2	3	4	5	6*	7	8	9	10	11	12
<i>Residential Uses</i>												
1. ACTIVE AGRICULTURE		A	A	B	B	B	B	C	C	C	C	C
2. SINGLE FAMILY DETACHED	A		A	B	B	B	B	C	C	C	C	C
3. SF Attached/Multifamily	A	A		A	B	B	B	B	C	C	C	C
4. DESIGNATED HISTORIC SITES - includes bed & breakfast	B	B	A		A	B	B	B	C	C	C	C
<i>Public / Quasi Public</i>												
5. Active Recreation Facilities. Include outdoor recreational enterprises & community center	B	B	B	A		A	A	B	B	B	C	C
6. PUBLIC FACILITIES - treatment plants, fire/rescue stations, railroads*	B	B	B	B	A		A	B	B	B	C	C
7. INSTITUTIONAL- Schools, places of worship, day care facilities.	B	B	B	B	A	A		A	B	B	B	C
<i>Non-Residential Uses</i>												
8. CARE FACILITIES - Retirement housing, nursing/convalescent homes, assisted care, hospitals, emergency fac., Animal Hospital, veterinarian office, kennels	C	C	B	B	B	B	A		A	B	B	C
9. COMMERCIAL/OFFICE/RETAIL - includes hotels, motels, banks, restaurants, drive thru's, theaters, club/lodge/fraternal organizations, indoor recreational enterprises, contractors business without outside storage, funeral homes	C	C	C	C	B	B	B	A		A	B	C
10. AUTO SALES, REPAIR & SERVICE - includes vehicle fuel sales (gas station), Car Wash (not truck wash) & vehicle rentals	C	C	C	C	B	B	B	B	A		A	B
11. LIGHT INDUSTRIAL/MANU - includes mini-storage, wholesale business, contractor business with outside storage, printing/publishing/engraving, research facilities	C	C	C	C	C	C	B	B	B	A		A
12. HEAVY INDUSTRIAL - Manufacturing, processing- includes Auto Salvage, Junk & Graveyards, recycling, truck/freight terminal, truck wash	C	C	C	C	C	C	C	C	C	B	A	
<b>*Excludes correction facilities</b>												

Ord. No. O06-64, 9-19-06

# Landscaping

## Section 120.0 Landscaping

All development may be subject to Sections 120.1, 120.2, 120.3 and 120.4 of this document. The sections will determine the location, width and plant units for each planting area to provide landscaping. Paragraphs (a) through (b) are applicable to all planting areas.

- (a) Plant Units
  - Large Trees = 10 p.u. each
  - Understory Trees = 7 p.u. each
  - Large Shrubs ( $\geq$  3-feet in height) = 3 p.u. each
  - Small Shrubs ( $<$  3-feet in height) = 1 p.u. each
  - Ornamental Grasses = 1 p.u. each
- (b) When the planting area abuts a street or property line, it shall be provided within twenty-five (25) feet from the street or property line
- (c) A minimum of 20 percent of the total number of shrubs and understory trees must be evergreen. Street trees required for major residential subdivisions shall be exempt from this requirement.
- (d) Maintenance shall be the minimum necessary to retain healthy vegetation; shall include regular pruning/shaping of the vegetation to maintain healthy growth and desired appearance; shall maintain required vegetation heights; and can include regular weeding/mulching to promote a sculptured appearance.

## Section 120.1 Parking Lots, Interior

- (a) Any surface parking lot containing twenty-four (24) or more spaces shall provide planting areas within the boundaries of the parking lot.
- (b) The parking lot shall consist of the entire paved parking and vehicular circulation area, including all parking spaces and drive isles. It shall not include any area associated with loading spaces unless the loading spaces are within the parking lot.
- (c) A minimum of five (5) percent of the parking lot shall be landscaped with trees and/or shrubs and/or ornamental grasses.
- (d) 12 Plant Units for every 150 square feet of planting area shall be required, and shall include a minimum of one (1) tree.
- (e) Landscape islands (planting area) shall be no smaller than 150 square feet (exclusive of curbing) for single row parking bays, and no smaller than 300 square feet for double row parking bays.
- (f) Landscape islands shall be placed at the end of all parking bays.

- (g) For single row parking bays, there shall be no more than 16 parking spaces permitted between landscape islands. Where double row parking bays are provided, there shall be no more than 32 parking spaces permitted between landscape islands.
- (h) If the placement for such landscape islands results in planting areas greater than the minimum five (5) percent required, the higher percentage shall apply.
- (i) Plantings shall not cause an obstruction of view along the street or within any area determined to be the line of sight for any intersection, drive aisles and parking aisles unless such vegetation is maintained so not to be located in a clear zone which is greater than 3 feet in height and less than 10 feet in height. All vegetation shall be maintained regularly to allow for a line of sight and to remove any branches/limbs greater than 3-feet in height and less than 10-feet in height. This can be accomplished by selecting the proper plant based on size at maturity and regular pruning maintenance.
- (j) Parking spaces located within a building or structure (parking garage) shall not be subject to these requirements.
- (k) Integrated Management Practices (IMP). When all or a portion of the Planting Area within the parking area is used for (IMP), the following steps shall be used to determine the landscaping requirements for the planting area that is not utilizing IMP.
  - (1) Determine the required square footage of planting area per Section 120.1(c).
  - (2) Determine the square footage of planting area utilizing IMP.
  - (3) Subtract Paragraph (2) from (1).
  - (4) Provide the balance square footage of planting area required and provide landscaping in accordance with 120.1(d) above for the remaining balance only.
  - (5) All planting areas utilizing IMP shall be exempt from 120.1(d) above. Landscaping provided in IMP areas are required components of these storm water features which are administered and regulated by the Department of Environmental Quality. Such landscaping shall not count towards the plant unit requirements for paragraph (4) above.



