

Part 2: Exterior Landscape Maintenance

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1.0 General Conditions

1.1 Scope of Work

- A. The landscape contractor shall provide all materials, labor, and equipment required to complete all landscape maintenance work as specified in the contract.
- B. It is recommended that the landscape contractor have Landscape Industry Certified Technicians–Exterior on staff and performing the work whenever possible.
- C. The landscape contractor shall be familiar with the project premises and how the existing conditions will affect his/her work.

1.2 Standards

- A. All landscape maintenance services shall be performed by trained personnel using current and acceptable horticultural practices.
- B. All operators of power equipment shall conform to OSHA regulations.
- C. All work shall be performed in a manner that maintains the original integrity of the landscape design.
- D. All chemical applications shall be performed in accordance with current county, state, and federal laws, utilizing EPA registered materials and methods of application. These applications shall be performed under the supervision of a licensed certified pesticide applicator. For turfgrass fertilizer applications in Maryland, there is a Nutrient Management Certification required. All fertilizer applications made to turf must be made under the certified individual's supervision. Selection of chemicals shall be in accordance with the following current University Extension Publications:

In Maryland:

Maryland Fertilizer Use Act of 2011 For Professional Fertilizer Applicators

Certification

Beginning October 1, 2013, anyone who applies fertilizer to turf as part of his or her job must be certified, or work under the direct supervision of someone who is certified. See the Maryland Department of Agriculture website for more information: www.mda.maryland.gov/fertilizer.

General Requirements

Take soil test using an approved lab, initially and then every three years thereafter.

Follow the recommendations of UMD Extension: TT-115 for turf maintenance; TT-116 for seeding; or TT-118 for golf courses.

Keep records of fertilizer applications:

Date
Location
Rate (e.g., 4 lb/1,000 ft²)
Total amount used
Analysis of fertilizer

Do not apply fertilizer to impervious surfaces.

Nitrogen Limits

No more than 0.7 lb/1,000 ft² of soluble nitrogen may be applied in any one application.

No more than 0.9 lb/1,000 ft² total nitrogen may be applied in any single application, unless you are using an enhanced efficiency fertilizer.

Enhanced Efficiency Fertilizer

Defined as not having a release rate of more than 0.7 lb/1,000 ft² per month of nitrogen.

If using enhanced efficiency fertilizer, keep manufacturer's documentation of release rate. May not be applied after November 15. May not apply more than 2.5 lbs/1,000 ft² of nitrogen using an enhanced efficiency fertilizer. May not apply more than 80% of annual recommended rate for nitrogen.

Phosphorus

Organic Turf Fertilizer:

May not contain more than 5% P₂O₅.
May not have an application rate greater than 0.25 lb/1,000 ft² of P₂O₅ per application or 0.5 pound/1,000 ft²/year.

May not be used if soil test phosphorus level is optimum or excessive.

Timing Restrictions

No application of N or P₂O₅ to turf before March 1 or after November 15, except that between November 15 and December 1, ½ pound of soluble N may be applied. No application of N or P₂O₅ when the ground is frozen. Lime, K, and other nutrients are not regulated.

Setbacks

No application of N or P₂O₅ within 15 feet of water.

If using a drop spreader, rotary spreader with deflector shield, or targeted spray, the setback may be reduced to 10 feet.

Additional Information:

- Landscape IPM Guidelines for Integrated Pest Management, Bulletin 350.
- Total Crop Management of Herbaceous Perennials, Bulletin 359.
- Lawns and the Chesapeake Bay, Fact sheet 702.
- Fertilizing Landscape Trees and Shrubs, Fact sheet HG 23.
- Fact sheets (printed and electronic) on specific insects, mites, and disease control.
- Fact sheets (printed and electronic) on turf disease and weed control.
- Other updated University of Maryland Extension printed and electronically published literature: *Nursery News, Green Industry News, Agronomy.*

Please visit www.mda.maryland.gov/fertilizer to download the Nutrient Management Manual for turfgrass fertilizer applications.

