

Part 3: Interior Landscape Installation and Maintenance

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1.0 General Conditions

1.1 Scope and Coordination

- A. The landscape contractor shall recognize and perform in accordance with all stated intents, specifications, drawings, and stipulations contained or referenced herein.
- B. It is recommended that the landscape contractor have Landscape Industry Certified Technicians—Interior 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 during both the installation and maintenance phases of this section.
- D. Except as otherwise stated herein, the landscape contractor shall furnish all plants, materials, tools, equipment, and labor necessary to complete the work described herein. Further, it shall be the landscape contractor's sole responsibility to make all arrangements for all required procurements, transportation, storage, and preparations.
- E. All plants, materials, and other products to be supplied by the landscape contractor under this section shall be subject to inspection and approval by the landscape architect prior to their installation. Such inspection may be made at the landscape contractor's facilities or at such other location(s) as may be designated herein.
- F. All materials and hardware to be supplied by the landscape contractor that is not specifically described herein shall be of suitable construction/ composition and quality to achieve their intended function within the interior landscape.

1.2 Foliage Plant Standards

- A. The landscape contractor shall provide plants, as specified, of a quality and size equal to or surpassing Foliage No. 1 grade, as described in the Interior Plant Specifications section of *The Guide to Specifications for Interior Landscaping*, current edition, published by the Professional Landcare Network, hereinafter referred to as the PLANET Guide.
- B. All plants provided under this section shall have been established in their present growing containers for at least six months prior to installation.
- C. No plant(s) provided under this section that require staking in order to maintain an upright position shall be accepted.
- D. All plants shall be acclimated at the nursery or at a designated storage area not less than two months prior to installation if originally grown under shade conditions. If grown under full sun, the

acclimatization period shall not be less than six months. During the acclimatization period, the light levels made available to the plant shall be gradually reduced to approximately 250-foot candles. The acclimatization process shall include consideration of temperatures, humidity, watering intervals, and fertilization schedule.

1.3 Guarantee and Maintenance Period

- A. The landscape contractor shall maintain and guarantee all plants for a one-year period beginning on the date of installation. Maintenance shall consist of a regularly scheduled maintenance program carried out by trained service technicians.
- B. A log or other written record of service shall be provided with each service visit. The service technician shall enter the date and maintenance tasks performed for each visit.
- C. Service procedures shall be as follows:
 - 1. Notify the owner of the service technician's arrival and departure from the project premises.
 - 2. Inspect soil moisture levels and replenish as necessary.
 - 3. Trim and clean all foliage, remove debris, and add soil or topdressing, as required.
 - 4. Maintain proper nutrient levels in the growing medium.
 - 5. As possible, rotate plants to evenly expose all sides to an equal amount of light.
 - 6. All measures, whether specifically referenced or not, that may be required to ensure the health and vitality of the plant material.
- D. The implementation of control measures for pest and disease infestations shall be in strict compliance with all federal and local regulations. A Certified Licensed Pesticide Applicator shall be familiar with the label provided for the selected product prior to application.
- E. The owner agrees that plants will not be moved without the landscape contractor's consent and that the landscape contractor will not be responsible for damage to the plants caused by the owner.
- F. Replacement:
 - 1. The landscape contractor shall replace, throughout the guarantee period, any plants that die or, in the opinion of the landscape architect or owner's representative, are in an unhealthy or unsightly condition. Replacements shall be

made promptly after direction from the landscape architect or owner's representative. The cost of such replacements shall be borne by the landscape contractor at no additional cost to the owner. It is understood that routine replacements should occur automatically.

2. Plants that have deteriorated within the guarantee and maintenance period shall be replaced with a plant of the same size and variety unless the landscape contractor can show that this is reasonably impossible. In such a case, a substitute, as approved by the landscape architect or owner's representative and that represents comparable value, will be allowed. There shall be no additional costs for replacement of any materials except for changes in size or value of the replaced item(s). Written approval of the change shall be secured from the owner's representative and the landscape architect before the replacement is made.

1.4 Waiver of Landscape Contractor's Plant Replacement Guarantee

In the event of any of the below listed situations, the owner shall release the landscape contractor from his plant replacement guarantee, as specified, and any resulting plant replacements shall be made at additional cost to the owner.