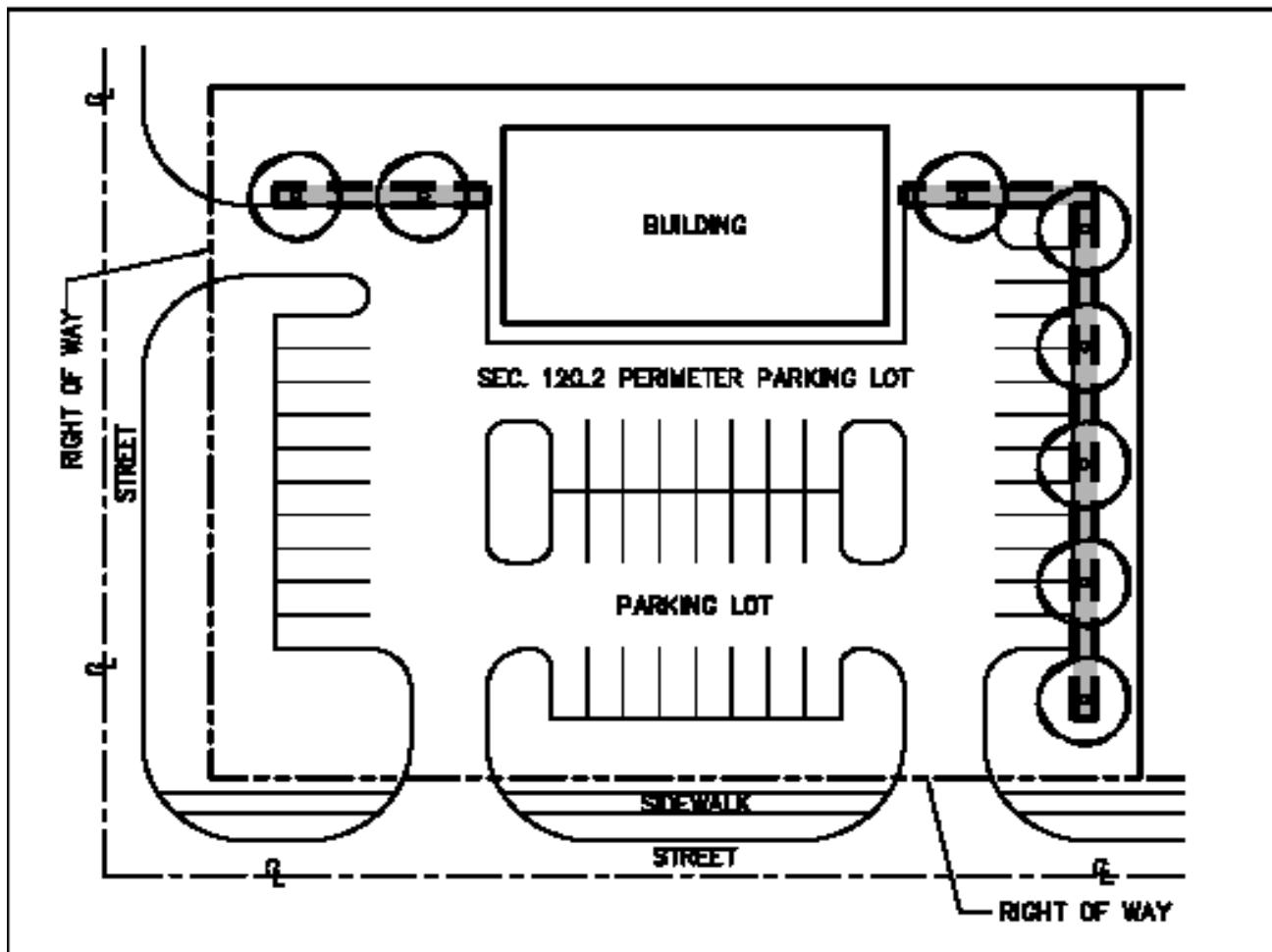


**Section 120.2 Parking Lot, Perimeter**

A planting area shall be provided along the perimeter of all parking lots.

- (a) If the planting area between the parking lot and the property line is subject to Section 110.3 Buffer Yards and/or 120.4 Landscaping, Street Trees of this document, this section shall not apply.
- (b) The planting area shall be 5 feet wide with 35 Plant Units per every 100 net linear feet of the perimeter of the parking lot.
- (c) If any portion of the planting area is utilizing IMP, that portion shall be exempt from this requirement.

**Example of Area of Parking Lot Perimeter**

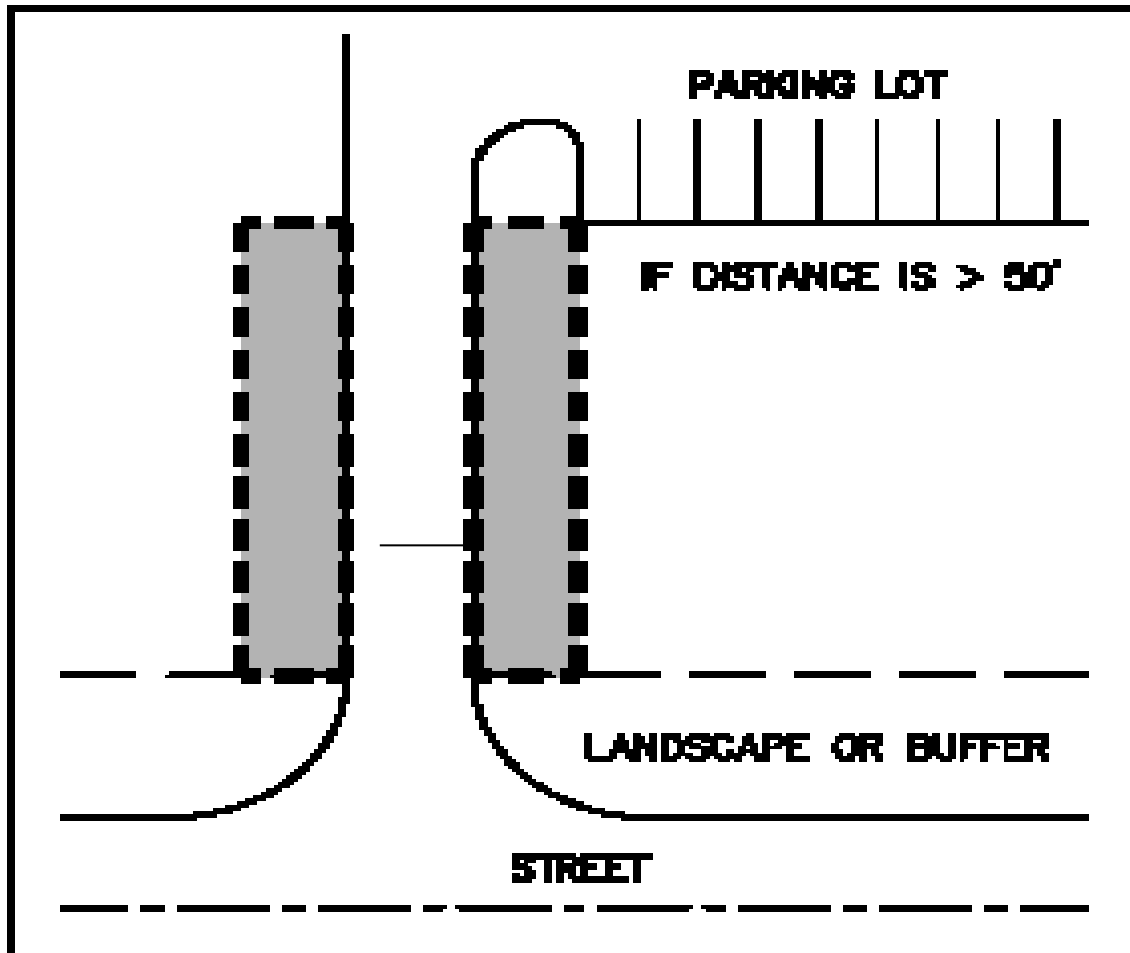


**Section 120.3 Parking Lot, Vehicle Access Drive**

A planting area shall be provided on both sides of a vehicular access drive that is not a public street, between a required landscape or buffer yard and the parking lot, if the distance of the vehicular access drive exceeds fifty (50) feet.

- (a) If the planting area between the vehicle access drive and the property line is subject to Section 110.3 Transitional Buffers of this document, this section shall not apply.
- (b) The planting area shall be 5 feet wide with 35 Plant Units per every 100 net linear feet of vehicle access drive.
- (c) If any portion of the planting area is utilizing IMP , that portion shall be exempt from this requirement.

**Example for Vehicle Access Drive Landscape Area**



**Section 120.4 Street Trees****(1) Major Residential Subdivisions: Single Family Detached**

- (a) A planting area shall be provided along the frontage for all streets abutting lots of a major residential subdivision that is not subject to the requirements of Sections 110.1 and 110.2 of this document.
- (b) The planting area shall be 10 feet wide along the street frontage.
- (c) Large trees shall be utilized and spaced a maximum of 100 feet apart. A minimum of one (1) tree shall be provided for every lot. The trees shall not be located within the right-of-way.
- (d) A planting schedule shall be created based on the number of lots and net linear feet of street frontage.
- (e) The curve of the cul-de-sac counts towards the net linear footage of street frontage.