In Virginia:

Pest Management Guide, Horticulture and Forest Crops – Bulletin 456-017

Electronic pest management guides can be accessed at <http://www.ext.VT.edu/pubs/pmg/>

Fertilizer regulations can be accessed at www.dcr.virginia.gov/stormwater_management/nutmgt.shtml

In D.C.:

The District of Columbia does not have any fertilizer regulations.

All organic gardening shall not use synthetic chemical pesticides or synthetic fertilizers.

All companies using IPM shall have regular monitoring and tracking of pest populations as a central part of their program. Alternative methods to broad spectrum pesticide applications such as biological releases or selection of pest resistant plant material will be used where practical. Selective biorational and botanical insecticides will be used in controlling pest populations when possible.

1.3 Approvals

- A. Any work performed in addition to that outlined in the contract shall only be done upon written approval by the owner or the owner's representative.
- B. All seasonal color selections, if not originally specified by the landscape architect, shall be approved by the owner or the owner's representative prior to ordering and installation.

1.4 Soil Testing

Refer to *Landscape Specification Guidelines Part 7: Soils*, section 1.7 (Soil Testing).

1.5 Workmanship

- A. During landscape maintenance operations, all areas shall be kept neat and clean. Precautions shall be taken to avoid damage to existing structures and plant material. All work shall be performed in a manner that ensures the safety of operators, occupants, and any pedestrians.
- B. All fertilizers remaining on paved surfaces must be removed.
- C. Upon completion of maintenance operations, all debris and waste material shall be cleaned up and removed from the site, unless provisions have been granted by the owner to utilize onsite trash receptacles or to compost on site.
- D. Any damage to the landscape, the structure, the irrigation, and/or electrical systems caused by the landscape contractor shall be repaired by the landscape contractor without charge to the owner.

1.6 Warranty

The landscape contractor shall make every effort to maintain the health and growth of all plant material and turf. The landscape contractor shall not be responsible to guarantee the plant material or turf, except when that landscape contractor was obviously negligent in the performance of his/her work as outlined in the contract.

2.0 Products

Pesticides, fertilizers, lime, and other such products used in landscape maintenance operations shall be selected based on the most current information provided by the University of Maryland or Virginia Polytechnical Institute (VPI) and currently labeled by the EPA for its proposed use.

3.0 Turf

3.1 Mowing and Cleanup

- A. Prior to each mowing, all trash, sticks, and other unwanted debris shall be removed from lawns and all areas to be mowed.
- B. Cool season grasses, including blue grass, tall fescue, perennial ryegrass, and others, shall be maintained at a height of 3½" to 4½" throughout the growing season.
- C. It is not recommended to mow during extremely dry or wet conditions. During the mowing season, all

lawn areas shall be mowed every 7 to 10 days or as weather conditions dictate. This is best determined by blade growth, as only 1/3 of the blade should be removed at any one cutting. Caution shall be used to avoid any flying debris. Safety glasses and ear protection shall be worn during this operation.

- D. The mowing operation includes trimming around all obstacles, removing excess grass clippings, and removing debris from walks, curbs, and parking areas.

CAUTION: String trimmers shall NOT come in contact with the bark of the tree.

- E. When possible, on all maintained lawns, mulching mowers should be used.

3.2 Edging

Edging of all sidewalks, curbs and other paved areas should be performed once every other mowing. Debris from the edging operations shall be removed and the areas swept or blown clean. Caution shall be used to avoid any flying debris. Safety glasses and ear protection shall be worn during this operation.

3.3 Fertilization

Operating in Maryland

Nutrient management laws passed by the Maryland Legislature in 1998 require that University of Maryland nutrient management guidelines are followed on commercially managed turfgrass sites larger than 3 acres.

Fertilizer regulations can be accessed at www.mda.maryland.gov/fertilizer.

Operating in Virginia

Fertilizer regulations can be accessed at www.dcr.virginia.gov/stormwater_management/nutmgt.shtml.

Operating in District of Columbia

Presently, the District of Columbia does not have nutrient management laws, but it is still environmentally responsible to follow the guidelines used in Maryland or Virginia.

