Agricultural Land Commission
201 – 4940 Canada Way
Burnaby, British Columbia V5G 4K6
Tel: 604 660-7000
Fax: 604 660-7033
www.alc.gov.bc.ca

March 10, 2020

ALC File: 51725

Gerry Mazzei
DELIVERED ELECTRONICALLY

Dear Gerry Mazzei:

Re: Application 51725 to exclude land from the Agricultural Land Reserve

Please find attached the Reasons for Decision of the Executive Committee for the above noted application (Resolution #109/2020). As agent, it is your responsibility to notify the applicant(s) accordingly.

Request for Reconsideration of a Decision

Under section 33(1) of the ALCA, a person affected by a decision (e.g. the applicant) may submit a request for reconsideration. A request for reconsideration may be submitted in writing to the e-mail address below.

Please direct further correspondence with respect to this application to ALC.SouthCoast@gov.bc.ca.

Yours truly,

Nicole Mak, Land Use Planner

Enclosure: Reasons for Decision (Resolution #109/2020)
Schedule A: Decision Map
Schedule B: ALC Landscape Buffer Specifications, 1998
Schedule C: BC Ministry of Agriculture's Guide to Edge Planning (Promoting Compatibility Along Agricultural – Urban Edges), 2015
Schedule D: Sample Irrevocable Letter of Credit

cc: Township of Langley (File: 14-07-0035)
John Shewfelt of Miller Thomson LLP (Applicants' legal representative)

AGRICULTURAL LAND COMMISSION FILE 51725

REASONS FOR DECISION OF THE EXECUTIVE COMMITTEE

Exclusion Application Submitted Under s. 30(1) of the *Agricultural Land Commission Act*

Applicants:	Cornerstone Training Stables Inc. Costep Enterprises Ltd., Inc. No. BC1085178 Barry Duellious McCall & Delaine Marie McCall Brian Kennedy Woodley & Marilyn Kathleen Woodley Taralee Anne Murphy Frances Lorraine Blackall 0774606 BC Ltd., Inc. No. 0774606 Kang Hyung Baik & Jung Hee Baik
Agent:	Gerry Mazzei
Properties:	**Property 1:** Parcel Identifier: 002-459-914 Legal Description: Lot 3, Section 7, Township 14, New Westminster District Plan 2492 Civic: 5670- 264th Street, Langley, BC Area: 1.82 ha Owner(s): Cornerstone Training Stables Inc. **Property 2:** Parcel Identifier: 012-734-063 Legal Description: Lot 11 (Except Part Dedicated Road), Section 7, Township 14, New Westminster District Plan 2492 Civic: 5625- 268th Street, Langley, BC

Area: 1.38 ha

Owner(s): Costep Enterprises Ltd., Inc.
No. BC1085178

Property 3:

Parcel Identifier: 012-734-071

Legal Description: Lot 12 (Except Part Dedicated Road), Section 7, Township 14, New Westminster District Plan 2492

Civic: 26713- 56th Avenue, Langley, BC

Area: 1.90 ha

Owner(s): Barry Duellious McCall and Delaine Marie McCall

Property 4:

Parcel Identifier: 012-734-080

Legal Description: Lot 13, Section 7, Township 14, New Westminster District Plan 2492

Civic: 26695- 56th Avenue, Langley, BC

Area: 1.92 ha

Owner(s): Brian Kennedy Woodley and Marilyn Kathleen Woodley

Property 5:

Parcel Identifier: 001-619-811

Legal Description: Lot 14, Section 7, Township 14, New Westminster District Plan 2492

Civic: 26601- 56th Avenue, Langley, BC

Area: 1.92 ha

Owner(s): Taralee Ann Murphy

Property 6:

Parcel Identifier: 012-734-098

Legal Description: Lot 15, Section 7, Township 14, New

Westminster District Plan 2492
Civic: 26575- 56th Avenue, Langley, BC
Area: 1.92 ha
Owner(s): Frances Lorraine Blackall

Property 7:
Lot Identifier: 012-734-101
Legal Description: Lot 16, Section 7, Township 14, New Westminster District Plan 2492
Civic: 26473- 56th Avenue, Langley, BC
Area: 1.93 ha
Owner(s): 0774606 BC Ltd., Inc. No. 0774606

