

SECTION 12

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SECTION 12**LANDSCAPING****12.1 SCOPE**

This section shall cover the design standards, material specification and installation of trees, plantings and irrigation systems within the municipal streets.

12.2 SUBMISSION**12.2.1 Landscape Plan**

Landscape design within the streets shall be prepared by registered Landscape Architect. Two copies of a proposed landscape plan shall be submitted with the other development plans for approval. The plans shall meet the same general design requirement as listed in sections 2.2 and 2.12 of this manual. The landscape plan shall also show the information listed below:

- (a) Existing Plant Material:
Document all existing trees >20 cm in caliper or stands of native vegetation. Plans must show species name, caliper size and future plans for each tree or stand (retain in place, remove or move).
- (b) Proposed Plant Material:
Location, quantities, species and sizes of all planting to BCSLA/BCNTA standards. All proposed grass areas must be included and itemized as seeded or turf.
- (c) Irrigation:
Irrigation information including automatic irrigation drawings and/or manual irrigation hose bib locations.
- (d) Hard Landscape Elements:
Location, materials and details for all hard landscaping including paving, decks, retaining and freestanding walls.
- (e) Landscape Elements:
Location and details for all landscape structures including fencing, privacy screens, arbours, and garbage/refuse/recycling screening. All site furnishing including benches, garbage receptacles, lighting, play equipment and other miscellaneous elements must be documented.

- (f) When required, provide detailed site grading with a contour interval suitable to the scale of the project and be able to accurately portray the existing and ephemeral water features and significant geological formations.
- (g) All existing natural landforms including but not limited to: rock outcroppings, existing and ephemeral water features and significant geological formations.
- (h) All man-made existing elements and legal information including but not limited to: rights-of-ways for all utilities, roads and pathways, below and above ground utility corridors and structures. If planning on-slab, extent of slab must be shown.

12.2.2 Construction and Installation

Once the landscaping plans have been approved by the Municipality the developer may choose to:

Construct and install all landscaping during subdivision development.

or

Utilize one of the other two options detailed in Section 4.0 (1) of the Subdivision and Development Bylaw No. 1115.

12.3 GENERAL PLANTING REQUIREMENTS

Plant material species suitable for landscape installations should be compatible with current industry inventory availability. Specific plant species chosen should reflect the intent and location of the project. Where the interface between proposed landscape work meets native vegetation, all attempts should be made to utilize native, or ornamental cultivars of native plant material. Species selection should reflect the goal to minimize mechanical irrigation and pest management support.

12.3.1 Plant Condition

All tree and plant material shall be of good health and vigour with no visible signs of disease, insect pests, damage or other objectionable disfigurements.

12.3.2 Time of Planting

Contact the Engineer and Director of Parks, Recreation and Culture 48 hours prior to planting.

Planting works are to be completed during normal planting seasons as dictated by prevailing weather conditions. Planting in frozen ground or with frozen rootballs is not acceptable.

Planting will not be permitted during heavy rain or extremely hot, dry weather.

All necessary precautions are to be taken to protect the plant material from prevailing weather conditions during transportation and planting.

12.3.3 Soils

All growing medium used in planting beds and lawn areas must meet BCNTA standards for nutrient content, organic matter and pH value. Topsoil must be free from stones, roots, toxic materials, noxious weeds and weed seeds.

12.3.4 Plan Palette

Wherever possible, plant material should be specified which will thrive in the proposed locations without the necessary support of an irrigation system or extensive pest management control. Native plants adaptable to the proposed conditions or suitable ornamental material is recommended.

12.4 TREE PLANTING REQUIREMENTS

12.4.1 Tree Species

The selection of tree species to be used in a subdivision shall be made from the Town of Ladysmith Tree Selection Guide and be acceptable to the Director of Parks, Recreation and Culture. If desired, alternate tree species may be submitted to the Director of Parks, Recreation and Culture for approval. All trees must be nursery grown stock. Relocated existing trees may be acceptable upon review by the Director of Parks, Recreation and Culture.

12.4.2 Tree Dimensions

Each tree shall have a minimum caliper of 7.0 centimetres and not less than 2.5 metres in overall height. Each tree shall have a sturdy, reasonably straight trunk. Minimum branch height on all trees shall be at 1.8 metres. Each tree shall have a well-balanced branching head

with the branches growing out from the stem with reasonable symmetry. Where trees are intended as canopy street trees, multi-trunk species will not be accepted.

12.4.3 Root System

Plants shall be of balled and burlapped, wire basket or container grown stock. Bare root trees are not acceptable. Balled and burlapped stock shall be dug and sacked at least one year prior to planting. Container grown stock shall have a sufficiently well-established root system to hold the soil together when removed from the container. In all cases, the root system shall be strong, fibrous, free of disease, insects, defects or injuries, and shall be sufficiently developed to guarantee successful transplantation. Wherever possible utilize industry planning procedures to enable viable plant growth within an urban environment, without the use of root barriers. Utilize root barrier systems only in locations where planting environments may be in conflict with the hard landscaping.