3.4 Lawn Weed Control

- A. Chemical
 1. Based on the previous year's performance, a pre-emergent (soil-applied) herbicide may be applied, consistent with soil temperature requirements for the product being used and the state law, to help control the germination of crabgrass and other annual weed seeds.

2. A post-emergent (foliar-applied) herbicide shall be applied, if necessary, around mid-May to help prevent the growth of broadleaf weeds. A second application may be applied, if necessary, in late September to early October to help control fall weeds.
3. A non-selective pre- or post-emergent (soil- or foliar-applied) herbicide shall be applied, only when necessary, to walks, curbs, and other paved areas to help control the growth of weeds.
4. Selection and proper use of herbicides shall be the landscape contractor's responsibility. All chemical applications shall be performed under the supervision of a licensed certified pesticide applicator. **Read the label prior to applying any chemical.**

B. Non-Chemical Alternatives to Herbicides

Perennial weeds: The creeping-type of weedy grasses such as Bermudagrass, Roughstalk Bluegrass, Nimblewill, and Quackgrass cannot be successfully removed by digging unless they exist in very small, isolated patches. Because bunchgrasses have few, if any, stolons or rhizomes, they can be controlled effectively by digging. Using a spade or shovel, cut around clumps of weed grasses. The cut should be outside of all plant parts and at least 2" deep. When digging small patches of creeping-type grasses, the outside edge should be 6–12" outside plant parts and at least 6" deep.

3.5 Insect and Disease Control

The contractor shall be responsible for monitoring the site conditions on each visit to determine if any insect pest or disease problems exist. The contractor shall identify the insect pest or disease, as well as the host plant, and then consult the most current edition of the University Extension Service's "Pest Management Recommendations for Turf" for control. The certified pesticide applicator shall be familiar with the label provided for the selected product prior to application.

3.6 Irrigation

Refer to *Landscape Specification Guidelines Part 4: Irrigation*, section 1.15 (Maintenance).

3.7 Renovation

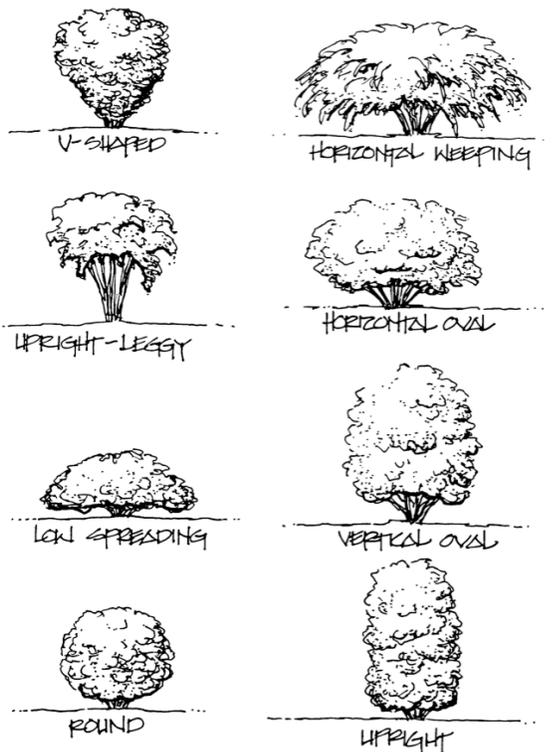
All turf renovation shall be considered an extra to the contract. Renovations may include disking, tilling, aerating, and/or topdressing. If required, this work shall be performed in accordance with the most current industry standards. Information about lawn renovation can be accessed at www.ipmnet.umd.edu.

4.0 Trees, Shrubs, Herbaceous Perennials, and Ground Cover

4.1 Pruning

- A. Please refer to the following for laws governing each jurisdiction:
www.dnr.state.md.us
www.ddot.dc.gov
www.dof.virginia.gov
www.fairfaxcounty.gov
- B. All ornamental trees, shrubs, and ground cover shall be pruned when appropriate to remove dead or damaged branches, maintain the natural form of the plant, and create the effect intended by the landscape architect or designer. Except for desired hedges, or to conform to design intent, all pruning and thinning of plants shall be done to retain their natural shapes. If previous maintenance practice has been to shear and ball, then a natural shape will be restored gradually. See Plant Shapes diagram below.