1. The occurrence of significant changes in plant location(s) without the landscape contractor's prior knowledge.
2. The occurrence of vandalism or theft.
3. Extended heat or power failures of sufficient duration to damage plant health.
4. The absence of hot and cold running water at the project premises.
5. The occurrence of temperatures outside the range of 55°F to 85°F.
6. Lack of access to the project premises. Lack of access to *all* plants for maintenance purposes during regular service visit, unless negotiated otherwise.
7. Watering or other well-meaning care by any client's or owner's employees.
8. Accidental or malicious damage to plants or containers by employees, cleaning crews, or other personnel.
9. Lowering of lighting levels below those that were originally specified as a basis for plant

specification, or below those existing at the time of the initial quotation for the maintenance contract. A measured level of 65 foot-candles at desk height for 10 hours per day is considered an absolute lower limit for most plants.

10. Introduction of any liquids, such as cleaning chemicals, alcohol, or surgery fluids, into the plant's soil, or the use of toxic gases, such as strong ammonia from floor cleaning and stripping.

2.0 Products

2.1 Plants and Planting

- A. Sterilized, soilless growing medium shall contain approximately 50% Canadian sphagnum peat, 35% composted pine bark, and 15% sand. Use of a premixed, proprietary planting medium specifically formulated for interior plants is acceptable, provided that it is approved by the landscape architect or owner's representative. A list of ingredients and the percentage of each by volume shall be submitted and approved in writing by the landscape architect or owner's representative.
- B. Pine bark: shredded and well decomposed.
- C. Peat moss: shredded sphagnum peat with a fiber length of 1/8" to 1/4" and a pH range of 3.1 to 5.0.
- D. Inorganic soil additive: perlite (coarse texture), vermiculite, or approved equal.
- E. Planting medium
 1. Basic considerations: When selecting a soil media for interior plantings, various criteria should be considered:
 - a. Permanency of the planting.
 - b. Moisture retention needed.
 - c. Light level of the planting.
 - d. System of irrigation to be used.
 - e. Size of plant material being installed.
 - f. Compatibility of root ball soil type to planting media.
 - g. Physical support required to keep plants stable.
 2. Characteristics of Growing Media
 - a. Well drained, but not so coarse that water retention and distribution is inadequate.
 - b. Relatively low in nutrients – avoid excess soluble salts.
 - c. Free from soil pests such as fungus disease organisms, nematodes, insects, and weed seeds.

- d. Uniform from batch to batch.
 - e. Favorable pH range (i.e., 6.0–6.5).
All planting media shall be amended with dolomitic limestone to adjust pH.
 - f. Free from after-sterilizing toxicity (i.e., low in ammonia, nitrates, salts, and other detrimental substances).
3. Options
- a. Media with sterilized soil (e.g., 2-1-1 mix: 2 peat moss, 1 topsoil, and 1 perlite or vermiculite). Good with high light levels and large plant material.
 - b. Soilless media: a light, airy, well-draining media of neutral pH. Soilless mixes are used in many situations (e.g., with sub-irrigation systems, low-light level plantings, and smaller plant material). Soilless media is commercially available under many trade names. Most soilless mixes have a nutrient charge added to the mix along with a wetting agent. Ratio of bark-peat moss-inorganic additive shall be specified for the particular project.
 - c. Either soil mix shall have a final wetted pH of 6.0–6.5.
- F. Gravel: Gravel for interior planters shall be 1/2" to 1" washed stone.
- G. Drainage board: Shall be composed of expanded polystyrene (EPS) beads averaging 3/8" diameter, with not more than 10% being 1/8" diameter or less. The EPS beads are then bound together with a waterproof adhesive binder and molded into blocks, usually 4' x 4' x 2". It shall have 2.0 PCF-nominal density, and the coefficient of permeability shall be 1.24 cm/SEC (ASTM D-2434).
- H. Filler board: Meant to be used above the drainage board layers as a filler where full depth of soil is not required. Filler board shall be EPS, a closed cell, resilient, lightweight, foamed plastic having a density between 1.0 and 3.0 PCF. The manufacturers of the filler board and drainage board shall participate in a certification program, as recommended by the Society of the Plastics Industry.
- I. Subsurface drainage matting: two-layer composite, consisting of a polyester, non-woven filter fabric heat-bonded to a compression-resistant nylon matting of open, three-dimensional construction.
- J. Filter fabric: nonwoven, heat-bonded geotextile fabric made of 100% polypropylene. The fabric is used to separate the soil from the drainage materials and shall extend up the sides of the planter walls at least 6".
- K. Topdressing: shredded pinebark mulch, 1/2" maximum size, or as specified by the landscape architect or owner for specialized uses (e.g., pinebark nuggets, sheet moss, decorative gravel).
- L. Plant material
1. Plant list: The landscape contractor shall be responsible for furnishing and installing all plant material shown on the drawings. The landscape contractor shall have investigated the sources of supply and satisfied himself/herself that he/she can supply all the plants specified on the plant list in the size, variety, and quality noted before submitting his/her bid. Failure to take this precaution will not relieve the successful bidder from the responsibility of furnishing and installing all the plant material in strict accordance with the contract requirements and without additional expense to the owner. Substitutions will not be permitted. If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with an equitable adjustment of contract price. Such proof shall be substantiated and submitted in writing to the landscape architect or owner's representative.
 2. Canes, trunks, stems, and branches
 - a. Must be free of pests and pathogens which could, by their presence, induce or contribute to the decline of the plant.
 - b. Must be free of conspicuous scarring evidence; scars, conspicuous or not, must be substantially healed, providing no point of entry for deleterious harmful pathogens or boring insects. There must be no splitting of canes or trunks at branching points.
 - c. Dead wood and branches must be removed.
 - d. All canes or trunks must be well-formed.
 - e. Plant height: Overall plant height shall be measured from the base of the growing container to mean foliage top.
 - f. Cane heights: With some cane varieties, size is determined by the height of rooted canes. Cane heights shall always be measured from the base of the growing container. Overall height of the plant shall be from the base of growing container to the mean foliage top.
 3. Foliage
 - a. Must be free of pests and pathogens which could, by their presence, induce or contribute to the decline of the plant.