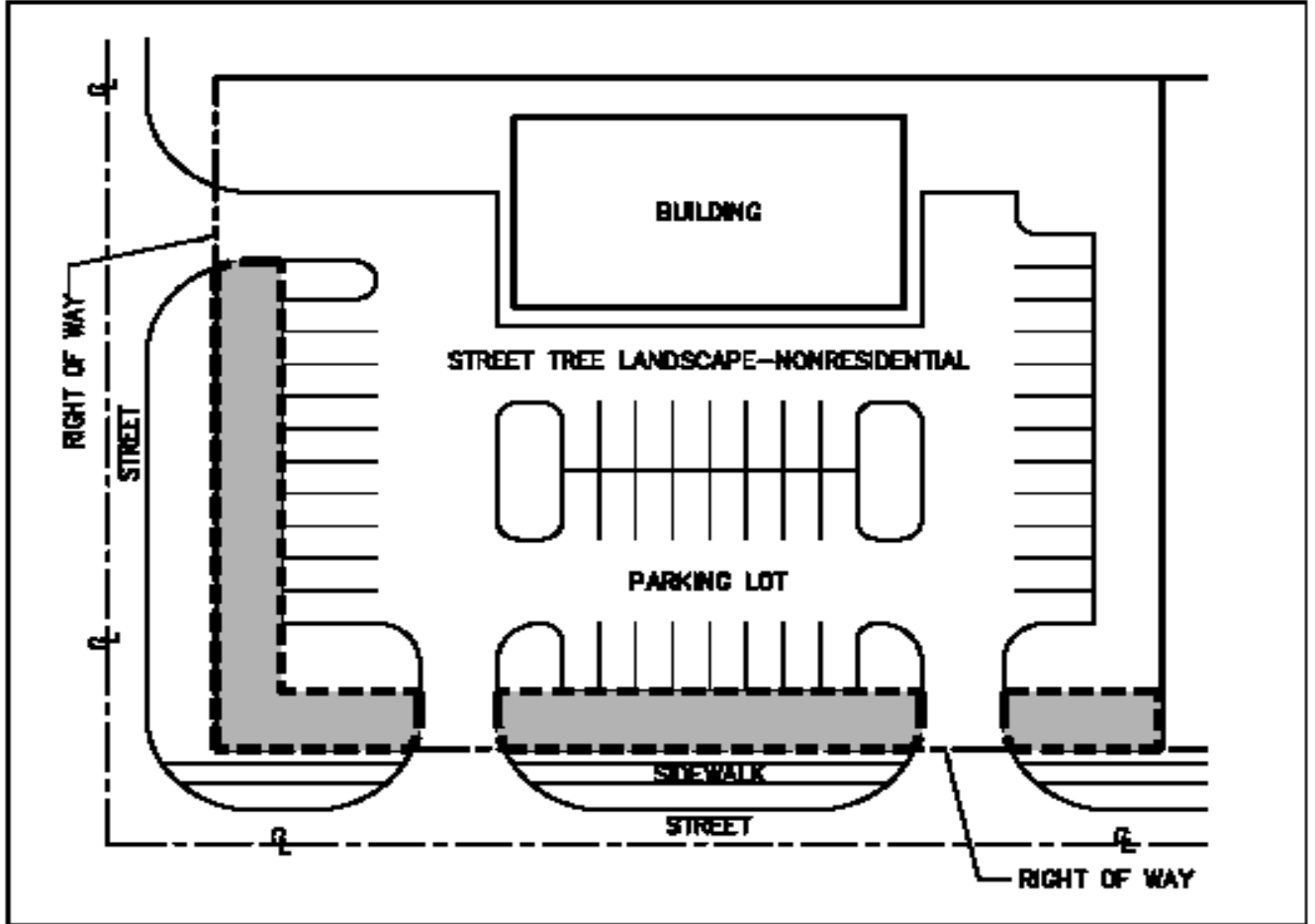
**(2) Major Residential Subdivisions: Single Family Attached/Multi Family**

- (a) A planting area shall be provided along the frontage for all streets abutting lots of a major residential subdivision that is not subject to the requirements of Sections 110.1 and 110.2 of this document.
- (b) The planting area shall be 10 feet wide along the street frontage.
- (c) Understory trees or large trees shall be utilized and spaced a maximum of 100 feet apart. When using understory trees in place of large trees, three (3) small shrubs must accompany the understory tree within the same maximum 100 foot interval. The trees shall not be located within the right-of-way.
- (d) A planting schedule shall be created based on the net linear feet of street frontage.
- (e) The curve of the cul-de-sac counts towards the net linear footage of street frontage.

**(3) Non-residential Development**

- (a) A planting area shall be provided along the frontage for all streets abutting a non-residential development that is not subject to the requirements of Sections 110.1 and 110.2 of this document.
- (b) The distance of street frontage shall not include any area used for vehicular access.
- (c) The landscape requirements shall not be located within a utility easement if the utility easement is not perpendicular to the street. The landscape requirements shall be located outside of the easement.
- (d) The planting area shall be 10 feet wide with 21 Plant Units per every 100 net linear feet of street frontage.

Example of Street Trees Landscaping



Section 121.0 – 129.0 Reserved

# Screening

### **Section 130.0 Screening**

The uses listed in Section 28-88 of the Zoning Ordinance shall be screened from any public street or adjacent properties by one (1) means of screening described below.

If the use to be screened is not the primary business or use on the property and is leased from the property owner, the provisions being provided to screen the use shall be within the lease area and under the responsibility of the lessee and not the property owner.

- (1) Evergreen screen, 15 foot wide strip providing 2 staggered rows of evergreen trees at least 6 feet tall when planted and separated a minimum of 8 feet;
- (2) 8 foot high solid wall;
- (3) 8 foot high board-on-board/sight-tight fence; or
- (4) 5 foot high berm with 20 evergreen trees and 50 shrubs for every 100 linear feet of street frontage.

### **Section 131.0 – 139.0 Reserved**

**Credits**

**Substitution**

**Alternative Compliance**

**Departure from Design  
Standards**



## Section 140.0 Credits

A development may establish credit for existing vegetation provided the area being protected are located within a required planting area and is equal to or greater than the required Design Standards (Part 1) to which the credits will be applied and the amount of plant units is equal to or greater than the amount required.

As part of the development plan review process, a Landscape Credits Request Letter shall be submitted to the Department of Planning and Zoning for review and approval. Site clearing, grading, and removal of existing vegetation as a means to avoid the review process shall be prohibited. In order to be complete, a landscape credits request shall include justification, tabulation, supporting documentation and graphics that may include photo diagrams.

Landscape Credit criteria are as follows:

- (a) Existing vegetation is of sufficient size and density to meet the intent of the document. The applicant shall include with the construction and/or site plan a plant inventory delineating all trees four (4) inches diameter at breast height (DBH) and greater, specify the scientific and common names of species, and the tree save area must provide an acceptable cover of tree stand.
- (b) Plant Units for trees to be saved:
 

(1)	4" – 6" DBH	= 10 Plant Units
(2)	7" – 12" DBH	= 15 Plant Units
(3)	13" – 17" DBH	= 20 Plant Units
(4)	18" – 24" DBH	= 25 Plant Units
(5)	25" DBH +	= 30 Plant Units
- (c) Trees must be structurally sound, healthy, without disease or insect infestation.
- (d) The dripline shall be surveyed and the limits of clearing shall be established ten (10) feet beyond the surveyed dripline to reduce the impacts generated from installation of silt fences and diversion dikes and equipment.
- (e) Buildings shall be located no closer than fifteen (15) feet from the dripline unless waived by the Agent.
- (f) Tree protection areas shall be established prior to clearing. The tree protection area shall be established with orange mesh fencing and clearing shall not exceed that shown on the plan. Any encroachment shall be deemed a violation of the credit approval and the owner/developer shall be required to replant the area and resubmit a plan to the county showing the required planting for the buffer. A letter of request along with a restoration plan shall be submitted to the agent for approval.
- (g) All tree protection devices shall remain in place until the project is completed, inspected and approved by the agent.