Plant Shapes

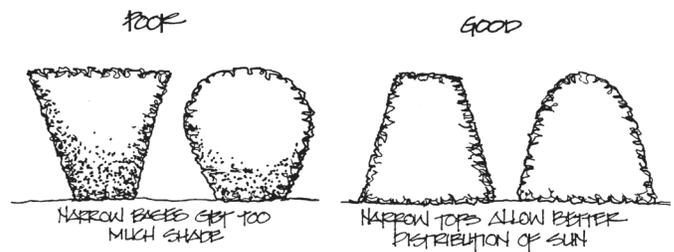


C. Pruning Guidelines

1. Prune those that flower before the end of June immediately after flowering. Flower buds develop during the previous growing season. Fall, winter, or spring pruning would reduce the spring flowering display.

2. Prune those that flower in summer or autumn in winter or spring before new growth begins, since these plants develop flowers on new growth.
3. Hollies and other evergreens may be pruned during winter so their branches can be used for seasonal decoration. However, severe pruning of evergreens should be done in early spring only.
4. Broadleaf evergreen shrubs would best be hand-pruned to maintain their natural appearance.
5. Hedges or shrubs that require shearing to maintain a formal appearance shall be pruned as required. Dead wood shall be removed from sheared plants before the first shearing of the season. See Shearing Guidelines diagram below.

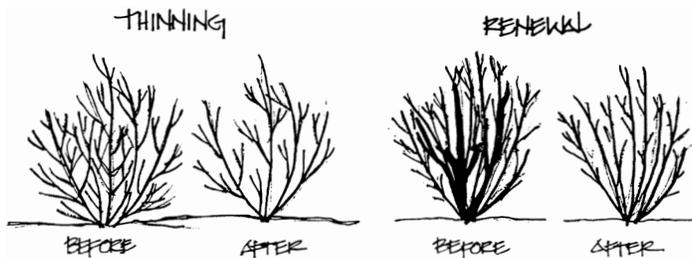
Shearing Guidelines



6. Conifers shall be pruned, if required, according to their genus.
 - a. Conifers should never be pruned to bare wood.
 - b. Yews, junipers, hemlocks, arborvitae, firs, spruces, and false-cypress may be pruned any time of the year. If severe pruning is necessary, it must be done in early spring.
 - c. Pines may be pruned within five weeks following total candle elongation by reducing the candle length. See diagram below.
7. Ground cover shall be edged and pruned as needed to contain them within their borders.
8. Thinning: Remove undesirable branches and water sprouts and suckers by cutting them back to their point of origin on parent stems. This method results in a more open plant, without stimulating excessive growth. Thinning is used on crapemyrtle, lilacs, Viburnums, Smokebush, and others. See Thinning Guidelines diagram.
9. Renewal pruning: Remove oldest branches of shrub at ground, leaving the younger, more vigorous branches. Also remove weak stems. On overgrown plants, this method may best be done over a three-year period. Renewal pruning may be used on Abelia, forsythia, deutzia,

Mockorange, Spiraea, and others. See diagram below. Some plants, like Smokebush, Vitex, Abelia, and Buddleia, may be cut down close to the ground in late winter and will regenerate.

Thinning Guidelines



- D. Plants overhanging passageways and parking areas shall be pruned as needed.
- E. Shade trees that cannot be adequately pruned from the ground shall not be included in the Maintenance Contract. This type of work shall be performed by a Maryland Tree Expert under a separate contract.
- F. For more detailed information regarding the pruning of specific plants, refer to www.ipmnet.umd.edu.

