



Forest Enhancement Society of BC (FESBC)

TREE PLANTING SCHEDULE A

For Operational Services Contract

Standards from: Ministry of Forests, Lands,
Natural Resource Operations and Rural
Developments

**Note: PLANTING STANDARDS for Ministry Funded
Programs, Effective March 15, 2012 will also apply.**

OPERATIONAL SERVICES CONTRACT NO:

ATTACHMENT TO THE AGREEMENT DATED THE
____ DAY OF OCTOBER, 2019.

CONTENTS

| | | | |
|--|---|---|---|
| ARTICLE 1: GENERAL | 1 | Trees Not to be Planted | 6 |
| Definitions | 1 | Handling of Seedlings During Planting | 6 |
| Authority to Occupy the Treatment Units | 2 | ARTICLE 4: INSPECTION AND ACCEPTANCE | 6 |
| Additional Specifications | 2 | Contractor's Request for Inspection | 6 |
| Applicability of Requirements | 2 | Inspection Methodology | 7 |
| ARTICLE 2: SEEDLINGS | 3 | Inspection Results | 7 |
| Provision of Seedlings and Treatment Units | 3 | Re-inspection Following a Notice of Unsatisfactory Work | 7 |
| Substitution of Seedlings | 3 | ARTICLE 5: PAYMENT | 7 |
| Delivery of Seedlings | 3 | Full Payment | 7 |
| Responsibility for Seedlings | 3 | Payment Reduction for Low Planting Quality | 8 |
| Care of Seedlings | 3 | No Payment | 8 |
| Transporting Seedlings | 3 | Wasted or Unaccounted for Trees | 8 |
| Storage | 4 | Excess Trees | 8 |
| Seedling Containers | 4 | Untreated Areas | 8 |
| ARTICLE 3: PLANTING | 4 | Improper Storage and Handling | 9 |
| General Requirements | 4 | Stashed Trees | 9 |
| Microsites | 5 | Reusable Containers Not Returned | 9 |
| Spacing of Trees | 5 | ARTICLE 6: TERMINATION | 9 |
| Overall Density | 5 | Causes for Termination | 9 |
| Planting Spot Preparation | 6 | | |
| Planting Specifications | 6 | | |

ARTICLE 1: GENERAL

Definitions

1.1 In this schedule, the following words shall have the following meanings:

- a) "Acceptable Microsite" means a Microsite that meets the requirements specified in this schedule and as may be further specified in an attachment or in the Work Progress Plan.
- b) "Acceptable Natural Trees" means natural trees of the preferred / acceptable species, of sufficient size and quality to be treated the same as planted trees, as specified in this Agreement or in the Work Progress Plan.
- c) "Basic Payment" means, for each Payment Area, an amount which is equal to the sum of the total bid prices specified in Schedule B for the Treatment Units within the Payment Area, adjusted:
 - i) for any Equitable Adjustments agreed between the parties;
 - ii) where the bid price for a Treatment Unit is on a per-tree basis, by the recalculation of the total bid price for that Treatment Unit based on the Total Trees issued for planting in such Treatment Units; and/or

-
- iii) where a Payment Area contains part of a Treatment Unit, by an equitable pro ration of the total bid price for the Treatment Unit between Payment Areas.
 - d) "Berm" means the top of the material removed from a mechanically prepared trench that lies immediately beside the trench.
 - e) "Forest and Range Practices Act" means the Forest and Range Practises Act, its regulations and any amendments.
 - f) "Hinge" means the point at the original surface level of the ground where the top edge of a mechanically prepared trench or hole joins the sidecast material.
 - g) "Microsite" means a portion of a site that is uniform in microtopography and surface soil materials, generally ranging in size from less than 1 m² to occasionally over 5 m².
 - h) "Planting Quality Inspection System" means the Ministry of Forests, Lands and Natural Resource Operations planting quality inspection system in effect immediately prior to the commencement of Work.
 - i) "Planting Spot" means a plantable area of ground that is both an Acceptable Microsite and meets the contract spacing requirements (also referred to as a Plantable Spot).
 - j) "Prescribed Spacing" means the distance to be maintained between planted trees and the distance between planted trees and Acceptable Natural Trees, as specified in Schedule B (also referred to as inter-tree spacing).
 - k) "Price per Tree" means, for a Payment Area, the Basic Payment divided by the Total Trees issued for that area.
 - l) "Specified Minimum Inter-tree Distance" means the minimum acceptable distance between planted trees and between planted trees and Acceptable Natural Trees, as specified in Schedule B.
 - m) "Total Trees" means, for a Payment Area or Treatment Unit as the context so requires, the number of trees issued by the Province to the Contractor less any trees returned to the Province.
 - n) "Treatment Unit" means a Work Area, or any similar area which is individually identified in this Agreement as requiring a particular silviculture treatment.
 - o) "Wide Spacing" means when a group of two or more trees, inside an inspection plot, are spaced further than the Prescribed Spacing from each other and all their neighbours, inside or outside the plot.