- (h) When a portion of a buffer yard shown on the plan does not contain a significant stand of vegetation for preservation and does not meet the required plant units for the area, all attempts must be made to save the existing trees. The applicant must show on the plan the existing trees to be saved and the proposed trees needed to comply with the required plant units. If the buffer yard location has existing trees and they are to be removed, the applicant must submit a letter of request to remove the existing trees with an attached mitigation plan to the Agent addressing deficiencies found in protecting the existing trees.
  
- (i) The planting area and plant unit requirements for Section 120.1, Parking Lot, Interior, of this document shall be reduced by fifty (50) percent if the applicant retains existing vegetation along the perimeter of the parking lot provided the area being saved doubles the amount of plant units and planting areas required for the interior landscape area. If the same tree saved area is subject to other sections of this document, ~~then~~ it must also meet the plant unit and width requirements of that section in order to be used towards the reduction of plant units and planting areas for Section 120.1. If additional trees are required in the tree save area to comply with other sections of this document, it cannot be used to reduce the amount of plant units and planting areas for Section 120.1, Interior parking lot requirements.

### **Section 141.0 Substitution**

The agent may grant the approval of the substitution of plants within a buffer or planting area provided the plants unit requirements remain equal to or greater than the amount required for that buffer or planting area. This does not permit the width of the required buffer or planting area to be reduced.

If the request for substitution is made after an application has been approved, the applicant must submit the request in writing to the agent. The approved response from the agent shall be attached to the approved plan. The request must specify the trees being substituted and provide the reason for the substitution. The request must demonstrate how the substitution meets or exceeds the plant unit requirements for the buffer yard or planting area in which the substitution is being requested.

### **Section 142.0 Alternative Compliance**

The agent may grant a request for an alternative compliance to reduce the width requirements of a buffer or planting area or minimum square footage of planting area requirements of a section or sections of this document, provided the plant units are equal to or greater than the requirements of that section or sections.

The request shall demonstrate other provisions have been made to facilitate the reduction in the required width or square footage for planting areas.

The Alternative Compliance application is granted for the section or sections of this document in conjunction with a development plan, including but not limited to a subdivision, construction or site plan applications.

The request for an alternative compliance shall be submitted to the agent in writing on forms determined by the Department of Planning and Zoning. The letter shall explain the justification for the alternatives being sought and demonstrate how the plan will meet or exceed the minimum number of plant units required for the buffer or planting area.

The Agent shall provide an approval letter granting the alternative compliance and shall be embedded in the plans for which the alternative compliance was granted.

The alternative compliance is granted for a specific section or sections of this document as part of a specific development plan and cannot be used in conjunction with any other section of this document for the same property or another property.

If the application expires, the granting of any alternative compliance associated with the plan shall also expire.

### **Section 143.0 Departure from Design Standards**

If relief from the amount of plant unit requirements for a section or sections of this document is needed, a request for a departure from design standards application shall be required. The departure from design standards shall be approved by the Planning Commission after conducting a public hearing.

- (a) The application and associated fees for Departure from Design Standards shall be submitted to the Department of Planning and Zoning and shall include any required analysis.
- (b) The applicant shall show hardship for the Departure and show any techniques being provided to accommodate the initial requirements to the maximum extent practical.
- (c) If the departure is a result of a denied request for an alternative compliance, the request for the alternative compliance and the response letter from the Agent shall be submitted with the application.
- (d) The decision of the application shall be determined after a public hearing by the Planning Commission is completed.
- (e) An appeal of the decision of the Planning Commission shall be submitted to the Board of Supervisors.

# **Part 2**

# **Construction Standards**

### **Section 150.0 Purpose**

The purpose of this document is to set forth provisions and regulations for construction standards of landscaping, buffering and screening within Stafford County upon new and/or existing development that requires such action.

### **Section 151.0 Installation and Maintenance Criteria**

- (A) All required landscaping shall be installed and maintained in a sound, workmanship-like manner and according to accepted, good planting practices and procedures with the quality of plant materials as described in the most recent edition of the *Standardized Landscape Specifications for the Commonwealth of Virginia* published by the Virginia Nursery and Landscape Association (VNLA), available for reference in the Stafford County Department of Planning and Zoning, unless or in addition to requirements set forth within this document.
1. Except for single-family detached residential uses, a security shall be posted to ensure replacement of plant material based on the guidelines found in the *Standardized Landscape Specifications for the Commonwealth of Virginia - Part 1-1.06*.
  2. Except under certain circumstances that must be approved by the Stafford County Department of Planning and Zoning, and the Department of Public Works, reductions of any landscape securities shall not be granted.

### **Section 152.0 Plant Type, Size and Characteristics**

All required landscaping shall be the type and minimum size set forth in the DCSL. See Section 300.0 References, for acceptable plant species.

- (A) For project sites that are equal to or less than twenty (20) acres, there shall be no more than 15 individuals of any one species of large tree, understory tree, and shrub.
- (B) For project sites greater than twenty (20) acres, the total number of individuals of large trees, understory trees, and shrubs shall each have no more than ten percent (10%) of any one species, no more than twenty percent (20%) of any one genus, and no more than thirty percent (30%) of any one family.
1. Large trees shall have a minimum caliper of three (3) inches and shall be a minimum of twelve (12) feet in height above the highest root at the time of planting.
  2. Evergreen trees shall have a minimum caliper of two (2) inches and shall be a minimum of six (6) feet in height above the highest root at the time of planting.
  3. Understory trees shall be a minimum of six (6) feet in height above the highest root at the time of planting.

4. Large shrubs shall be a minimum of two and one-half (2½) feet in height above the highest root at the time of planting and nursery grown in a minimum five (5) gallon container.
5. Small shrubs and ornamental grasses shall be a minimum of six (6) inches in height above the highest root at the time of planting and nursery grown in a minimum one (1) gallon container.

**Section 153.0 Landscape Notes**

The following landscape notes shall be required and embedded in all landscape plans prior to approval.

- 1) Contractor shall furnish and install all plants as shown on the approved landscape plan, in accordance with the type, sizes, quantities, and specifications listed in the plant schedule.
- 2) Total number of plants shall be drawn on the landscape plan. If the actual total is different from the approved landscape plan, the Contractor shall notify the Owner and/or Owners Representative and approved by The County.
- 3) All plants shall be nursery grown and shall be hardy under climate conditions in the locality of the project.
- 4) Plant dimensions shall be in accordance with the most recent edition of the *Standardized Landscape Specifications for the Commonwealth of Virginia*, which references the American Standard for Nursery Stock (ASNS).
- 5) Balled and burlapped plants shall be dug with firm, natural balls of earth and shall be pruned, stored, and dug in accordance with current ASNS standards. No balled and burlapped plants shall be planted if the ball is either cracked or broken during the process of planting.
- 6) All plants shall have a normal habit of growth and shall be sound, healthy, vigorous, well rooted, and free from disease and insect infestation. Any tree with weak, thin trunks not capable of supporting itself will not be acceptable. The minimum acceptable size of all plants measured before pruning with the branches in normal position shall conform to dimensions as shown on the approved landscape plan. Larger plants of equal quality may be accepted at no additional cost to the Owner.
- 7) Substitution of plants shall not be permitted unless authorized by the Owner and/or Owner's Representative and approved by the County.
- 8) The Contractor shall lay out, with identifiable stakes, the location of all trees, outlines of planting beds, and underground utilities as indicated on the approved landscape plan. In the event that rock, utility lines, or any underground obstructions are encountered during these operations, or in the excavation of any plant pits, alternate locations may be selected by the Owner and/or Owner's Representative and approved by County with no additional cost to the Owner.