4.2 Cleanup

Plant beds shall receive a general cleanup before fertilizing and mulching. Cleanup includes:

- A. Removing debris and trash from beds.
- B. Cutting back herbaceous perennials left standing through winter (e.g., ornamental grasses, Sedum Autumn Joy). Established beds may require dividing and thinning. See section on perennials.
- C. Thoroughly weed area by manually removing all weeds, chemically treating all weeds, or a combination of the two.
- D. Cultivate existing mulch and/or remove excess soil and/or mulch to expose the root flare and so that when new mulch is applied, there is no more than a **total** depth of 2" of mulch.
- E. Edge previously mulched beds to create a 90-degree edge with a depth of 2" to 3", and remove resulting debris. Single tree plantings in turf shall have the trunk of the tree located in the center of the mulched area (tree ring).
- F. If necessary or specified, a pre-emergent herbicide may be applied to the soil to inhibit the growth of future annual or biennial weeds. Organically maintained gardens shall not receive any pre-emergent herbicides.

4.3 Fertilizing

A. Fertilizer selection

Slow-release fertilizer should be the preferred type. The technical data sheet or label on the fertilizer should show that a minimum of 50% of the nitrogen source is water insoluble (WIN) and the salt index is less than 50.

Slow-release fertilizers should be applied at a rate between 1 and 3 lbs of actual nitrogen per 1,000 sq. ft. per application and shall not exceed 3 pounds of actual nitrogen per 1,000 sq. ft. annually. Quick-release fertilizer should only be used when the objectives of fertilization cannot be met with slow-release fertilizer. Rates are between 1 and 3 lbs of actual nitrogen per 1,000 sq. ft. per application and shall not exceed 3 lbs of actual nitrogen per 1,000 sq. ft. annually. A soil test shall determine if phosphorus and potassium are required. In Maryland, a soil test is required to be done every three (3) years for turf and landscape beds. Follow the guidelines for other jurisdictions.

B. Fertilization area

The fertilization area shall be defined prior to application. Consideration shall be given to root accessibility, root location, fertilization objectives, and plant species. The area to be fertilized for shrubs shall be the area under the drip line of the plant. For trees, an area 1.5 times the drip line area can be fertilized. Inaccessible surfaces shall not be included in the rate of application. Overlapping fertilization areas shall be calculated once.

C. Fertilizer guidelines for fertilization of trees, shrubs, and ground covers

1. Trees. The fertilization of trees should be based on plant age, vigor, and maintenance program. Young trees that are producing 12" or more of new growth per year have an adequate supply of nutrients. This is especially true if the trees are growing in a well-fertilized lawn or garden area. The soil around young trees that are producing less than 12" of new growth per year should be tested and fertilized according to recommendations. Generally, the application of 2 to 3 lbs of a complete 50% organic fertilizer per inch caliper is recommended for both deciduous and evergreen species. The fertilizer is best applied by drilling 1" to 2" diameter holes drilled 8" to 10" deep at 2' to 3' intervals starting near the edge of the original root ball and extending 1/3 the distance beyond the drip line. One should

avoid top-dressing shade trees by applying an excess amount of nitrogen on turf growing under the shade of trees.

The fertilization of mature trees should be limited to maintaining vigor and color. If mature trees have good color and are producing a minimum of 8" to 10" of new growth, they have an apparent adequate supply of nutrients available. Many species of mature trees generally respond well to fertilizing or vertical mulching at 4- to 6-year intervals. The fertilization rate for mature shade trees is 3 to 4 lbs of a complete 50% organic fertilizer per inch diameter at breast height (DBH), starting at half the distance between the drip line and the trunk of the tree and extending 1/2 the distance beyond the drip line. The 1" to 2" diameter holes should be 8" to 10" deep and at 2' to 3' intervals. When vertical mulching, drill 3" diameter holes 10" to 12" deep at 2' intervals and fill the holes with screened compost.

2. Calculation of area for fertilizer application.
Example:

A crabapple with a 20-ft branch spread will receive fertilizer. The area of a circle is calculated as πr^2 . Using 3.14 as the value of π and having a radius (r) of 10 ft., the area of this circle would be $3.14 \times 10^2 = 314$ sq. ft.