Property 8:
Lot Identifier: 003-370-623
Legal Description: Lot 4 (Except Part Dedicated Road), Section 7, Township 14, New Westminster District Plan 2492
Civic: 26477- 56th Avenue, Langley, BC
Area: 1.78 ha
Owner(s): Kang Hyung Baik and Jung (Joseph) Hee Baik

Executive Committee: Gerry Zimmermann, Acting Chair and Okanagan Panel Chair
Ione Smith, South Coast Panel Chair
Linda Michaluk, Island Panel Chair
Janice Tapp, North Panel Chair
Richard Mumford, Interior Panel Chair

OVERVIEW

[1] The Properties are located within the Agricultural Land Reserve (the "ALR") as defined in s. 1 of the *Agricultural Land Commission Act* (the "ALCA").

[2] Pursuant to s. 30(1) of the ALCA, the Applicants are applying to the Agricultural Land Commission (the "Commission") to exclude eight properties, totalling 14.58 ha, from the ALR for the purpose of industrial development (the "Proposal").

[3] The first issue the Executive Committee considered is whether the Properties are capable and suitable for agriculture.

[4] The second issue the Executive Committee considered is whether exclusion of the Properties would impact adjacent ALR properties.

[5] The third issue the Executive Committee considered is whether, if exclusion were granted, it should be subject to conditions, and, if so, what those should be.

[6] The Proposal was considered in the context of the purposes of the Commission set out in s. 6 of the ALCA. These purposes are:

(a) to preserve the agricultural land reserve;
(b) to encourage farming of land within the agricultural land reserve in collaboration with other communities of interest; and,
(c) to encourage local governments, first nations, the government and its agents to enable and accommodate farm use of land within the agricultural land reserve and uses compatible with agriculture in their plans, bylaws and policies.

EVIDENTIARY RECORD

[7] The Proposal along with all other documentation before the Executive Committee from the Applicants, Agent, local government, third parties, and the Commission is collectively

referred to as the "Application". All documentation in the Application was disclosed to the Agent in advance of this decision.

[8] Commission representatives conducted a walk-around and meeting site visit on October 21, 2019 in accordance with the *ALC Policy Regarding Site Visits in Applications* (the "Site Visit"). The site visit report, prepared in accordance with the *ALC Policy Regarding Site Visits in Applications*, was certified by the Applicants' legal representative (John Shewfelt) on November 19, 2019 as accurately reflecting the observations and discussions of the Site Visit (the "Site Visit Report").

[9] On November 20, 2019, the Executive Committee conducted a meeting with the Agent, the Applicants' legal representative, and certain of the Applicants at the offices of the Commission (the "Applicant Meeting"). An applicant meeting report was prepared and was certified by John Shewfelt on December 11, 2019 as accurately reflecting the observations and discussions of the Applicant Meeting (the "Applicant Meeting Report"). The Applicant Meeting Report is titled 'New Reconsideration Meeting Report' in the application material.

BACKGROUND

[10] The request for exclusion of the Properties was originally refused by the Commission by Resolution #2623/2010. After subsequent events and proceedings, Madam Justice Burke of the Supreme Court of British Columbia issued an Order dated September 26, 2017 (the "Order"), which forms the basis for the proceeding presently before the Commission. Pursuant to the Order, certain members and staff of the Commission, including Chair Dyson, were not to, and did not participate in this proceeding.

EVIDENCE AND FINDINGS

[11] In considering the suitability of a parcel for agricultural use, the Commission often considers individual and cumulative impacts of any limitations on a property (if any), or limitations imposed on the property by surrounding land uses. With respect to the Properties under application, the Executive Committee found there to be cumulative impacts from

individual variables that it considered germane to its deliberation.

[12] This section sets out the findings of the Executive Committee, or where specified of the majority of the Executive Committee (Commissioners Michaluk, Tapp, Mumford, and Zimmermann).

Issue 1: Whether the Properties are capable and suitable for agriculture.

Agricultural Capability

[13] To assess agricultural capability on the Properties, the Executive Committee referred in part to agricultural capability ratings. The ratings are identified using the BC Land Inventory (BCLI), 'Land Capability Classification for Agriculture in B.C.' system. The improved agricultural capability ratings applicable to the Properties are Class 2, 3, and 4, more specifically approximately 20% (60% Class 3DT and 40% Class 3DW) and 80% (50% Class 3T, 30% Class 2T, and 20% Class 3DW).