- 9) Planting soil shall be \_\_\_\_\_.
- 10) Mulch shall be applied immediately after planting operations. Mulch shall be \_\_\_\_\_, free of debris, weeds, spores or other foreign material, well rotted and of such character as to not be easily removed by the elements.
- 11) Prior to installation, the Contractor shall notify the Owner and/or Owners Representative of all soil or drainage conditions that are detrimental to the growth of plants. The Contractor shall state the conditions and submit a proposal, in writing, correcting the conditions, including any change in cost, for review and acceptance by the Owner.
- 12) A container grown plant shall be defined as a plant transplanted into a container and grown in that container sufficiently long for the new fibrous roots to have developed so that the container mass will retain its shape and hold together when removed from the container. All container grown plants shall be sound, healthy, vigorous, well rooted, free from disease and insect infestation, and established in the container in which they are sold. They shall have tops that are of good quality and are in healthy condition. No root bound container grown plants will be permitted. No container grown plant shall be planted if the root mass is broken either before or during the process of planting.
- 13) All plant pits shall be circular in outline. All excavations shall have vertical sides. The depths and widths for excavation of plant pits shall be the depths and widths as specified in the landscape plan. Loosen subgrade 6" below bottom of the pit. Subgrade soils shall be separated from the upper topsoil portions and removed immediately wherever encountered during planting operations. Excess soils shall be removed and legally disposed.
- 14) In general, set plants at same relation to finished grade as the bore to the ground from which they were dug. Prepare planting pits as specified and as shown on the landscape plan, prior to inserting plants. Use topsoil mixture to backfill approximately 2/3 full. Water thoroughly before installing remainder of the soil to the top of the pit. Set trees plumb and brace rigidly in position until the planting soil has been tamped solidly around the ball and the roots.
- 15) Guying and staking shall be required for all trees in accordance with the landscape plan and must be completed within 24 hours after planting.
- 16) Maintenance of new plants shall consist of pruning, watering, cultivating, weeding, mulching, tightening, and resetting plants to proper grades or upright position. Restoration of the planting saucer and furnishing and applying such sprays are necessary to keep the plant free from disease and insect infestation. Maintenance shall be provided until time of provisional acceptance.
- 17) Plantings and planting areas shall be protected at all times against trespassing and damage of any kind for the duration of the maintenance period. If any plants become damaged, they shall be treated or replaced by the Contractor at no additional cost to the Owner. No work shall be done within, adjacent to, or over any plant or planting area without proper safeguards and protection.

- 18) All plants shall be guaranteed by the Contractor for a period of one year from the date of provisional acceptance. The Contractor shall provide, in writing, specific maintenance recommendations to the Owner for all plants to remain in good, healthy, and flourishing condition.
- 19) For plants that have been properly maintained by the Owner during the one-year guarantee period, the Contractor shall replace, without cost to the Owner, all dead or severely damaged plants as determined by a certified agent. The replacement plants shall be sound, healthy, vigorous, well rooted, free from disease and insect infestation, and shall closely match surrounding plants of the same size and species. Requirements shall be subject to all requirements stated in this specification.
- 20) The guarantee of all replacement plants shall extend for an additional period of one year from the date of their acceptance after replacement. In the event that a replacement is not acceptable during or at the end of the said extended guarantee period, the Owner may elect a substitution or a credit for each item.
- 21) No plants shall impede the sight distance for ingress & egress to the site.
- 22) Performance bond may be required by Stafford County [Ord. 28-86(C)(5)].



## Section 154.0 Sample Planting Schedules

Landscape plans shall include all applicable schedules selected from those shown below to document required and proposed quantities for all items required by this document.

### Sample Schedule for Section 110.1 & 110.2

#### *Street Buffers adjacent to Freeway/Interstate & Arterial/Collector Streets*

(Separate Schedules are required for each type of Street Buffer)

#### Variables:

1. **Residential** or **Non-Residential** (*circle one*)
2. Street Buffer required: **Freeway/Interstate** or **Arterial/Collector** (*circle one*)
3. Linear feet of buffer yard along Freeway/Interstate or Arterial/Collector Street: \_\_\_\_\_ feet
4. Plant units required per Section 110.1 or 110.2: \_\_\_\_\_ p.u. / 100 linear feet
5. Plant units required within entire buffer yard:  $(\#3^* \times \#4^*) / 100 =$  \_\_\_\_\_ p.u.  
5a. Sec. 110.0 h. – Optional plant unit reduction with 5 ft. berm/8 ft wall:  $(\#5 / 2) =$  \_\_\_\_\_ p.u.
6. Existing plant units receiving credit per Sec. 140: \_\_\_\_\_ p.u.
7. **Total Plant Units required in buffer yard: (#5 or #5A) - #6 =** \_\_\_\_\_ **p.u.**
8. Proposed percentage of large evergreen trees (minimum 20%) = \_\_\_\_\_ %
9. Proposed percentage of understory evergreen trees (minimum 20%) = \_\_\_\_\_ %
10. Proposed percentage of evergreen shrubs (minimum 25%) = \_\_\_\_\_ %

#### Calculation of Individuals Required: (*percentages are expressed in decimal format*)

#### Individuals Proposed:

- |   |                                |
|---|--------------------------------|
| A. Large Deciduous Tree: $(1 - \#8^*) \times (0.5 \times \#7^*) =$ _____ p.u.                       | _____ plants x 10 = _____ p.u. |
| B. Large Evergreen Tree: $\#8^* \times (0.5 \times \#7^*) =$ _____ p.u.                             | _____ plants x 10 = _____ p.u. |
| C. Deciduous Understory Tree: $(1 - \#9^*) \times (0.3 \times \#7^*) =$ _____ p.u.                  | _____ plants x 7 = _____ p.u.  |
| D. Evergreen Understory Tree: $\#9^* \times (0.3 \times \#7^*) =$ _____ p.u.                        | _____ plants x 7 = _____ p.u.  |
| E. Deciduous Large Shrub: $(1 - \#10^*) \times (0.1 \times \#7^*) =$ _____ p.u.                     | _____ plants x 3 = _____ p.u.  |
| F. Evergreen Large Shrub: $\#10^* \times (0.1 \times \#7^*) =$ _____ p.u.                           | _____ plants x 3 = _____ p.u.  |
| G. Deciduous Small Shrub/Ornamental Grass: $(1 - \#10^*) \times (0.1 \times \#7^*)$<br>= _____ p.u. | _____ plants = _____ p.u.      |
| H. Evergreen Small Shrub: $\#10^* \times (0.1 \times \#7^*) =$ _____ p.u.                           | _____ plants = _____ p.u.      |
| I. <b>Total Plant Units proposed:</b>   | _____ <b>p.u</b>               |

#### Notes:

- (1) \* Refers to corresponding "Variables" line items.
- (2) Plant unit (p.u.) calculation results shall be rounded up to the next whole number.
- (3) The "Total Plant Units proposed" shown on line item I from the above "Calculation of Individuals Required" shall be equal to or greater than line item #7 from the above "Variables".