If the tree is to receive 2 lbs of actual N/1,000 sq. ft., then 2 lbs of actual N/1,000 sq. ft. = x lbs of N/1,000 sq. ft.
 $314 \text{ sq. ft.} \times 1,000 = 2 \times 314 \times 1,000 = 628$

$$x \frac{1,000}{1,000} = \frac{628}{1,000}$$

x = .628 actual N/1,000 sq. ft. is applied to 314 sq. ft.

3. Application rate of fertilizer per tree status:

Status	Rate/Year
Newly planted	0–1 lb N/1,000 ft ² /year
Established plants	2–4 lb N/1,000 ft ² /year
Mature trees	1 lb N/1,000 ft ² /year

Fertilizer Application Methods

For surface application, all fertilizer shall be uniformly distributed within the defined area of fertilization. **Surface application shall not be made where surface runoff is likely to occur.** Where turf or ground cover exists, subsurface fertilization should be the preferred method of fertilization.

For subsurface dry fertilization holes, they shall be evenly spaced within the defined fertilization area. Holes should be 1"–2" in diameter, spaced 12"–36" apart and 4"–8" deep. The fertilizer should be evenly distributed among the holes. The fertilizer should not be closer than 2" to the soil surface.

For subsurface liquid fertilizer injection, the injection sites shall be evenly distributed within the fertilization area. For liquid injection systems, the pressure should not exceed 200 lbs per square inch. Fertilizer should be evenly distributed between holes.

Foliar applications, injections, or fertilizer implants shall only be used when soil application of fertilizer is impractical or ineffective in achieving fertilization objectives.

4. Shrubs should only be fertilized when they lack good color and/or are not growing properly. Yearly fertilizing of shrubs results in excessive growth of many species, resulting in increase need for pruning to maintain size and shape. Fertilizer needs should be based on soil test results and cultural practices. Excessive use of mulch or repeated application of hardwood bark mulches can create nutrient deficiency symptoms by applying fertilizers. If the shrubs appear to have normal growth and color, they are best left alone.
5. Ground covers: Newly planted ground covers often benefit from being fertilized with a 50% organic complete fertilizer at the rate of 2 to 3 lbs. of fertilizer per 100 sq. ft. during the first two to three years following establishment, especially if the soil was not properly prepared. Once the ground covers are well-established, yearly applications of fertilizer can create conditions for invasion by disease-causing organisms. The need to apply fertilizers to established ground covers should be based on color, vigor, and soil test results.

4.4 Mulching

The use of mulch should be limited to a maximum total depth no greater than 2" and applied only where the existing mulch has been either cultivated into the soil or removed. Only composted hardwood bark mulch, pure pine bark mulch, composted mix pine bark mulch, or unscreened compost shall be used in beds containing shallow rooted woody species, herbaceous perennials, or annuals. The use of shredded wood, wood chips, and colored shredded wood waste should be limited to uses such as around well-established deep-rooted species, walkways,

or play areas. Repeated applications of double-shredded hardwood bark mulch should be minimized in order to avoid the accumulation of toxic manganese in soils.

If annual or biennial weeds are the primary reason for mulching, they are best controlled with the use of pre-emergent herbicides applied before the weed seeds germinate or with the use of post-emergent herbicide applied with a wick applicator or by spray applied to the foliage of the growing weeds. If there are perennial weeds that exist, physically remove or spot treat chemically with an herbicide before mulching or else they will grow through the pre-emergent barrier.

Special care shall be taken in the mulching operation not to over mulch or cover the base of trees and shrubs.

4.5 Weeding

- A. All beds shall be weeded on a continual basis throughout the growing season to maintain a neat appearance at all times.
- B. Pre and post-emergent (foliar applied) herbicides shall be used where and when applicable and in accordance with the product's label.

4.6 Insect and Disease Control

The landscape contractor shall be responsible for monitoring the landscape site on a regular basis. The monitoring frequency shall be determined by joint consensus between the customer and contractor. Trained personnel shall monitor for plant damaging insect activity, plant pathogenic diseases, and potential cultural problems in the landscape. The pest or cultural problem will be identified under the supervision of the contractor. Monitor for weeds throughout the season, especially for invasive species. If any invasive species are found, take immediate action to remove.

