

## 1.0 **GENERAL**

### 1.1 **Scope**

- .1 This guideline addresses the quality scope of maintenance services expected prior to acceptance of new landscapes by UBC Okanagan Facilities Management inclusive of pest and disease control, warranty and replacement of plant material, stakes, guywires, manual watering, irrigation adjustment and winterizing etc.

### 1.2 **Related Work**

- .1 Section 32 01 93.01 Tree and Shrub Preservation
- .2 Section 32 93 05 Relocation of Existing Plant Material
- .3 Section 32 80 00 Irrigation
- .4 Section 32 91 00 Planting Preparation
- .5 Section 32 93 00 Plants
- .6 Section 32 92 00 Turf and Grasses
- .7 Section 32 92 23 Sodding

### 1.3 **Workmanship**

- .1 All work shall conform to the standards and practices outlined in the Canadian Landscape Standards – current edition; to be executed by skilled tradespersons well equipped and adequately supervised, and performed in accordance with these Standards. The Contractor shall have at least five years' experience and must provide written proof of experience and projects to the UBCO Manager of Landscape and Building Services.

### 1.4 **Supervision**

- .1 Supervisors shall have practical experience and knowledge of plant material and pest and disease control.
- .2 The Contractor shall be responsible for detection, recognition and timely control of plant pests and diseases. The Contractor shall have an up-to-date knowledge of the most effective, non-toxic, organic insecticides, miticides and fungicides, together with the ability to diagnose ailments. Obtain written approval from UBC prior to their application. **Note that use of toxic chemical pesticides for cosmetic purposes is suspended on UBC Campus.**

### 1.5 **Record of Maintenance Operations**

- .1 Work Schedule: Provide a schedule outlining the tasks to be undertaken through the year. These shall include as a minimum: fall/spring clean-up, fertilizer application, mulch application, irrigation, garbage clean-up, pruning, turf top-dressing and aeration.
- .2 The Contractor shall prepare a monthly summary of maintenance work and site conditions and submit it to the Manager of Landscape and Building Services at the end of each calendar month, for the duration of the maintenance period.

### 1.6 **Scope of Work**

- .1 Provide all equipment, material and labour for work specified herein including the following:
  - .1 Turf management, mowing, fertilizing, weed eradication, removal of clippings, aerating, top dressing, watering.
  - .2 Management of trees, shrubs, groundcover, aquatic plants, pest and disease control,

growth control, fertilizing, weeding, watering and cultivation, and mulching.

- .3 Complete blow out and drainage of the irrigation system prior to winter and the complete reinstatement of system operations in the spring.

### **1.7 Duration and Warrantee**

- .1 The landscape maintenance period shall begin at the time each plant is planted and shall continue for 55 days from the date of certified Substantial Performance of the Work.
- .2 The warranty on plants and trees will be for one (1) full year commencing from the end of the date of certified Substantial Performance of the Work.
- .3 Interim warranty inspections shall be scheduled as follows: the first to be conducted at the end of 55 day maintenance period, then following at approximately 6 and 9 month intervals.
- .4 The above interim inspections and an end-of-warranty inspection will be coordinated by the project management group and will include the warrantor, the UBCO Manager of Landscape and Building Services.

### **1.8 Notification**

- .1 Notify the UBCO Manager of Landscape and Building Services if any disease or insect problems arise.
- .2 Pest control measures to be implemented by the Contractor shall be reviewed and approved in writing by the UBCO Manager of Landscape and Building Services prior to their use. Provide the Project Landscape Architect and the UBCO Manager of Landscape and Building Services with a minimum 72 hour notification in writing prior to application of chemical vegetation controls. Post notice in area of spraying 72 hours before, during, and five (5) days after application.
- .3 Notify both the Project Landscape Architect and UBCO Facilities Manager of Landscape and Building Services of any physical changes and/or discrepancies which may affect the implementation of the contract as specified herein or which may endanger the public.

### **1.9 Inspection**

- .1 Regular inspections shall be conducted by the Project Landscape Architect accompanied by UBCO Facilities Manager of Landscape and Building Services prior to approval of application for payment in order to review work completed and identify deficiencies.

## **2.0 MATERIALS AND DESIGN REQUIREMENTS**

### **2.1 Materials**

- .1 The Contractor shall provide all materials, labour and equipment necessary to perform the operations as specified herein and as required to provide the optimum environment for the establishment of plant material.
- .2 Mulch: Shall be composted bark mulch with 50mm and minus Douglas Fir / Hemlock bark chips, dark brown in colour and free of cedar chips, soil, wood, stones, roots, plastic and other deleterious matter or pre-approved equal.
- .3 Provide a sample of each mulch component to Caro Analytical Services for inspection, testing and approval. Sample and test results shall include the name of the project, the name of the

Consultant and/or UBC and the date. Approved sample shall be standard throughout. Caro Analytical Services, 102-3677 Hwy 97 N, Kelowna BC V1X 5C3 (250-765-9646).