Class 2 - land is capable of producing a wide range of crops. Minor restrictions of soil or climate may reduce capability but pose no major difficulties in management.

Class 3 - land is capable of producing a fairly wide range of crops under good management practices. Soil and/or climate limitations are somewhat restrictive.

Class 4 - land is capable of a restricted range of crops. Soil and climate conditions require special management considerations.

The limiting subclasses associated with this lot of land are D (undesirable soil structure), T (topographic limitations), and W (excess water).

[14] In addition, the Executive Committee received three professional Agrologist's reports and two Agrologist report reviews, prepared by:

- Regency Consultants Ltd (Bob Holtby), dated December 22, 2010 (the "Holtby Opinion");

- Whiskey Jack Land Management Corp, dated September 30, 2015 (the "Whiskey Jack Report");
- C&F Land Resource Consultants Ltd, dated December 14, 2018 commissioned by the Commission (the "C&F Report");
- C&F Land Resource Consultants Ltd, dated December 17, 2018 which provides a review of the Holtby Opinion; and
- C&F Land Resource Consultants Ltd, dated December 17, 2018 which provides a review of the Whiskey Jack Report.

[15] While the C&F Report indicates that 5.22 ha (35.8%) of the Properties have an improved agricultural capability rating of Class 3, and 1.44 ha (9.9%) have an improved rating of Class 4, it concludes that 7.92 ha of the Properties (54.3%) is unclassified anthropogenic filled sites, buildings, and curtilage. The Whiskey Jack Report also concludes that major sections of the Properties have imported fill material. According to the C&F Report, the fill material was generally low in organic matter, and included some foreign non-soil materials including bricks, concrete, and other non-soil materials; therefore, limiting the potential for soil bound agricultural use of filled areas. The C&F Report also indicates that the low-lying areas of the Properties have shallow topsoil over glacio-marine till subsoils which are difficult to drain even with the use of tile drainage systems.

[16] Based on the agricultural capability ratings and the C&F Report, the Executive Committee finds that the Properties have mixed prime and secondary agricultural capability and that the Properties are limited by excess water.

Lot Size

[17] The Properties range in size from 1.3 ha to 1.9 ha. With respect to the Properties, the Executive Committee finds that the size of the Properties alone is not an impediment to their use for agriculture. Small lots generally have value for uses such as small lot agriculture (soil bound or non-soil bound), and can be used for both subsistence and commercial agriculture provided that there are no extenuating factors that would impede the use of that land for agriculture now or in future.

Traffic

[18] The Properties are located on the north side of 56th Avenue between Highway 13 and 268th Street in the Township of Langley. 56th Avenue is a major east-west four-lane arterial road near an intersection with access to Highway 1. At the Site Visit, the Commission representatives observed the consistent volume of traffic along 56th Avenue and considered the impact the traffic may have on using the Properties for agriculture. The majority of the Executive Committee finds that the impact of traffic on 56th Avenue would pose an impediment to movement of farm machinery and vehicles, which limits the feasibility of the Properties to be used for agriculture generally.

Drainage

[19] The C&F Report indicates that, in 2007, the Township of Langley upgraded 56th Avenue and 268th Street to install concrete curbs, gutters, sidewalks, and buried storm sewers. At the time, the existing road ditches fronting the Properties were closed, and a connection to the municipal storm sewer was provided to each property fronting 56th Avenue.

[20] At the Site Visit, certain of the Applicants explained the drainage issues of the Properties which included natural presence of clay soils in some areas, and increase discharge of storm water from development (i.e. mushroom facility to the north) resulting in areas of standing water. Applicant Barry McCall also explained that he previously had animals (cattle and sheep) on his property but they were removed due to wet soil conditions that caused hoof rot. Some of the Applicants discussed measures undertaken to address the drainage issues including installation of tile drainage, surface drainage ditches, and placement of fill that were unsuccessful.

