SECTION 5000
ENVIRONMENTAL

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5010 SOIL CELL

A. Design

1. The following Standard Specifications and associated Detail Drawings shall apply to all soil cell infrastructure systems within the right-of-way and on private property. Refer to General Provisions in Section 2000 for further requirements.

2. Soil cell infrastructure provides for the design and methods for the installation and maintenance of trees and shrubs along streets, sidewalks, parking lots and other impervious surface area applications. The introduction of an underdrain and engineered media can provide additional benefits as a Stormwater Control Measure (SCM) to satisfy stormwater management regulatory requirements. Soil cells without an underdrain or engineered media will not be considered for meeting stormwater management regulatory compliance.

3. Soil cells shall be located and sized by a licensed design professional in accordance with the Standard Specifications and associated details, the Cary Appearance Manual and for proprietary devices, per the manufacturer's specifications.

4. Soil media shall be specified on the construction plans and shall be new soil conforming to Cary specifications. For proprietary devices, Cary, at the appropriate staff's discretion, may approve alternative soil mixes. For soil cells designed for stormwater management regulatory compliance, the media shall conform to the latest version of the NCDEQ Stormwater Design Manual.

5. Underdrain connections to storm drainage system shall be shown on the grading and drainage plan. Soil cells on private property that connect to the Cary storm drainage system within the right-of-way will require a minor encroachment agreement.

6. All soil cells within the right-of-way shall be rated for H-20 loading.

7. Soil cells designed as a SCM for stormwater management compliance shall be required to conform with Cary's Stormwater Control Measures design, installation, construction and long-term maintenance requirement as specified in the Land Development Ordinance and applicable Design Standards.

B. Materials

1. Soil cells shall be manufactured proprietary devices or constructed with materials approved in Stormwater Drainage Section 8020.

2. The licensed design professional shall provide soil cell manufacturer details and specifications including type, media, location and other pertinent materials associated with the unit for approval with the development plans.

3. The appropriate Cary staff shall have sole discretion of soil cell approval.

4. Tree type and size shall be provided on the development plans and shall conform to Cary Detailed drawing requirements.

5. Tree mulch shall be double shredded hardwood mulch.

C. Installation

1. Contractor shall provide a soil cell submittal as outlined in Section 2000 and include at a minimum soil cell type, size, under drain location and connection, locate wire, media specifications, and tree species. Submittal shall include plan, profile and cross-section of the unit.

2. Installation of the soil cell unit shall be in accordance with the Standard Specification and Details. Proprietary devices shall be at a minimum installed in accordance with the manufacture's specifications and guidelines.

3. No utilities shall be allowed within or through the soil cell unit.

4. Locate wire shall be installed subgrade on the perimeter of the soil cell foundation.

5. Tree planting in soil cell shall conform to Cary Standard Detail 5000.01.

6. Tree staking shall conform to Cary Standard Detail 5000.02.

5020 VEGETATION INSTALLATION

A. Tree Planting

1. Prior to planting, verify adequate drainage exists for tree species being installed. Also verify trees conform to standards set in the most recent American Standards for Nursery Stock.

2. Planting location shall not be within Cary utility easements, such as storm drainage easements and utility and pipeline easements. The tree planting location must be coordinated with above ground utility lines and other fixed objects for clearance to avoid the need for massive pruning at a later date.

3. Tree planting hole shall be 3 times the width of the root ball and when installed within the planting hole, root flare shall be visible and at grade with natural soil line.

4. Planting hole shall be filled with unamended backfill. If soil amendment is required, the entire planting area shall be amended.

5. Tree Staking shall conform to Cary Standard Detail 5000.02.

6. 2 to 3-inches of double shredded hardwood mulch should be added on top of soil, extending a minimum of 3-feet out from the trunk. Keep mulch 1-inch away from tree trunk.

7. Tree planting shall conform to Cary Standard Detail 5000.04.

B. <u>Shrub Planting</u>

1. Prior to planting, verify adequate drainage exists for shrub species being installed. Also verify shrubs conform to standards set in the most recent American Standards for Nursery Stock.

2. Planting location shall not be within Cary underground utility easements, such as utility and pipeline easements. Shrub plantings may be allowed within storm drainage easements or stormwater control structure and access easements if approved on development plan.

3. Tree planting hole shall be 2 times the width of the root ball and when installed within the planting hole, root flare shall be visible and 1-2 inches above grade.

4. Planting hole shall be filled with unamended backfill. If soil amendment is required, the entire planting area shall be amended.

5. 2 to 3-inches of double shredded hardwood mulch should be added on top of soil. Keep mulch 1-inch away from shrub trunk.

6. Shrub planting shall conform to Cary Standard Detail 5000.05.

5030 TREE PROTECTION FENCE

1. Tree Protection Fence shall be installed around the drip line of trees in the construction work area as shown on the plans and as directed by the Engineer. The tree protection fence shall be installed in such a manner that it prevents all construction activities from encroaching into the area inside the drip line of the tree. The material and installation specifications for the tree protection fence shall be approved for use by the Engineer prior to installation. Tree protection fencing shall be installed prior to clearing, deliveries and other construction activity begins on site.

2. Signage for tree protection fence shall be placed every 300 feet as outlined in Detail 5000.03.

3. Tree protection fence shall be maintained on the site until all site work is completed and the final site inspection is scheduled prior to the issuance of a certificate of occupancy (CO). The fencing shall be removed immediately prior to the final site inspection for the site.

4. Tree protection fencing shall not be moved and there shall be no encroachment into such protected area(s) without written authorization of the town's zoning compliance staff. Any activity (landscaping, fencing, or utility installation) shown on the approved plans in a tree protection area shall also not occur without written authorization from the town's zoning compliance staff. Any unauthorized encroachment or disturbance within the boundaries of a tree protection area shall automatically result in fines and the replacement of any damaged vegetation in accordance with the land development ordinance.

END OF SECTION 5000