For plant damaging insects and mites identified in the landscape, the contractor shall consult and follow the recommendations of the most current edition of the state University Extension publications on insect and disease control on landscape plant material. Refer to section 1.2 (Standards) in this guideline.

Plant pathogenic disease problems identified by the contractor that can be resolved by pruning or physical removal of damaged plant parts will be performed as part of the contract. For an additional charge, plant pathogenic diseases can be resolved through properly timed applications of fungicides when the customer authorizes. Fungicides are effective when applied before the symptoms are present on the plant and are applied on a preventative basis.

If the contractor notes an especially insect- or disease-prone plant species in the landscape, he or she will suggest replacement with a more pest-resistant cultivar or species that is consistent with the intent of the landscape design.

NOTE: For identifying plant-damaging insects and mites, a reference textbook that can be utilized is *Insects That Feed on Trees & Shrubs*, by Johnson & Lyon, Cornell University Press. For plant pathogenic diseases, three references are suggested: *Scouting & Controlling Woody Ornamental Diseases in Landscapes and Nurseries*, authored by Gary Moorman, published by Penn State College of Agriculture; *Diseases of Trees and Shrubs* by Sinclair, Lyon, and Johnson, published by Cornell University Press; and *Total Plant Management for Herbaceous Perennials*, a joint effort of the University of Maryland, Virginia Tech, and Cornell University and their specialists in various environmental fields. This publication is available at www.ipmnet.umd.edu.

4.7 Trash Removal

The landscape contractor shall remove trash from all shrub and ground cover beds with each visit. All trash shall be removed from turf areas prior to mowing.

4.8 Leaf Removal

Fallen leaves shall be mulched or removed from maintained areas on a contractual basis. If requested by the owner, supplemental leaf removals shall be performed by the landscape contractor at an additional cost to the owner.

4.9 Watering

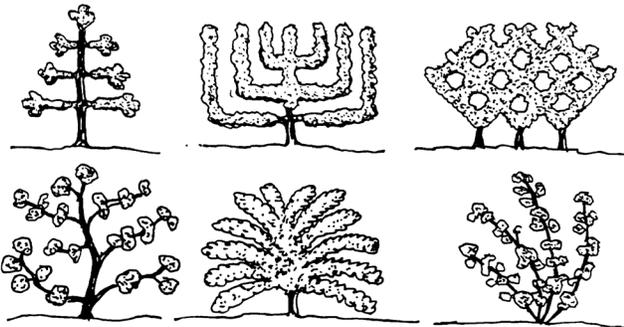
- A. If an irrigation system exists, the landscape contractor shall be responsible for monitoring its effectiveness and reporting any problems to the owner.
- B. The landscape contractor shall not be responsible for any hand-watering of the trees, shrubs, or ground cover, except where feasible and at an additional cost to the owner.
- C. In drought years, it is advisable for contractors to recommend watering to prevent damaging stress to landscape plants.

4.10 Espaliers

Espaliers may be formal or informal. Wires may be run horizontally across the structure, and branches may be attached to the wires or individually to masonry nails, screw eyes, or similar hardware. See Types of Espalier diagram.

- A. Attach tie, covered wire, tape, or treated string to masonry nail, wire, or screw eye.
- B. Tie open end around stem. Do not make tight. Leave room for stem to grow in diameter so it does not become girdled.
- C. Prune so that branches protrude no more than 12–18" from side of structure. Selectively prune branches to maintain desired shape.
- D. Check ties annually.

Types of Espalier



4.11 Vines

Vines usually have an indeterminate habit of growth. Most need to be restrained or restricted.

- A. Prune vines away from windows, doorways, and other openings.
- B. Restrict vigorous vines from clambering over other plants (e.g., wisteria, trumpet vine, Boston ivy, sweet autumn clematis). Some vines can be permitted access to other plants (e.g., clematis x 'Jackmanii').
- C. Prune to maintain integrity of design. Do not permit vines to escape through the landscape. Understand the vine's growth habit.