- b. Must be free of any chlorosis, yellowing, or poor chlorophyll formation; turgid and substantially erect; and substantially free of blemishes resulting from mechanical, chemical, pathological, or pest-induced damage.
 - c. Must be cleaned of all dust and waterborne pesticide and fertilizer residue at the time of project acceptance. Foliage shall be cleaned throughout the maintenance and guarantee period.
4. Root system and soil mass
- a. The root system shall be well-developed and, upon inspection, shall be found to be free of pests and/or pathogens. Development shall be adequate to:
 - 1. Be well distributed throughout the container, such that the roots visibly extend on all sides to the inside face of the growing container.
 - 2. Conversely, the root formation within the container shall not have developed to the point where it becomes excessive (i.e., “pot bound”) and prohibits water from permeating to the fine water-absorbing root hairs.
 - b. The growing medium shall be composed of such constituents as may be necessary to provide:
 - 1. Thorough drainage and satisfactory aeration of the root zone. This soil mass should be as uniform as possible.
 - 2. Adequate moisture and nutrient retention as may be necessary to promote vigorous but controlled plant growth.

3.0 Execution

3.1 Procurement and Inspection of Plants

- A. In the event that the owner chooses to be involved in a trip(s) to the source of plant material for the purpose of locating, selecting, or approving plants, it will be at the expense of the owner. The landscape architect may accompany the landscape contractor to his previously determined sources and inspect plants and growing conditions. Specimen plants may be tagged by the landscape architect prior to any digging, root pruning, top pruning, or preparation for shipment.
- B. Digging and handling major plant material: All material shall be inspected and approved by the landscape architect or owner’s representative.

- C. Balled and burlapped (B&B) plants shall be dug with firm, natural balls of earth of sufficient diameter and depth to include the fibrous and feeding roots. No plants will be accepted if the ball is cracked or broken before or during planting operations.

3.2 Plants and Planting

- A. The landscape contractor shall coordinate all delivery and installation activities and he/she shall inform the owner at least 48 hours prior to commencement of work at the project premises.
- B. All transport of plants shall be via enclosed and environmentally controlled vehicles by personnel experienced in handling live plants.
- C. Unless otherwise stated herein, it shall be the landscape contractor’s responsibility to protect plants from adverse environmental conditions during all phases of delivery and installation. Further, the landscape contractor shall be responsible, except as otherwise stated herein, to protect all plants stored at the project premises during installation from any and all damage or deterioration of health or appearance.
- D. During delivery and installation, the landscape contractor shall perform in a professional manner, coordinating his/her activities so as not to interfere unduly with the work of other trades and leaving his/her work area(s) clean of litter and debris at the close of each workday.
- E. The landscape contractor shall maintain a qualified planting foreman at the project premises.
- F. Upon completion of the installation, the landscape contractor shall so notify the landscape architect or owner’s representative and schedule an inspection of the work.
- G. The landscape contractor shall promptly correct any deficiencies found in the installation as a result of the inspection. Upon final approval by the landscape architect or owner’s representative, the installation phase of this agreement shall be declared complete.