Authority to Occupy the Treatment Units

- 1.2 The Province authorizes the Contractor to occupy the Treatment Units and to plant trees for the purposes of this Agreement.

Additional Specifications

- 1.3 Other schedules to this Agreement or the Work Progress Plan may amend the specifications in this schedule or contain additional specifications.

Applicability of Requirements

- 1.4 In this schedule, where an optional box (□) is shown, only those boxes containing an X apply to this Agreement.
- 1.5 Where the same requirement is expressed both in words and by an illustration, the illustration shall take precedence should there be any difference or matter of interpretation between them.

ARTICLE 2: SEEDLINGS

Provision of Seedlings and Treatment Units

- 2.1 The Province shall provide the Contractor with the seedlings and Treatment Units specified in Schedule B, except as otherwise provided in this Agreement.

Substitution of Seedlings

- 2.2 Where the Province is unable to provide the seedlings as described in Schedule B, it may substitute other seedlings.
- 2.3 Where either party considers that such substitution will cause an increase or decrease in the Contractor's cost of the performance of the work, that party may request that an Equitable Adjustment be made to the Contract Price, and that the contract be modified in writing accordingly.
- 2.4 Where the Province and the Contractor are unable to agree on an Equitable Adjustment to the Contract Price, the contract shall be deemed to be terminated by mutual consent, and the Province shall make no further compensation to the Contractor, other than payment for any work previously completed to the satisfaction of the Province.

Delivery of Seedlings

- 2.5 Upon receiving delivery of seedlings at the location specified in Schedule B1, the Contractor shall sign a receipt acknowledging the stock type, seedlot and numbers by species of the seedlings received. All subsequent transportation of the seedlings from the location specified in Schedule B1 is the responsibility of the Contractor.

Responsibility for Seedlings

- 2.6 The Contractor shall account for all seedlings provided by the Province and shall assume responsibility for their care from the time of delivery. Any seedlings that are not planted shall be returned to the Province at a mutually acceptable time and location. Before accepting the seedlings, the Province shall inspect them to determine, in the Province's sole opinion, that they are not mouldy, dry, flushed, damaged or otherwise unhealthy. The Contractor shall have no further claims or responsibilities with respect to seedlings accepted by the Province. The Province may refuse to accept the return of any seedlings that in the Province's sole opinion are moldy, dry, flushed, damaged or otherwise unhealthy and may reduce the Basic Payment in accordance with the procedures under Sections 5.8, 5.13, or both.

Care of Seedlings

- 2.7 The Contractor shall ensure that seedlings, either loose or in boxes, are at all times stored and handled in a manner to prevent damage from freezing, overheating, rapid temperature fluctuations, excess moisture, drying, physical injury, and exposure to injurious substances.

Transporting Seedlings

- 2.8 When transporting seedlings the Contractor shall ensure:
- (a) seedling boxes are handled gently without throwing or dropping;
 - (b) travel time is reduced to a minimum;
 - (c) seedling boxes are not exposed to the sun;
 - (d) transport vehicles are refrigerated or that the cargo area is adequately protected from the sun and other heat sources, and is well ventilated; and
 - (e) suitable, reflective-type tarps in good condition are used to cover seedling boxes.