- .4 Provide copies of all test results and samples to the Project Landscape Architect and UBCO Facilities Manager of Landscape and Building Services.

## **2.2 General**

- .1 The Contractor shall maintain the project free from any defect resulting from work done or material supplied by the Contractor. The Contractor shall, to the satisfaction of the Project Landscape Architect and UBCO Facilities Management, rectify any defect that exists within the Maintenance Period. The Contractor must warrant all growing medium, soil amendments and fertilizers used on this project.
- .2 The Contractor shall be responsible for regular examination of the site during the term of the Contract and shall adjust the work schedule to suit site conditions.

## **2.3 Maintenance of Lawn Areas**

- .1 The Contractor shall be responsible for the maintenance of all lawn areas. Maintenance of lawn areas shall include all measures necessary to maintain lawn in a vigorous, healthy, normal growing condition. Begin maintenance immediately after installation and continue for one full year after Substantial Performance.
- .2 All mowed lawn areas shall be cut at minimum once a week, and twice a week during heavy growth periods to ensure maximum height of 2.5" (70mm)/ cut height of 1.5" (37.5mm).
- .3 Equipment shall be sharp, level and prevent burning or gouging of lawn.
- .4 All clippings and debris shall be removed at the time of mowing, and disposed of off site. This includes but is not limited to wet or dry grass clippings on bollards, lampposts, concrete walls, curbs and steps, asphalt paving, signs, sign posts, benches, sidewalks, pre cast concrete paving, tree trunks and stakes, and shrub planting etc.
- .5 The Contractor shall monitor the site for lawn areas that are not in a healthy growing condition and reseed them as soon as conditions are favourable. Areas showing shrinkage due to lack of watering shall be top dressed and seeded with the original mix.
- .6 Regular and adequate watering shall be provided in order to promote healthy lawn growth. In the event of watering restrictions which prohibit the use of the automatic irrigation system or in areas which lack an automatic irrigation system, manual watering shall be performed in quantities and at intervals required to promote healthy, vigorous grass growth.

## **2.4 Maintenance of Plants and Planted Areas**

- .1 The Contractor shall be responsible for the maintenance of all plants and trees. Maintenance shall include all measures necessary to maintain plants in a vigorous, healthy, normal growing condition, providing an appearance characteristic of their species and appropriate to their surroundings. Such maintenance shall include but not be limited to general cultivation, weed, pest and disease control, mulching, moisture conservation and watering, fertilizing, plant protection, pruning, and general clean-up. Begin maintenance immediately after installation and continue for 60 days after Substantial Performance.
- .2 All plant material shall be alive and in a healthy growing condition at the end of the maintenance period. Plant material which is not in such a condition shall be removed from the site and replaced.

- .3 Remove and replace dead plants and plants not in healthy growing condition upon notification. Make replacements in same manner as specified for original plantings and within 10 days of written request from Project Landscape Architect or UBCO Facilities Manager of Landscape and Building Services, weather and conditions permitting.
- .4 All planted areas, including the base of all trees, shall be scarified with appropriate hand tools designed for this purpose. This operation shall be carried out 2 to 3 times per growing season, and as required to prevent caking of surface soil or mulch. Where and when applicable, mulch should be replaced yearly or when required by erosion, decay, cultivation or vandalism.
- .5 It shall be the responsibility of the Contractor to maintain an adequate level of soil fertility through the regular application of mulches, suitable fertilizers, and the control of soil acidity where required. Lime shall be applied to plant areas where acidity is excessive (i.e. below pH 4.5). No lime shall be applied where specific planting requires an acid condition such as Ericaceous shrubs, rhododendrons and other acid liking broadleaf evergreens.
- .6 The Contractor shall apply, at least twice during growing season, slow release fertilizers to all plants. Apply fertilizer to plants in early spring, after danger of frost has past, and again mid autumn, at manufacturer's suggested rate or as required to promote health growth. Fertilizer shall be slow release, sulphur coated urea base, such as Agrico-Evergro Total (23-3-23) or approved equal. The Contractor shall provide receipts for fertilizers along with the regular maintenance log book.
- .7 Regular and adequate watering shall be provided in order to promote healthy plant growth. In the event of watering restrictions which prohibit the use of the automatic irrigation system or in areas which lack an automatic irrigation system, manual watering shall be performed in quantities and at intervals required to promote healthy, vigorous plant growth. Planted areas shall be watered at frequencies required to replace moisture at the root zone. Reform damaged watering saucers at the base of all trees.
- .8 Replace or respread damaged, missing or disturbed mulch. Remove dead, broken or hazardous branches from plant material.
- .9 All trees shall be protected against wind and snow damage by adequate staking, guying, tying or wrapping as conditions require. Guys, wire ties and stakes shall be examined at frequent intervals, and adjustments or renewals made to prevent abrasions or other damage to plants. Keep tree supports in proper repair and adjustment. Remove tree supports and level watering saucers at the end of the one year maintenance period.
- .10 **Note that use of toxic chemical pesticides for cosmetic purposes is suspended on UBC Campus.** Obtain written approval from the UBCO Facilities Manager of Landscape and Building Services prior to application of toxic chemical pesticides for any extenuating circumstances.
- .11 Apply any registered pest control product in accordance with Federal and Provincial regulations as and when required to control insects, fungus and disease.