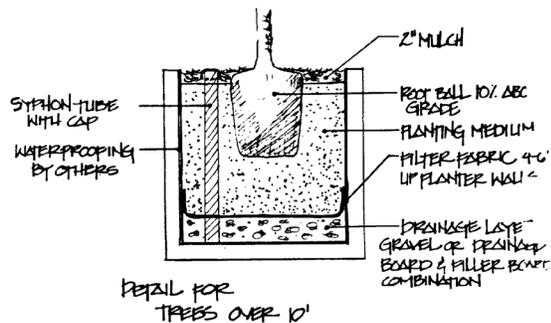
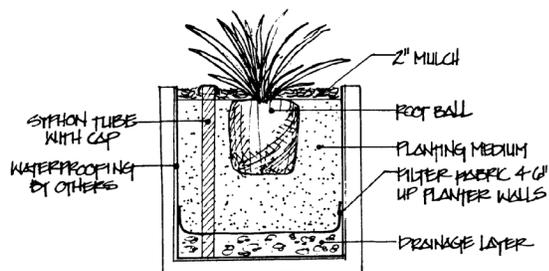
3.3 Planting

- A. For major installations, the landscape architect or owner’s representative shall be notified at least four (4) days in advance of the plants arriving on the job site. Having arrived, the plants shall be handled and protected so as to maintain their condition until planted. The poor condition of a plant or group of plants may cause rejection by the landscape architect or owner’s representative. All rejected material shall be removed promptly from the site.

B. Planting tree pits

1. Backfill tree pits with 8" of washed stone—1/2" to 1" diameter—or with drainage board.
2. Install 2" diameter black corrugated plastic pipe with black cap for inspection and siphoning.
3. Install soil separator on top of the stone or drainage board. Be sure to extend the soil separator up the sides of the planting pit 4" to lock in place.
4. Backfill with soil mix, as specified, to a depth that allows the top of the root ball to sit 4" below the top of the adjacent paving.
5. Install the tree in the pit. Remove burlap from top of root ball on B&B trees prior to backfilling. Backfill around the ball as appropriate.
6. Place 2" of shredded bark mulch over the top surface of the tree pit, bringing the finished grade of the bed to 2" below the top of the pavement.

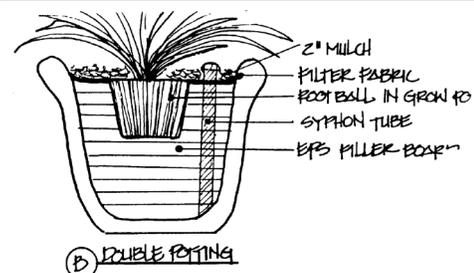
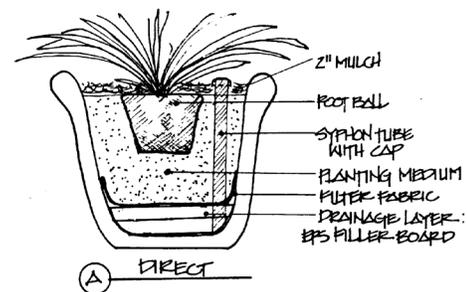
C. Planting raised planters



1. Place drainage material to within 6" of the bottom of the root ball of the plant material.
2. Install 2" diameter black corrugated plastic pipe, vertically, with black cap for inspection and siphoning.
3. Install soil separator over the drainage material. Be sure to extend the soil separator up the planter walls 4" to lock in place.
4. Backfill and compact with approved planting medium.
5. Set plants flush with the top of the bed, at 2" below the top of the planter wall. Large trees, 10'

tall or greater, shall be planted 10% above the finished grade.

6. Install a 2" layer of pinebark, shredded hardwood mulch, or material approved by landscape architect or owner's representative.
- D. Fixed planting beds: Generally, such beds shall be directly planted, removing nursery pots from plants. Follow the procedure outlined in C. (immediately preceding) for raised planters.
- E. Movable decorative planters (i.e., floor planters, file-top, and hanging planters): To achieve aesthetic and horticulturally sound plantings, the landscape contractor shall employ methods as indicated on the drawings below. Both "double-potting" and "direct planting" are acceptable methods of planting. Plants are to be placed plumb and secure within planters.



- F. Seasonal and other: For frequent rotational plantings (fixed or movable planter), when foliage or seasonal potted flowers are to be changed frequently, "triple-potting" can both facilitate the removals and installations and allow for an extreme variety of watering requirements.