4.12 Miscellaneous

The following items shall be done one year after installation, if appropriate, at an additional cost to the owner.

- A. It is the owner's responsibility to remove stakes, wire, and hose one year after planting unless growing conditions warrant otherwise.
- B. Remove excess soil from soil rings.
- C. All dead or unhealthy plant material out of warranty shall be replaced upon the approval of plant selection and price by the owner.

5.0 Seasonal Color: Annuals and Bulbs

5.1 Seasonal Color Installation

The installation of perennials, annuals, and bulbs, unless specified herein, shall be performed by the landscape contractor at an additional cost to the owner.

Refer to *Landscape Specification Guidelines Part 1: Exterior Landscape Installation*, sections 7.0 (Planting Procedures for Ground Cover, Perennials, and Annuals) and 8.0 (Planting Procedures for Bulbs).

5.2 Seasonal Color Maintenance

A. Perennialization of bulbs

1. After flowering, cut off spent flower heads.
2. Allow leaves of daffodils and hyacinths to remain for a minimum of six weeks after flowers have faded. Cut off at base.
3. Allow leaves of other bulbs to yellow naturally and then cut off at the base.

B. Flower Rotations

1. Bulbs: Remove the entire plant and bulb after flowers have faded, or at the direction of the owner. Install new bulbs if included in contract. See *Landscape Specification Guidelines Part 1: Exterior Landscape Installation*, section 8.3 (Planting Chart).
2. Annuals
 - a. Dead-heading: Pinch and remove dead flowers on annuals as necessary.
 - b. Fertilizing: Perform a soil test every three years. If phosphorus is optimal then apply a slow-release fertilizer with a 1-0-1 analysis, such as a 20-0-20.
 - c. Removal: If fall plants are to be installed, summer annuals shall be removed in early fall when fall plants are available for installation. If not, summer annuals shall be left in the ground until the first killing frost and then removed, unless otherwise directed by the owner.

C. Perennials

1. Following the first growing season:
 - a. Fertilize perennials with a slow-release fertilizer or any 50% organic fertilizer; or mulch perennials with compost 1" deep.

- b. Cut all deciduous perennials flush to the ground by March 1 (if this was not done the previous fall) to allow new growth to develop freely.
 - c. Mulch the perennial bed once in early spring at a 1/2"– 1" depth. If soil is bare in late fall, re-mulch lightly after ground is frozen to protect perennials.
 - d. Inspect for insect or disease problems on perennials. Monitor and control slugs on Hostas and Ligularias. Powdery mildew on Phlox, Monardas and Asters can be prevented with properly timed fungicides or use of disease resistant varieties.
 - e. Weed perennial bed as specified in section 4.5 (Weeding) in this guideline.
 - f. Prune branching species to increase density. Cut only the flowering stems after blooming. **DO NOT REMOVE THE FOLIAGE.**
2. The following fall, cut back deteriorating plant parts unless instructed to retain for winter interest (e.g., Sedum 'Autumn Joy', ornamental grasses).
3. Long-term care:
- a. Perennials will be divided when the center of the plant begins to die out or when plants display less vigor or flowering. Plants will be dug with a spading fork and divided by hand, nursery spade, or a sharp knife. Strongest divisions will be kept for replanting. Divisions will be large enough to make a good display for the following season.

Divide plants that overcrowd the space provided. Divide according to the species. Some need frequent dividing (e.g., Asters and Yarrow every two years), others rarely, if ever (e.g., Peonies, Hostas, Astilbe).
 - b. For detailed information regarding the care of specific perennials, refer to *All About Perennials*, by Ortho; *Perennials: How to Select, Grow & Enjoy*, by Pamela Harper and Frederick McGourty, H.P. Books Publisher; *Herbaceous Perennial Plants*, by Allan Armitage, Varsity Press, Inc.; *Total Plant Management of Herbaceous Perennials*, www.ipmnet.umd.edu.