## 2.5 Maintenance of Trees Impacted by Construction

- .1 The Landscape Contractor shall be responsible for the maintenance of all trees negatively impacted and/or modified by construction activities related to the specific project development.
- .2 Post-construction care of impacted trees will include but not be limited to the following:
  - .1 Water
  - .2 Fertilizer
  - .3 Pruning related to construction damages

## 2.6 Weed Control

- .1 The Contractor shall be responsible for the regular inspection and removal of weeds from all

landscape portions of the project. **Note that use of toxic chemical pesticides for cosmetic purposes is suspended on UBC Campus.** Weeding shall be done at a weekly interval during the maintenance period, followed by an inspection by the UBCO Facilities Manager of Landscape and Building Services along with the Contractor. Any weeds that are identified shall be removed within 1 week of inspection. In no cases shall weeds be allowed to be greater than 50 mm in spread. Weeds should be removed in their entirety, including root systems or any other below-ground parts.

- .2 Weeds are defined as undesirable plants and will include all plant species not intentionally planted or seeded, unless mutually agreed upon by the Project Landscape Architect and/or UBCO Facilities Manager of Landscape and Building Services and Contractor. Weeds will include, but not be limited to such plants as annual bluegrass, barnyard-grass, chickweed, crabgrass, clover, couch-grass, dandelion, groundsel, horsetail, mallow, morning glory, prickly lettuce, mustards, oxalis, pigweed, pineapple weed, plantain, shepherd's purse, smart weed, snapweed, sowthistle, stork's bill, thistle and will also include invasive, non-native species such as Scotch broom, Himalayan blackberry, purple loosestrife. Weeds will also be defined as any of the grass seedlings that germinate and develop in the mulched shrub bed areas that are caused by an over-application in the seeding or hydroseeding operation.
- .3 The Contractor shall monitor the site for the presence of weeds growing in pathways, roadways, shoulders, rock work, and hard construction. All weeds in these areas shall be removed once per month.
- .4 The type of weeds in an area shall determine the method of treatment. Weed control may consist of, but is not limited to the following:
  - .1 hand-pulling, digging, cultivation,
  - .2 encouraging the growth of desired plants which can compete with weeds, and
  - .3 timing the mowing of grass areas to correspond with the seeding cycle of weeds.
- .5 In situations where there is doubt concerning the necessity or effectiveness of a weed control measure, the decision of the UBCO Facilities Manager of Landscape and Building Services will finalize the best course of action.

## 2.7 Irrigation

- .1 Regulate proper application of water through the irrigation system to ensure healthy plant growth.
- .2 Winterize the irrigation system well before freeze-up in fall.
- .3 Damage to the sprinkler heads or other parts of the system resulting from Contractor's operations shall be replaced without charge to UBC.
- .4 Failures in the irrigation components due to other causes, such as wear, vandalism, accidents caused by others, etc., shall be reported to the Project Landscape Architect UBCO Facilities Manager of Landscape and Building Services.
- .5 All irrigation heads shall be kept clear of debris so that good coverage results.

## 2.8 Litter and Waste Clean-Up

- .1 Clean-up of litter and landscape waste shall be considered part of normal maintenance work. Litter shall include, but not be limited to, bottles, cans, plastic, rubber and all paper. Landscape waste shall include, but not be limited to, windfall, prunings, weeds, grass clippings, fallen leaves, stones and surplus or other waste materials as a result of landscape maintenance and construction operations.
- .2 All waste shall be gathered and removed from the site at the end of each day's maintenance operations. All litter shall be gathered and removed from the site weekly.

\*\*\*END OF SECTION\*\*\*