### Sample Schedule for Section 110.3

#### *Transitional Buffers*

(Separate Schedules are required for each type of Transitional Buffer)

#### Variables:

1. Proposed Use per Table 2: Number: \_\_\_\_\_ Use: \_\_\_\_\_
2. Adjacent property which requires a Transitional Buffer: **N S E** or **W** (*circle one*)
3. Adjacent property use per Table 2: Number: \_\_\_\_\_ Use: \_\_\_\_\_
4. Transitional Buffer required per Table 2: **A B** or **C** (*circle one*)
5. Linear feet of buffer yard required along property line: \_\_\_\_\_ feet
6. Plant units required: \_\_\_\_\_ p.u. / 100 linear feet.
7. Plant units required within entire buffer yard:  $(\#5^* \times \#6^*) / 100 =$  \_\_\_\_\_ p.u.
  - 7a. Sec. 110.0 h. – Optional plant unit reduction with 5 ft berm/8 ft wall:  $(\#7 / 2) =$  \_\_\_\_\_ p.u.
  - 7b. Sec. 110.0 j. – Optional plant unit reduction with 6 ft fence:  $(\#7 / 2) =$  \_\_\_\_\_ p.u.
8. Existing plant units receiving credit per Sec. 140: \_\_\_\_\_ p.u.
9. **Total Plant Units required in buffer yard: (#7, #7A, or #7B) - #8 = \_\_\_\_\_ p.u.**
10. Proposed percentage of large evergreen trees (minimum 20%) = \_\_\_\_\_ %
11. Proposed percentage of understory evergreen trees (minimum 20%) = \_\_\_\_\_ %
12. Proposed percentage of evergreen shrubs (minimum 25%) = \_\_\_\_\_ %

#### Calculation of Individuals Required: (*percentages are expressed in decimal format*)

#### Individuals Proposed:

- |   |                                |
|---|--------------------------------|
| A. Large Deciduous Tree: $(1 - \#10^*) \times (0.5 \times \#9^*) =$ _____ p.u.                      | _____ plants x 10 = _____ p.u. |
| B. Large Evergreen Tree: $\#10^* \times (0.5 \times \#9^*) =$ _____ p.u.                            | _____ plants x 10 = _____ p.u. |
| C. Deciduous Understory Tree: $(1 - \#11^*) \times (0.3 \times \#9^*) =$ _____ p.u.                 | _____ plants x 7 = _____ p.u.  |
| D. Evergreen Understory Tree: $\#11^* \times (0.3 \times \#9^*) =$ _____ p.u.                       | _____ plants x 7 = _____ p.u.  |
| E. Deciduous Large Shrub: $(1 - \#12^*) \times 0.1 \times \#9^*) =$ _____ p.u.                      | _____ plants x 3 = _____ p.u.  |
| F. Evergreen Large Shrub: $\#12^* \times (0.1 \times \#9^*) =$ _____ p.u.                           | _____ plants x 3 = _____ p.u.  |
| G. Deciduous Small Shrub/Ornamental Grass: $(1 - \#12^*) \times (0.1 \times \#9^*)$<br>= _____ p.u. | _____ plants = _____ p.u.      |
| H. Evergreen Small Shrub: $\#12^* \times (0.1 \times \#9^*) =$ _____ p.u.                           | _____ plants = _____ p.u.      |
| <b>I. Total Plant Units proposed:</b>   | <b>_____ p.u.</b>              |

#### Notes:

- (1) \* Refers to corresponding “Variables” line items.
- (2) Plant unit (p.u.) calculation results shall be rounded up to the next whole number.
- (3) The “Total Plant Units proposed” shown on line item I from the above “Calculation of Individuals Required” shall be equal to or greater than line item #9 from the above “Variables”.

### Sample Schedule for Section 120.1

#### *Parking Lot, Interior*

**Variables:**

1. Total square footage of parking lot: \_\_\_\_\_ sq. feet
2. Minimum planting area required: (#1\* x 0.05) = \_\_\_\_\_ sq. feet
3. Additional square footage required to meet landscape island spacing/placement: \_\_\_\_\_ sq. feet
4. Amount of planting area utilizing IMP: \_\_\_\_\_ sq. feet
5. **Total Planting Area required: (#2 + #3\*) - #4\* = \_\_\_\_\_ sq. feet**
6. **Total Plant Units required: (#5 / 150) x 12 = \_\_\_\_\_ p.u.**
  - 6a. **Total Trees required: (#5 / 150) = \_\_\_\_\_ trees (minimum 1 tree/ 150 sq. ft. planting area)**

**Calculation of Individuals:** *(percentages are expressed in decimal format)*

- A. Number of Proposed Large Deciduous Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- B. Number of Proposed Large Evergreen Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- C. Number of Proposed Understory Trees: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Understory Trees *Required*: (C x 0.8) = \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Understory Trees *Required*: (C x 0.2) = \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
- D. Number of Proposed Large Shrubs: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Large Shrubs *Required*: (D x 0.8) = \_\_\_\_\_ (plants) x 3 = \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Large Shrubs *Required*: (D x 0.2) = \_\_\_\_\_ (plants) x 3 = \_\_\_\_\_ p.u.
- E. Number of Proposed Small Shrubs/Ornamental Grasses: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Small Shrubs/Ornamental Grasses *Required*: (E x 0.8) = \_\_\_\_\_ (plants)  
= \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Small Shrubs *Required*: (E x 0.2) = \_\_\_\_\_ (plants) = \_\_\_\_\_ p.u.
- F. **Total Plant Units proposed: \_\_\_\_\_ p.u.**

**Notes:**

- (1) \* Refers to corresponding "Variables" line items.
- (2) Plant unit (p.u.) calculation results shall be rounded up to the next whole number.
- (3) The "Total Plant Units proposed" shown on line item F from the above "Calculation of Individuals" shall be equal to or greater than line item #6 from the above "Variables".

## Sample Schedule for Section 120.2

### *Parking Lot, Perimeter*

#### Variables:

1. Total linear feet of parking lot perimeter: \_\_\_\_\_ feet
2. Linear feet of parking lot perimeter used for vehicular access: \_\_\_\_\_ feet
3. Linear feet of parking lot perimeter utilizing IMP: \_\_\_\_\_ feet
4. **Net Linear Feet of Parking Lot Perimeter:** (#1\* - #2\*) - #3\* = \_\_\_\_\_ **feet**
5. **Total Plant Units required:** (#4 / 100 ) x 35 = \_\_\_\_\_ **p.u.**

#### Calculation of Individuals: *(percentages are expressed in decimal format)*

- A. Number of Proposed Large Deciduous Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- B. Number of Proposed Large Evergreen Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- C. Number of Proposed Understory Trees: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Understory Trees *Required:* (C x 0.8) = \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Understory Trees *Required:* (C x 0.2) = \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
- D. Number of Proposed Large Shrubs: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Large Shrubs *Required:* (D x 0.8) = \_\_\_\_\_ (plants) x 3 = \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Large Shrubs *Required:* (D x 0.2) = \_\_\_\_\_ (plants) x 3 = \_\_\_\_\_ p.u.
- E. Number of Proposed Small Shrubs/Ornamental Grasses: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Small Shrubs/Ornamental Grasses *Required:* (E x 0.8) = \_\_\_\_\_ (plants)  
= \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Small Shrubs *Required:* (E x 0.2) = \_\_\_\_\_ (plants) = \_\_\_\_\_ p.u.
- F. **Total Plant Units proposed:** \_\_\_\_\_ **p.u.**

#### Notes:

- (1) \* Refers to corresponding "Variables" line items.
- (2) Plant unit (p.u.) calculation results shall be rounded up to the next whole number.
- (3) The "Total Plant Units proposed" shown on line item F from the above "Calculation of Individuals" shall be equal to or greater than line item #5 from the above "Variables".