Storage

- 2.9 Unless otherwise provided for in this Agreement, the Contractor may store seedlings in locations at or near the worksite where natural cooling is available (i.e., such as in standing timber, snow patches or small gullies), provided:
- (a) seedling box temperatures remain within temperature ranges and do not exceed or fall below temperature levels specified in writing by the Ministry Representative;
 - (b) such storage locations are cool and shady;
 - (c) seedlings are protected from the sun and rain with a suspended tarp; and
 - (d) seedling boxes are separated in a manner that permits air circulation around each box.
- If these provisions cannot be met at such on-site storage locations, then the Contractor shall, on a daily basis, transport each day's seedling supply from a storage facility or area where the aforementioned provisions can be met.
- 2.10 If this Agreement requires that the Contractor provide refrigerated van or trailer storage in the vicinity of the worksite:
- (a) such facilities shall be capable of maintaining stable storage temperatures within limits specified by the Ministry Representative; and
 - (b) seedling boxes shall be stored in such facilities in a manner that permits air circulation around each box.
- 2.11 Small supplies of seedlings may be stored on the planting site for a few hours provided they are covered with a reflective tarp and box temperatures remain within temperature ranges and do not exceed or fall below temperature levels specified under Section 2.9 (a). Shady areas must be used whenever possible.
- 2.12 To ensure that no individual boxes of seedlings are stored longer than necessary, stock is to be withdrawn for the purposes of planting from storage in the same order as received.

Seedling Containers

- 2.13 The Contractor shall:
- (a) dispose of all disposable seedling containers and wrappers either by burning, burying or delivering them to a disposal or recycling site as directed by the Ministry Representative; and
 - (b) return all reusable seedling containers to the seedling delivery site or to another similar location specified by the Ministry Representative.

ARTICLE 3: PLANTING

General Requirements

- 3.1 The Contractor shall:
- (a) plant the seedlings specified in Schedule B in the corresponding Treatment Units shown on the attached map; and
 - (b) conduct all operations within the requirements of the Forest and Range Practices Act.
- 3.2 The Contractor shall, in accordance with the following provisions, select as Planting Spots those Microsites which are most conducive to survival and growth of seedlings.
- 3.3 Once a Planting Spot has been selected it shall be prepared and the seedling planted in it in accordance with the provisions of this Agreement. The planting techniques used will be chosen to permit maximum survival and growth of the seedling.

Microsites

- 3.4 Each Planting Spot shall meet the requirements of an Acceptable Microsite.
- 3.5 Unless otherwise specified, unacceptable planting microsites are:
- (a) stumps and poorly decomposed rotten logs;
 - (b) flooded areas or areas subject to flooding;
 - (c) loose soil, organic material, gravel or debris subject to severe moisture deficit;
 - (d) any area within 3 metre(s) of the edge of the running surface of major access roads or as otherwise designated on the project map;
 - (e) any area within the drip (crown) line of larger trees; or
 - (f) any area under overhead obstacles that could interfere with seedling growth.
- 3.6 The Contractor shall select Plantable Spots in accordance with the following Microsite specifications.
- o Plant in mineral soil, well decomposed organic material, or acceptable mixture of both;
 - o Plant on the north side of acceptable shading objects (for protection from the sun)
 - o Plant in close proximity to obstacles (for protection)

Spacing of Trees

- 3.7 Spacing restrictions apply to the distance between any combination of planted trees and Acceptable Natural Trees. The Contractor shall select each Planting Spot according to the Prescribed Spacing specified in Schedule B1. The actual spacing between trees may vary from the Prescribed Spacing to take advantage of the most suitable Microsite but may not be closer than the Specified Minimum Inter-tree Distance. Spacing between trees may exceed the Prescribed Spacing but must not result in Wide Spacing.

Overall Density

- 3.8 Notwithstanding the foregoing, the Contractor shall ensure that where Planting Spots are available, the planting density throughout the unit shall meet or exceed the minimum specified in Schedule B1.

Planting Spot Preparation

- 3.9 Planting Spots shall be prepared so as to allow the seedling roots to be entirely planted in an acceptable medium and the seedling shoot to be left free of debris.

Planting Specifications

- 3.10 The Contractor shall plant each seedling as follows.
- (a) The planting hole shall be deep enough and wide enough so that the entire root system may be fully accommodated in a natural position.
 - (b) The root systems shall be positioned in the planting hole in a natural arrangement and shall not be jammed, bent, twisted or otherwise distorted or damaged.
 - (c) The seedling shall be planted so that the roots and stem are aligned along a vertical axis.
 - (d) Unless otherwise specified, the seedling root collar must be at or below the surface of the acceptable planting medium with no branches or needles buried.
 - (e) The planting hole shall be filled with acceptable planting medium leaving no air channels or air pockets and firmly tamped so that the seedling will not pull loose with a gentle tug.