12.4.4 Tree Locations, Spacing and Clearances

- (a) Unless otherwise approved by the Director of Parks, Recreation and Culture, trees are to be planted to the BCNTA (British Columbia Nursery Trades Association) standard. Actual tree numbers, spacing and locations vary according to site conditions and amenities. Unless otherwise approved, the landscaping shall include a minimum of one tree per developed lot.

Locations will be staked out by the developer according to the plans, and verified on site by the Engineer and Director of Parks, Recreation and Culture prior to planting. If underground obstructions are uncovered, they are to be reported to the Engineer for resolution.

- (b) Listed below are the minimum distances trees are to be planted from:

Corners	4.0 m
Street Lights	6.0 m
Driveways	0.75 m
Catch Basins	2.0 m
Manholes	2.0 m
Hydrants	2.0 m
Water and Sewer Services	1.5 m

Back of Curb	0.75 m
Edge of Sidewalk	0.60 m

12.4.5 Planting Procedures

All trees shall be planted as per planting detail P2.

- (a) All trees shall be planted in holes large enough to accommodate the entire rootball plus topsoil. Therefore, holes should be excavated the diameter of the rootball plus 600 mm. The bottom of the holes are to be scarified to a depth of 150 mm and the holes shall then backfilled with imported topsoil to bring the plant material to the depth they were originally growing in the nursery. All trees shall be planted so that after settlement they will be at the original growing medium depth.
- (b) With balled and burlapped stock, the top 1/3 of the burlap should be folded back without disturbing the rootball. Container grown stock shall have the container removed before planting. Wire basket stocks shall have the entire basket removed prior to planting.
- (c) Once the trees are in place, the holes are to be backfilled with topsoil mixed with a high phosphate fertilizer applied at a rate according to the manufacturer's recommendations. The holes shall be backfilled, tamped and watered in layers to help secure the tree and eliminate large air pockets.
- (d) Once planted, the trees are to be securely staked using 2.0 metres long, 50 by 75 mm diameter pressure treated stakes and tied with #1 galvanized wire encased in reinforced rubber garden hose at point of contact with the tree.
- (e) Insert a 25 mm diameter solid PVC watering tube at the outer edge of the backfilled hole away from the rootball. The tube shall be inserted to a depth that is 30 mm above the bottom of the rootball and the top of the tube shall be extended 25 mm above the ground.
- (f) To protect the base of the tree from ground maintenance equipment (i.e.: weed eater lines), a 75 mm long, 100 mm diameter piece of Big pipe is to be wrapped around the base of the tree.
- (g) Upon completion of the tree planting the site shall be cleaned of all excess soil, rock and debris.

12.5 SHRUB PLANTING REQUIREMENTS**12.5.1 Shrub Species**

The selection of shrub species to be used in a subdivision shall be made from the Town of Ladysmith Shrub Selection Guide and be acceptable to the Director of Parks, Recreation and Culture. If desired, alternate shrub species may be submitted to the Director of Parks, Recreation and Culture for approval. All shrubs must be nursery grown stock. Collected material, noxious weed species and known invasive shrubs are not acceptable.

12.5.2 Shrub Sizes

The pot size of shrubs is dependent on the species selected. The Shrub Selection Guide outlines the required pot sizes for each species. When approved by the Director of Parks, Recreation and Culture, the recommended pot size may be varied.

12.5.3 Planting Procedures

- (a) All shrub plants shall be delivered to the site and protected from sun and drying winds. Plants that cannot be planted immediately on delivery shall be kept well watered. New plants shall not remain unplanted for longer than three days after delivery.
- (b) The planting area of shrubs shall be excavated to a depth that will allow a 450 mm depth of growing medium below the plants rootball. The rough grade below the growing medium shall be scarified to depth of 150 mm.
- (c) Shrubs shall be planted so that after settlement they will be at the original growing medium depth. Allow for settling of the growing medium after planting so that the total depth of the rootball remains in the topsoil.
- (d) Plants shall be set plumb in the planting beds or pits, except where the plants character requires a variation of this.

- (e) Growing medium shall be placed in layer around the roots or ball preferably by hand. Each layer shall be carefully tamped so as to avoid injuring the roots or ball or disturbing the position of the plant.
- (f) Upon completion of the planting the site shall be cleaned of all excess soil, rock and debris.

12.6 IRRIGATION

Provision for watering of landscape areas should be considered as part of the design process. In general tree plantings can be watered manually until they are well established while shrub planting areas may require an automatic irrigation system. The irrigation system shall be manufactured by Toro (or approved equivalent) and designed by an approved Toro Irrigation Specialist (or approved equivalent).