### Sample Schedule for Section 120.3

#### *Parking Lot, Vehicle Access Drive*

**Variables:**

1. Total linear feet of vehicle access drive between buffer yard and parking lot: \_\_\_\_\_ feet (*both sides*)
2. Linear feet of vehicle access drive utilizing IMP: \_\_\_\_\_ feet
3. **Net Linear Feet of Vehicle Access Drive: (#1\* - #2\*) = \_\_\_\_\_ feet**
4. **Total Plant Units required: (#3 / 100 ) x 35 = \_\_\_\_\_ p.u.**

**Calculation of Individuals:** (*percentages are expressed in decimal format*)

- A. Number of Proposed Large Deciduous Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- B. Number of Proposed Large Evergreen Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- C. Number of Proposed Understory Trees: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Understory Trees *Required*: (C x 0.8) = \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Understory Trees *Required*: (C x 0.2) = \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
- D. Number of Proposed Large Shrubs: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Large Shrubs *Required*: (D x 0.8) = \_\_\_\_\_ (plants) x 3 = \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Large Shrubs *Required*: (D x 0.2) = \_\_\_\_\_ (plants) x 3 = \_\_\_\_\_ p.u.
- E. Number of Proposed Small Shrubs/Ornamental Grasses: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Small Shrubs/Ornamental Grasses *Required*: (E x 0.8) = \_\_\_\_\_ (plants)  
= \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Small Shrubs *Required*: (E x 0.2) = \_\_\_\_\_ (plants) = \_\_\_\_\_ p.u.
- F. **Total Plant Units proposed: \_\_\_\_\_ p.u.**

**Notes:**

- (1) \* Refers to corresponding "Variables" line items.
- (2) Plant unit (p.u.) calculation results shall be rounded up to the next whole number.
- (3) The "Total Plant Units proposed" shown on line item F from the above "Calculation of Individuals" shall be equal to or greater than line item #4 from the above "Variables".

### Sample Schedule for Section 120.4

#### *Landscaping, Street Trees – RESIDENTIAL Single Family Detached*

**Variables:**

1. Total linear feet of street frontage: \_\_\_\_\_ feet
2. Linear feet of street frontage utilizing IMP: \_\_\_\_\_ feet
3. **Net Linear Feet of Street Frontage:** (#1\* - #2\*) = \_\_\_\_\_ **feet**
4. Total number of lots proposed: \_\_\_\_\_ lots
5. Plant Units required (*based on net linear street frontage*):  $(\#3 / 100) \times 10 =$  \_\_\_\_\_ p.u.
6. Plant Units required (*based on total # of lots*):  $(\#4* \times 10) =$  \_\_\_\_\_ p.u. (minimum 1 tree / lot)
7. **Total Plant Units required:** \_\_\_\_\_ **p.u.** (*shall be equal to #5 or #6, whichever is greater*)

**Calculation of Individuals:** (*percentages are expressed in decimal format*)

- A. Number of Proposed Large Deciduous Trees: \_\_\_\_\_ (plants)  $\times 10 =$  \_\_\_\_\_ p.u.
- B. Number of Proposed Large Evergreen Trees: \_\_\_\_\_ (plants)  $\times 10 =$  \_\_\_\_\_ p.u.
- C. **Total Plant Units proposed:** \_\_\_\_\_ **p.u.**

**Notes:**

- (1) \* Refers to corresponding “Variables” line items.
- (2) Plant unit (p.u.) calculation results shall be rounded up to the next whole number.
- (3) The “Total Plant Units proposed” shown on line item C from the above “Calculation of Individuals” shall be equal to or greater than line item #7 from the above “Variables”.

### Sample Schedule for Section 120.4

#### *Landscaping, Street Trees – RESIDENTIAL Single Family Attached / Multi Family*

**Variables:**

1. Total linear feet of street frontage: \_\_\_\_\_ feet
2. Linear feet of street frontage utilizing IMP: \_\_\_\_\_ feet
3. **Net Linear Feet of Street Frontage: (#1\* - #2\*) = \_\_\_\_\_ feet**
4. **Total Plant Units required: (#3 / 100) x 10 = \_\_\_\_\_ p.u.**

**Calculation of Individuals:** *(percentages are expressed in decimal format)*

- A. Number of Proposed Large Deciduous Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- B. Number of Proposed Large Evergreen Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- C. Number of Deciduous Understory Trees: \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
- D. Number of Evergreen Understory Trees: \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
- E. Number of Deciduous Small Shrubs: \_\_\_\_\_ (plants) = \_\_\_\_\_ p.u.
- F. Number of Evergreen Small Shrubs: \_\_\_\_\_ (plants) = \_\_\_\_\_ p.u.
- G. **Total Plant Units proposed: \_\_\_\_\_ p.u.**

**Notes:**

- (1) \* Refers to corresponding “Variables” line items.
- (2) Plant unit (p.u.) calculation results shall be rounded up to the next whole number.
- (3) The “Total Plant Units proposed” shown on line item G from the above “Calculation of Individuals” shall be equal to or greater than line item #4 from the above “Variables”.

### Sample Schedule for Section 120.4

#### *Landscaping, Street Trees – NON-RESIDENTIAL*

**Variables:**

1. Total linear feet of street frontage: \_\_\_\_\_ feet
2. Linear feet of street frontage used for vehicular access: \_\_\_\_\_ feet
3. Linear feet of street frontage utilizing IMP: \_\_\_\_\_ feet
4. **Net Linear Feet of Street Frontage:** (#1\* - #2\*) - #3\* = \_\_\_\_\_ feet
5. **Total Plant Units required:** (#4 / 100 ) x 21 = \_\_\_\_\_ p.u.

**Calculation of Individuals:** *(percentages are expressed in decimal format)*

- A. Number of Proposed Large Deciduous Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- B. Number of Proposed Large Evergreen Trees: \_\_\_\_\_ (plants) x 10 = \_\_\_\_\_ p.u.
- C. Number of Proposed Understory Trees: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Understory Trees *Required:* (C x 0.8) = \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Understory Trees *Required:* (C x 0.2) = \_\_\_\_\_ (plants) x 7 = \_\_\_\_\_ p.u.
- D. Number of Proposed Large Shrubs: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Large Shrubs *Required:* (D x 0.8) = \_\_\_\_\_ (plants) x 3 = \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Large Shrubs *Required:* (D x 0.2) = \_\_\_\_\_ (plants) x 3 = \_\_\_\_\_ p.u.
- E. Number of Proposed Small Shrubs/Ornamental Grasses: \_\_\_\_\_ (plants)
  - 1) Number of Deciduous Small Shrubs/Ornamental Grasses *Required:* (E x 0.8) = \_\_\_\_\_ (plants)  
= \_\_\_\_\_ p.u.
  - 2) Number of Evergreen Small Shrubs *Required:* (E x 0.2) = \_\_\_\_\_ (plants) = \_\_\_\_\_ p.u.
- F. **Total Plant Units proposed:** \_\_\_\_\_ p.u.

**Notes:**

- (1) \* Refers to corresponding “Variables” line items.
- (2) Plant unit (p.u.) calculation results shall be rounded up to the next whole number.
- (3) The “Total Plant Units proposed” shown on line item F from the above “Calculation of Individuals” shall be equal to or greater than line item #5 from the above “Variables”.