Trees Not to be Planted

- 3.11 Seedlings which are mouldy, dry, flushed, damaged or otherwise unhealthy shall not be planted without the Ministry Representative's written approval.
- 3.12 Notwithstanding the Ministry Representative's written approval, the Province may reduce the Basic Payment in accordance with Section 5.13 for the improper storage and handling of seedlings planted in accordance with Section 3.11.

Handling of Seedlings During Planting

- 3.13 The Contractor shall not root or top prune or cull seedlings without the written approval of the Ministry Representative.
- 3.14 When handling, planting or tamping seedlings the Contractor shall ensure that seedlings sustain no physical damage from scarring, bending, crushing, root stripping or other causes.
- 3.15 The Contractor shall use planting bags of a type designed for the seedlings being planted and which shall be in good condition.
- 3.16 The Contractor shall ensure that seedling roots are kept moist while inside planting bags.
- 3.17 The number of seedlings carried in planting bags shall not exceed the amount that can be carried and removed without injury to the seedlings, or the amount that can be planted before critical heating or drying occurs.
- 3.18 Seedlings shall only be removed from the protection of the bag one at a time and immediately prior to planting.
- 3.19 Where "plug" type seedlings are being planted, plastic wrap shall not be removed from bundles until immediately before the seedlings are needed for planting.

ARTICLE 4: INSPECTION AND ACCEPTANCE

Contractor's Request for Inspection

- 4.1 The Contractor shall make a written request for the Province to inspect the Work for payment in accordance with the specifications in the Operational Services Contract, and shall include with the request a report containing:
 - (a) the planting completion date;
 - (b) the cumulative total of seedlings planted by species, seedlot, and stocktype; and
 - (c) a map showing the approximate locations where different seedlots were planted.

Inspection Methodology

- 4.2 The Contractor will inspect payment areas using the Ministry of Forests, Lands and Natural Resource Operations' Planting Quality Inspection System available at <http://www.for.gov.bc.ca/isb/forms/lib/FS704A.PDF>, which the Contractor hereby acknowledges to have read and understood.
- 4.3 At each planting quality inspection plot the Contractor shall record and use to calculate the planting quality percent and the excess percent:
 - (a) the number of Plantable Spots;
 - (b) the number of seedlings planted;
 - (c) the number of seedlings satisfactorily planted in accordance with the requirements under Article 3;
 - (d) the number of planting faults with a coded reason for each; and
 - (e) the number of seedlings planted in excess of the number of Plantable Spots.

Inspection Results

- 4.4 The Contractor shall calculate performance quality in accordance with the Planting Quality Inspection System and shall declare any contiguous area greater than one-tenth (1/10) hectare unsatisfactorily treated when planting quality for the plots within the area is less than the minimum acceptable standard of 85%.
- 4.5 Without limiting the rights of the Province provided for elsewhere in this Agreement with respect to contract non-compliance, when an inspection reveals planting quality is below the minimum acceptable standard of 85%, the Province may:
- (a) give the Contractor a deadline by which time planting quality must be raised to the minimum acceptable standard; and
 - (b) specify if the Province wishes to exercise its option to require the Contractor to re-work the unsatisfactorily planted area.

Re-inspection Following a Notice of Unsatisfactory Work

- 4.6 During or after a tree planting deficiency noted in the previous section has been corrected, the Province shall again review the Work in the deficient area using the same procedures as for the original treatment.

ARTICLE 5: PAYMENT

Full Payment

- 5.1 Where inspections pursuant to the Planting Quality Inspection System indicate planting quality in a Payment Area is at least 92.6%, the Province shall pay the full Basic Payment.
- 5.2 In no case shall the Province pay more than 100% of the Basic Payment.