[21] Based on discussions with the Applicants present at the Site Visit and Applicant Meeting, the Executive Committee understands that fill has been placed on some of the Properties in order to address issues of inundation, as well as for some other non-farm reasons. The Executive Committee notes that some properties received over 1000 loads of fill. While the C&F Report concludes that the extensive placement of fill on the Properties has impeded normal farm practices including drainage, it further states that drainage would be difficult to

improve in these areas without using ditching, which could be hazardous to farm equipment. The Executive Committee does not accept degradation of land by fill placement as an acceptable rationale to exclude land from the ALR. However, the Executive Committee does acknowledge that the fill described in the C&F Report has diminished the agricultural capability of the Properties.

Summary

[22] While the Executive Committee finds that any one of the variables applicable to the Properties (i.e. agricultural capability, lot size, traffic, drainage) is not insurmountable on its own, in this case, the majority of the Executive Committee finds that when considered on the whole, the restrictions have a substantial cumulative impact on the Properties' capability and suitability for agriculture. The majority of the Executive Committee finds that the size of the Properties, in combination with the drainage limitations, and access challenges restricts the use of the Properties for soil bound or non-soil bound agriculture.

Issue 2: Whether exclusion of the Properties would impact adjacent ALR properties.

[23] The Executive Committee considered the potential impacts of exclusion and future industrial development of the Properties on adjacent ALR properties located to the north and west.

[24] Noting the drainage issues presented in this application, the Executive Committee is concerned with the drainage impacts on adjacent ALR lands. However, the majority of the Executive Committee finds that their concern regarding the drainage impacts on adjacent ALR lands can be addressed through the development of a drainage plan for the industrial development, similar to Resolution #377/2015 (the "Surrey Approval"), to ensure there are no adverse impacts related to drainage on adjacent ALR lands.

[25] Further, if the Properties are excluded for industrial purposes, industrial development that is undertaken would be immediately beside lands that remain in the ALR. The Executive Committee finds that a fence, constructed in accordance with Schedule D.6 of the *ALC Landscape Buffer Specifications,* 1998 (Schedule B), along the new ALR

boundary (north of the Properties), as shown in Schedule A (Decision Map), and vegetative buffering and setbacks (as discussed in the next subheading) will create important separation between adjacent agricultural and industrial uses.

Issue 3: Whether, if exclusion were granted, it should be subject to conditions, and, if so, what those should be.

[26] Exclusion of the Properties from the ALR could have certain impacts contrary to the purposes of the Commission set out in s.6 of the ALCA. However, the majority of the Executive Committee finds, in this case, the cumulative impacts affecting the Properties' capability and suitability for agriculture, on balance, outweighs the benefits of retaining the lands in the ALR, subject to certain conditions.

[27] The majority of the Executive Committee finds that certain conditions of exclusion of the Properties would be appropriate. The conditions are as follows:

a. **Properties dealt with together** – the majority of the Executive Committee requires that all of the Properties be removed from the ALR at the same time to create a continuous ALR boundary;
b. **Fence Construction** – Before exclusion of the Properties from the ALR, either:
    I. A chain link fence must be constructed along the new northern ALR boundary, as shown in Schedule A, in accordance with the specifications set out in *Schedule D.6 of the ALC Landscape Buffer Specifications,* 1998 (Schedule B) (the "Schedule B specifications") (the "Fence Construction"); or
    II. If the Fence Construction is deferred, financial security in the form of an Irrevocable Letter of Credit (ILOC) (Schedule D) made payable to the Minister of Finance c/o the Agricultural Land Commission must be posted in the amount of a quote (also to be submitted to the Commission, at or before the time the security is posted) for the Fence Construction. The ILOC shall be returned once the Fence Construction is completed;
        i. For greater clarity, some or all of the ILOC will be forfeited upon failure to comply with the any or all aspects of condition B contained herein;

c. **Vegetative Buffer and Setbacks** – Before exclusion of the Properties from the ALR:

   I. a plan must be submitted to the Commission, that is acceptable to the Commission, that addresses vegetative buffering and setbacks on the Properties, as shown in Schedule A, to the extent necessary for buffering in accordance the BC Ministry of Agriculture's Guide to Edge Planning (Schedule C) for Level 2 Urban-side Non-Residential Setback & Buffer (page 22) (the "Vegetative Buffer and Setback Construction"); and