**Sample Schedule for Section 140.**

*Credits*

1. Buffer yard or area receiving credit: \_\_\_\_\_
2. Total Plant Units required: \_\_\_\_\_ p.u. (*as shown on applicable planting schedule*)
  
3. Number of trees between 4" & 6" DBH: \_\_\_\_\_ x 10 = \_\_\_\_\_ p.u.
4. Number of trees between 7" & 12" DBH: \_\_\_\_\_ x 15 = \_\_\_\_\_ p.u.
5. Number of trees between 13" & 17" DBH: \_\_\_\_\_ x 20 = \_\_\_\_\_ p.u.
6. Number of trees between 18" & 24" DBH: \_\_\_\_\_ x 25 = \_\_\_\_\_ p.u.
7. Number of trees 25" DBH or greater: \_\_\_\_\_ x 30 = \_\_\_\_\_ p.u.
  
8. **Total Plant Units receiving credit :** \_\_\_\_\_ **p.u.**

## **SECTION 200**

## **DEFINITIONS**

## Section 200.0 Definitions

**Buffer yard** – A yard improved with landscaping and screening materials required between different intensities or between adjoining land uses for the purpose of decreasing the potential impact of different uses. The buffer yard is intended to recreate or preserve native woodlands. The buffer yard is also intended to remain free of buildings, impervious surfaces or parking areas. The minimum buffer width is generally a uniform width across the entire length of the common property line between lots on which uses are located that require a buffer yard.

**Caliper** – The diameter measurement of the trunk of nursery stock trees to be purchased for installation, taken at six (6) inches above the root collar. If the caliper measurement is greater than 4 inches at 6 inches above the root collar, then the caliper measurement is measured at 12 inches above the root collar. When measuring any tree, other than nursery stock, the tree is measured using the Diameter at Breast Height (DBH) method (See DBH definition).

**DBH (Diameter at Breast Height)** – The measured diameter of a tree at 4.5 feet (average breast height) above ground level, measured from the uphill side of the side of the tree. This measurement is used for sizing existing trees.

**Landscape architect.** A person who, by reason of his special knowledge of natural, physical and mathematical sciences, and the principles and methodology of landscape architecture and landscape architectural design acquired by professional education, practical experience, or both, is qualified to engage in the practice of landscape architecture and whose competence has been attested by the Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects of the Commonwealth of Virginia through licensure as a landscape architect.

**Landscaping** – The introduction or selective retention of flourishing trees and shrubs carefully selected and arranged to perform a design purpose or environmental function, such as controlling visual direction, providing definition to architecture, modifying climate, filtering air pollution, and controlling runoff and erosion. Trees and shrubs shall be the primary plant materials to apply to the development of the required landscaping and street planting. Street planting may include berms and low walls in conjunctions with trees and shrubs.

**Net linear feet** – The amount of linear footage along a street or property line that requires a planting area, not including any area used for vehicular access, IMP, or any area being saved under the requirements of Section 140, Credits, of this document. It may include sidewalks and utility easements that cross perpendicular through the planting area.

**Ornamental Grass** – An annual or perennial grass plant valued for its texture and color in the landscape, typically grown for its showy foliage and visual contrast.

**Planting area** – Area of the property designated to include the required plant units of this document. It shall not include sidewalks and utility easements parallel to the street or property line for which the planting area is adjacent.

**Plant Units (p.u.)** – A specific value assigned to each type of tree or shrub to determine the required amount of buffering or landscaping to be provided or credited within a designated area.

**Privacy/Opaque Fence** – A fence at least six (6) feet in height and does not allow the passage of radiant energy or light for all portions of the fence. Maintenance of the fence shall be in compliance with Section 28-89 of the Zoning Ordinance. Cloth, plastic or other fence covers attached to or inserted within a chain link fence shall not be permitted.

**Screening** – The method by which a view from one site to an adjacent site is shielded, concealed or hidden. Screening techniques may include, but not limited to: fences, walls, hedges, berms or other features.

**Shrub** – A woody plant with relatively low height, consisting of several stems rather than a main trunk.

**Shrub, Large** – A woody plant with relatively low height, consisting of several stems rather than a main trunk, which at maturity grows to greater than or equal to 3 feet in height.

**Shrub, Small** – A woody plant with relatively low height, consisting of several stems rather than a main trunk, which at maturity grows less than 3 feet in height or can survive pruning to 3 feet or less.

**Tree** – A woody, tall growing perennial plant generally with one main stem or trunk, but including multiple-stemmed plants, which characteristically develops many branches, generally at greater height above the ground than shrubs.

**Tree bed or planting bed.** A planting area that encompasses the use of low-growing shrubs or groundcover.

**Tree, Deciduous** – Trees that lose their leaves each fall, go dormant for the winter, and leaf out again in spring.

**Tree, Evergreen** – A type of tree that produces vegetation year-round and can assist with more efficient screening techniques.

**Tree, Large** – A tree, under normal growth conditions, that reaches a mature height at or above forty (40) feet. A tree that, at the time of planting, is at least twelve (12) feet tall above the highest root and has a minimum caliper of three (3) inches diameter at breast height (DBH).

**Tree, Understory or Small** – A type of tree that, under normal growth conditions, will grow to maturity beneath large trees and generally reach a mature height between ten (10) and forty (40) feet. A tree, at the time of planting, is at least five (5) feet tall above the highest root.

**Xeriscape** – A landscaping method developed especially for arid and semiarid climates that utilizes water-conserving techniques, such as the use of drought-tolerant plants, mulch, and efficient irrigation.

## **SECTION 300**

## **REFERENCES**

**Section 300.0 References.**

American Standard for Nursery Stock by ANLA, 2004.

City of Charlottesville, web: [www.charlottesville.org](http://www.charlottesville.org) Dirr's Encyclopedia of Trees and Shrubs, Michael A. Dirr, 2012, ISBN 978-0-88192-901-0.

Eastern Mountains and Piedmont 2016 Regional Wetland Plant List:  
[https://mfburchick.files.wordpress.com/2016/05/reg\\_emp\\_016vl.pdf](https://mfburchick.files.wordpress.com/2016/05/reg_emp_016vl.pdf).

Guidelines for Planning Near Power Lines: [www.dom.com](http://www.dom.com).

<http://www.plantcentralrappnatives.org>.

Janis Miller, Horticulture Curator, Virginia Living Museum, Newport News, Virginia, (757) 595-1900, e-mail: [Janis.miller@valivingmuseum.org](mailto:Janis.miller@valivingmuseum.org), web: [www.valivingmuseum.org](http://www.valivingmuseum.org).

Landscape Plants of the Southeast, R. Gordon Halfacre and Anne Rogers Shawcroft, 5<sup>th</sup> Edition, 1989, Sparks Press, INC., ISBN 0-916822-14-1.

National Wetland Plant List 2016:

[http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/news/FS\\_NWP\\_Plantlist\\_Apr2016\\_v2.pdf](http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/news/FS_NWP_Plantlist_Apr2016_v2.pdf).

USDA Tree Factsheet and Guide: <https://plants.usda.gov/java/factSheet>.

Virginia Department of Conservation and Recreation, Natural Heritage Program, (804) 786-7951:  
[http://www.drc.virginia.gov/natural\\_heritage/nativeplants.shtml](http://www.drc.virginia.gov/natural_heritage/nativeplants.shtml).

Virginia Invasive Plant Species List: <http://www.dcr.virginia.gov/natural-heritage/invspdflist>.