Payment Reduction for Low Planting Quality

- 5.3 Where inspections pursuant to the Planting Quality Inspection System indicate planting quality in a Payment Area is equal to or greater than 70% but less than 92.60%, the Province shall reduce the Basic Payment by multiplying the Basic Payment by the Payment %, as calculated using the following formula:

$$\text{Payment \%} = (\text{PQ\%} \times 1.08) - \frac{(\text{[100 - (PQ\%} \times 1.08)\text{]}^2}{8}$$

Where: PQ% = Planting Quality % as determined under the Planting Quality Inspection System.

No Payment

- 5.4 If the performance quality on all or a portion of a Payment Area is less than 70% and, in the opinion of the Province, cannot be improved to at least this level by reworking, the Province shall make no payment for the unsatisfactorily treated area.
- 5.5 Where Planting Spots are available, but the Contractor has failed to maintain the minimum density specified, the Province may not pay for the area affected.

Wasted or Unaccounted for Trees

- 5.6 The Province shall estimate the number of wasted trees by counting or using appropriate sampling techniques.
- 5.7 The Province shall estimate the number of unaccounted for trees by subtracting the number of trees planted in a Payment Area, as measured using the Planting Quality Inspection System, plus 10 percent (or the upper 90% confidence limit of the number of trees planted, whichever is greater) from the Total Trees for that area.
- 5.8 For wasted or unaccounted for trees, the Province shall reduce the Basic Payment by the estimated number of wasted or unaccounted for trees multiplied by the sum of (the Price per Tree plus twenty (20) cents).

Excess Trees

5.9 Excess trees as calculated using the Planting Quality Inspection System may be planted in a Payment Area to a maximum of seven percent (7%).

5.10 If inspection indicates that excess trees in a Payment Area exceed seven percent (7%), the Province shall reduce the Basic Payment in an amount equal to the product of the number of trees which exceed the seven percent allowable excess (based on Total Trees), multiplied by the Price per Tree;

that is, $[(\text{Excess \%}/100) - 0.07] \times \text{Total Trees for the Payment Area} \times \text{Price per Tree}$

5.11 If excess trees exceed 12 percent (12%) in a Payment Area, the Province shall, in addition to the aforementioned payment reduction, further reduce payment in an amount equal to the product of the number of trees which exceed 12 percent excess (based on Total Trees) multiplied by twenty (20) cents;

that is, $[(\text{Excess \%}/100) - 0.12] \times \text{Total Trees for the Payment Area} \times \0.20

Untreated Areas

5.12 If the Contractor fails to plant any contiguous area exceeding one tenth (1/10) of a hectare which the Province considers plantable, then the Province may reduce the Basic Payment by an amount equal to the product of the unplanted area (in hectares) multiplied by one thousand dollars (\$1000.00) per hectare.

Improper Storage and Handling

5.13 Where the Contractor has failed to store, handle or care for seedlings in the manner specified herein or has by any other means put the health, vigour, or safety of the seedlings in jeopardy, the Province may reduce the Basic Payment by fifty dollars (\$50) for each box or partial box of seedlings affected by the failure. A reduction in the Basic Payment under this section may be made in addition to any other reductions under this Agreement.

Stashed Trees

5.14 Where seedlings issued to the Contractor have been abandoned or disposed of without written authorization by the Province, the Province may reduce the Basic Payment by an amount of up to one thousand dollars (\$1000.00) for each occurrence. If, in the opinion of the Province, the value of the stashed trees is greater than one thousand dollars, an assessment of greater than one thousand dollars may be made for each occurrence. A reduction in the Basic Payment under this section may be made in addition to any other reductions under this Agreement.

Reusable Containers Not Returned

5.15 Where the Province supplies seedlings in reusable containers, it shall reduce the Basic Payment by twenty-five dollars (\$25) for each reusable container not returned.

ARTICLE 6: TERMINATION

Causes for Termination

6.1 Without limiting the right of the Province to cancel this Agreement as provided for elsewhere in this Agreement, the Province may cancel all or a part of this Agreement when the Contractor:

- (a) abandons or disposes of seedlings supplied by the Province without the written authorization of the Province;
- (b) fails to comply with a notice from the Province that demands the performance quality of the Work be raised to an acceptable standard by a specified deadline; or
- (c) after having received an earlier notice of unacceptable performance quality, any inspection of further Work under this Agreement indicates that quality is again below the requirements of this Agreement.