   II. either:

      i. a vegetative buffer and setbacks in accordance with the plan referred to in (c)(I) must be in place; or

      ii. if the Vegetative Buffer and Setback Construction is deferred, a financial security in the form of an ILOC (Schedule D) made payable to the Minister of Finance c/o the Agricultural Land Commission must be posted in the amount of a quote (also to be submitted to the Commission, at or before the time the security is posted) for the Vegetative Buffer and Setback Construction. The ILOC shall be returned once the Vegetative Buffer and Setback Construction is completed;

         a. For greater clarity, some or all of the ILOC will be forfeited upon failure to comply with the any or all aspects of condition C contained herein;

d. **Covenant** – Before exclusion of the Properties from the ALR, a covenant must be registered against the title of the Properties in favour of the Commission, for the purpose of ensuring the maintenance of the chain-link fence described in Condition B, and the maintenance of the vegetative buffer and setbacks in Condition C, in accordance with Conditions B and C; and

e. **Drainage** – Before exclusion of the Properties from the ALR, develop a plan, acceptable to the Township of Langley, that, upon development of the Properties, ensures there are no adverse impacts to drainage on adjacent ALR properties.

[28] The majority of the Executive Committee recommends working with Commission staff and the Township of Langley prior to finalizing the vegetative buffer and setback plan for the Commission's review and the drainage plan for the Township of Langley's review.

DECISION

[29] For the reasons given above, the majority of the Executive Committee approves the Proposal to exclude the eight properties (totalling 14.58 ha) from the ALR, subject to the conditions set out in paragraph 27 above.

[30] The Commission will advise the Registrar of Land Titles that the Properties have been excluded from the ALR when it has received confirmation that the conditions of approval have been met.

[31] This decision does not relieve the owner or occupier of the responsibility to comply with applicable Acts, regulations, bylaws of the local government, and decisions and orders of any person or body having jurisdiction over the land under an enactment.

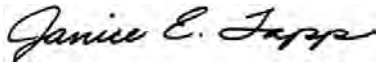
[32] This is a decision of the majority of the Executive Committee.

[33] A decision of the Executive Committee is a decision of the Commission pursuant to s. 11.1(5) of the ALCA.