Contact the Engineer and Director of Parks, Recreation and Culture 48 hours prior to installing irrigation systems.

12.7 IRRIGATION MATERIALS

12.7.1 Pipe and Fittings

All irrigation pipe and fittings are to be Schedule 40 PVC and marked with Manufacturer's name, pressure rating and type of material. All services from the water main to the point of connection for the irrigation system shall be as specified in the Water Section 4A.7.

12.7.2 Backflow Prevention

For irrigation systems used in residential subdivisions a Watts Series 007 or approved equivalent Double Check Valve Assembly is required.

Commercial or Industrial installations which have a high hazard of cross connections, i.e. Fertilizer injection systems will require a Watts series 009 or approved equivalent Reduced Pressure Zone Backflow Assembly.

12.7.3 Low Voltage Field Wire

14 gauge, C.S.A. approved insulated wire for direct burial.

12.7.4 Irrigation Controller

Must be C.S.A. approved.

Electric controller is required. Where power is not available for the controller a battery operated controller shall be used and connected to a control tubing valve with manual override to operate each zone.

12.7.5 Electric Solenoid Valves

Toro valve or approved equivalent. To be used as recommended by the manufacturer.

12.7.6 Sprinkler Heads

Toro products or approved equivalent. To be used as recommended by the manufacturer.

In narrow planting areas drip system irrigation is required to reduce water runoff onto outlying areas.

Lawn pop up and shrub head sprinklers are used in larger planting areas.

12.8 IRRIGATION INSTALLATION**12.8.1** Backflow Prevention

A backflow prevention device must be provided at the point of connection to the potable water system and be accessible for maintenance. The device must meet or exceed local and provincial codes governing such a cross connection. All exposed pipe and fittings shall be galvanized or copper. Type and size shall be as per plan.

The location of the backflow preventer is critical and must be in accordance with the plans and the installation details.

12.8.2 Control Equipment

Installation of all automatic valves and controllers shall comply with the manufacturer's recommendations and the local electrical codes or approved equal.

12.8.3 Sprinkler Heads, Valve Boxes, Drains

All sprinkler heads should be mounted on a swing joint equal in size to the sprinkler head inlet. A non-solvent lubricant such as Teflon tape must be used on all threaded fittings.

When circulating sprinkler heads, only compatible sprinklers with common precipitation rate should be joined at the same circuit.

12.8.4 Excavation

For residential and small commercial installations the minimum depth of cover for piping is 200 mm.

For large turf installation the minimum depth of cover shall be:

450 mm for piping up to 100 mm in diameter

600 mm for piping over 100 mm in diameter

On existing sodded areas, sod shall be removed, preserved and replaced once backfilling is accomplished.

Backfill material shall be free from rocks, large stones and other unsuitable materials which could damage the pipe or create unusual setline problems. The contractor must ensure that all existing underground utilities are located prior to construction.

12.8.5 Inspection

Prior to backfilling, all irrigation systems must be inspected and approved by the Developer's Engineer and the Town Parks inspector. Any deficiencies discovered during the inspection shall be rectified by the developer's contractor and re-inspected.

12.9 PLANT MAINTENANCE

The Developer is responsible for maintenance of all plant material within the subdivision until the one year maintenance period expires. Any plant material that is not in good health and vigour during the maintenance period must be replaced with new material as per the original specification at the developers cost. All plantings are to be maintained in a healthy growing condition. During the maintenance period, required maintenance shall include watering, weeding, pruning, and treatment for disease and pests. All developed grass areas shall be mowed, aerated, top dressed,

fertilized, limed and reseeded as required by the Director of Parks, Recreation and Culture. All planting beds shall have all weeds removed at least once per month during the growing season, by hand-pulling or hoeing. Trees and shrubs are to be deep watered as often as required to ensure that no stress occurs to the plants during hot weather. (As often as twice per week in hot weather).

12.10 PAVING

12.10.1 Concrete Unit Paving

All concrete unit pavers shall be uniform in material, colour, size and from one manufacturer. Granular base course and sand laying course particle size shall be to industry standard. Depth of base course shall be appropriate to intended vehicle/pedestrian use. Paving installation shall be true to grade, location, layout and pattern as per plans.

12.10.2 Exposed Aggregate Paving

Concrete mixes, reinforcing steel, concrete additives and base material must meet specifications listed in this manual. Exposed aggregate paving shall be mixed into concrete, not seeded. Loosened material shall be washed, not sandblasted from concrete. Loosened material and the wash slurry must be intercepted prior to entering municipal storm drain system. Any material or slurry entering the municipal storm system will be cleaned out by the contractor at the developers' expense. The aggregate shall be at an even depth for paving surface. Paving installation shall be true to grade, location, layout and pattern as per plans.