[34] Resolution #109/2020
Released on March 10, 2020

Gerry Zimmermann, Acting Chair and Okanagan Panel Chair

Linda Michaluk, Island Panel Chair



Janice Tapp, North Panel Chair

Richard Mumford, Interior Panel Chair

DISSENTING VOTE

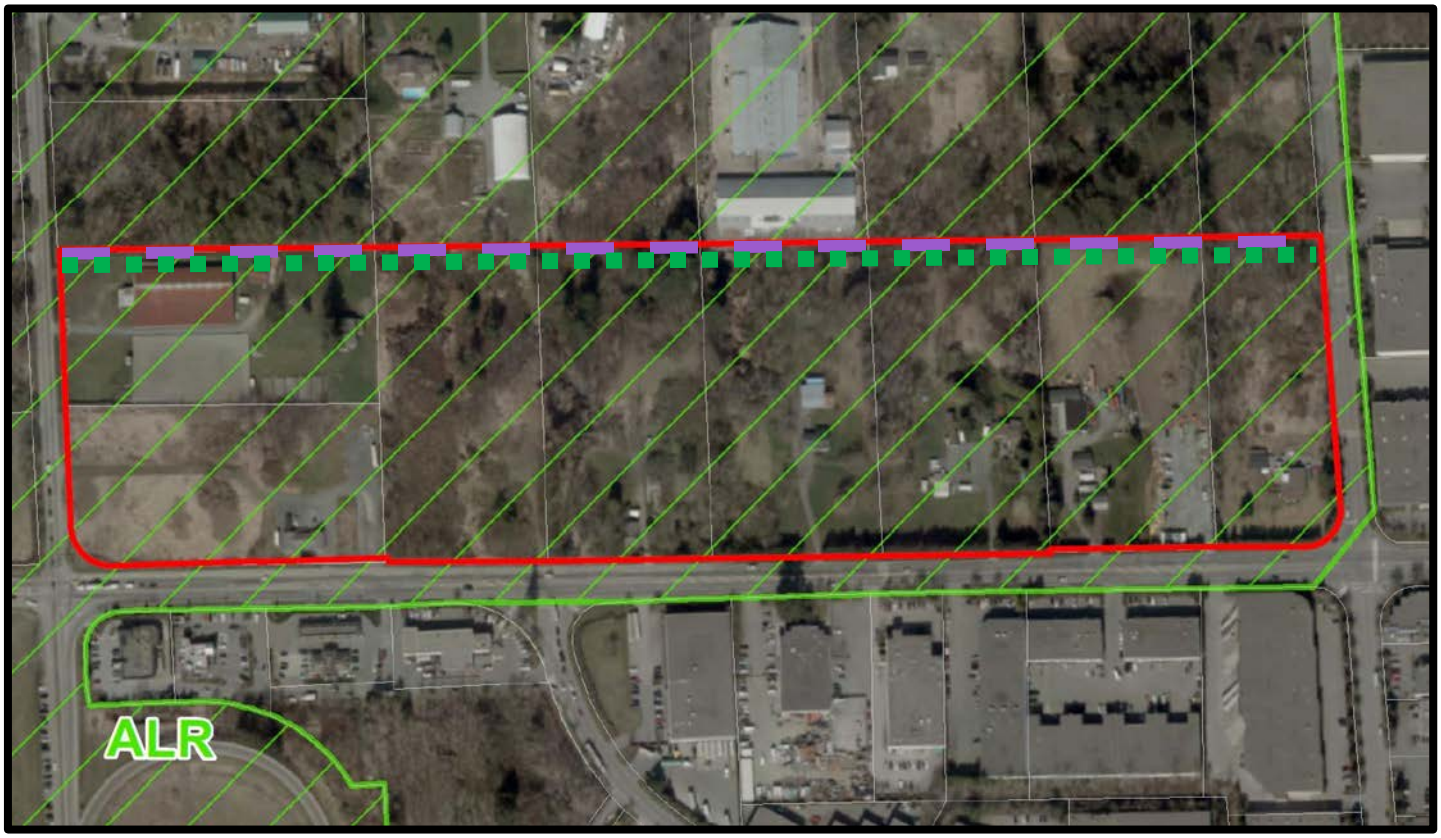
[35] The reasons for which I do not support exclusion of the Properties from the ALR, even with conditions are:

- Small ALR lots adjacent to busy arterial roads are not uncommon in the South Coast region;
- The limitations that the Applicants put forward, notably excessive moisture, are not unique to the Properties and are common throughout the South Coast region; and
- The placement of fill does not preclude the use of land for non-soil bound agriculture.

These are my reasons.

Ione Smith, South Coast Panel Chair

Schedule A: Agricultural Land Commission Decision Map
ALC File 51725 (McCall)
Conditionally Approved Exclusion
ALC Resolution #109/2020



The Properties & Conditionally Approved Exclusion (approximately 14.58 ha)

Chain-Link Fence (Condition B of Resolution #109/2020)

Vegetative Buffer and Setback (Condition C of Resolution #109/2020)

Schedule B

Landscaped Buffer Specifications

Agricultural Land Commission

March 1993

Reprint: September 1998

TABLE OF CONTENTS

LANDSCAPED BUFFER SPECIFICATIONS

PART 1: INTRODUCTION

Today's increasingly complex land use patterns demand that special attention be paid to the relationship between agricultural and non-farm uses. In the past, a very simple fence and a good neighbour policy may have sufficed; however, present day realities suggest that the combination of agricultural operations and non-farm uses, most often residential uses, require special efforts be made to avoid the conflicts that many agricultural producers are concerned with. Trespass and vandalism to farm crops and equipment, complaints about early morning farm vehicle noise, the drifting of dust and sprays from field operations and smells from the application of manures and composts, are only some of the more commonly expressed concerns.

With the increasing demands being placed on a very limited land base, there will continue to be situations where there will be a hard and distinctive edge between agricultural and other uses.

In an effort to make that edge work to the advantage of the farmer and non-farming public, the Commission has developed "Landscaped Buffer Specifications" which set out a variety of buffering schedules for use in different circumstances. It is important to note that these buffer areas are intended to be established on the non-farm property rather than coming off of the farm properties.

The Commission will use the specifications, where appropriate, as a condition when considering the approval of applications under the Agricultural Land Commission Act. In addition, these specifications provide a practical guide for councils, regional boards and other agencies where the opportunity exists to create or improve the buffer between agriculture and non-agricultural lands.

This report sets out a gradation of buffers types. These range from a fairly simple minimum vegetative screen, that might apply to low impact situations, to a very comprehensive buffer that incorporates berming, fencing and planting for the screening of noise, views, dust and sprays. There is also a buffer type that allows for the combination of water features and fences for trespass prevention.

In addition, the report specifies separate schedules for plant layout and spacing, acceptable plant materials and fencing. It is anticipated that various combinations of the schedules will allow the greatest flexibility in selecting an appropriate buffer to suit the specific situation at hand.

* * * * * * * * *

LANDSCAPED BUFFER SPECIFICATIONS

PART 2: GENERAL REQUIREMENTS

1. At the discretion of the Commission, where landscaped buffer requirements are minimal, Sections 1.2 - 1.4, below, shall not be required. Instead the applicant shall submit the following information:

   a) a plan of the proposed landscaped buffer describing the existing conditions, the type and location of fencing and the location, species, sizes and quantities of new plant material.

2. At the discretion of the Commission, where landscaped buffer requirements are of a complex and extensive nature, professional consultants having expertise appropriate to the needs of each buffer shall be engaged in the planning and design of the landscape work.

3. All planning, design and construction of each landscaped buffer shall be such that all provisions of the B.C. Society of Landscape Architects (B.C.S.L.A.)/ B.C. Nursery Trades Association (B.C.N.T.A.) Landscape Standard are met.

4. A set of working documents accurately describing existing conditions and the proposed buffer design shall be provided to and approved by the B.C. Agricultural Land Commission before the commencement of construction. Working drawings shall show:

   a) existing grades;

   b) proposed grades;

   c) locations of existing plants or vegetation to be retained;

   d) locations of existing plants or vegetation to be removed;

   e) locations of existing and proposed features (i.e. buildings, fencing etc.) and utilities;

   f) depths of growing medium;

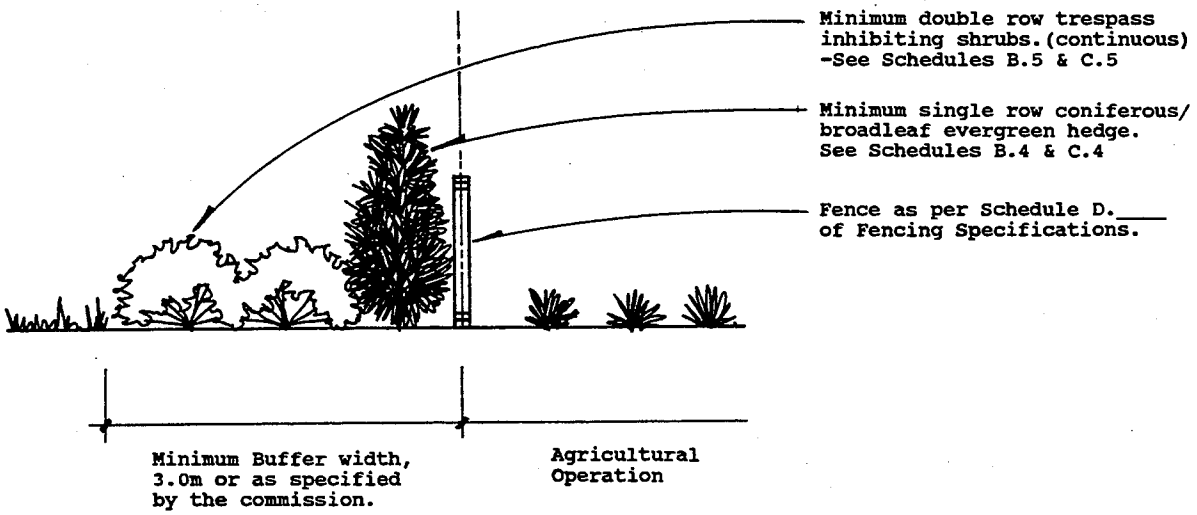
   g) locations, species, sizes and quantities of new plant material;

   h) landscape specifications.

SCHEDULE A: BUFFER TYPES

A.1: Minimum Vegetative Screen (Evergreen Hedge)

Minimum visual screening and protection of farmland from trespass and vandalism.



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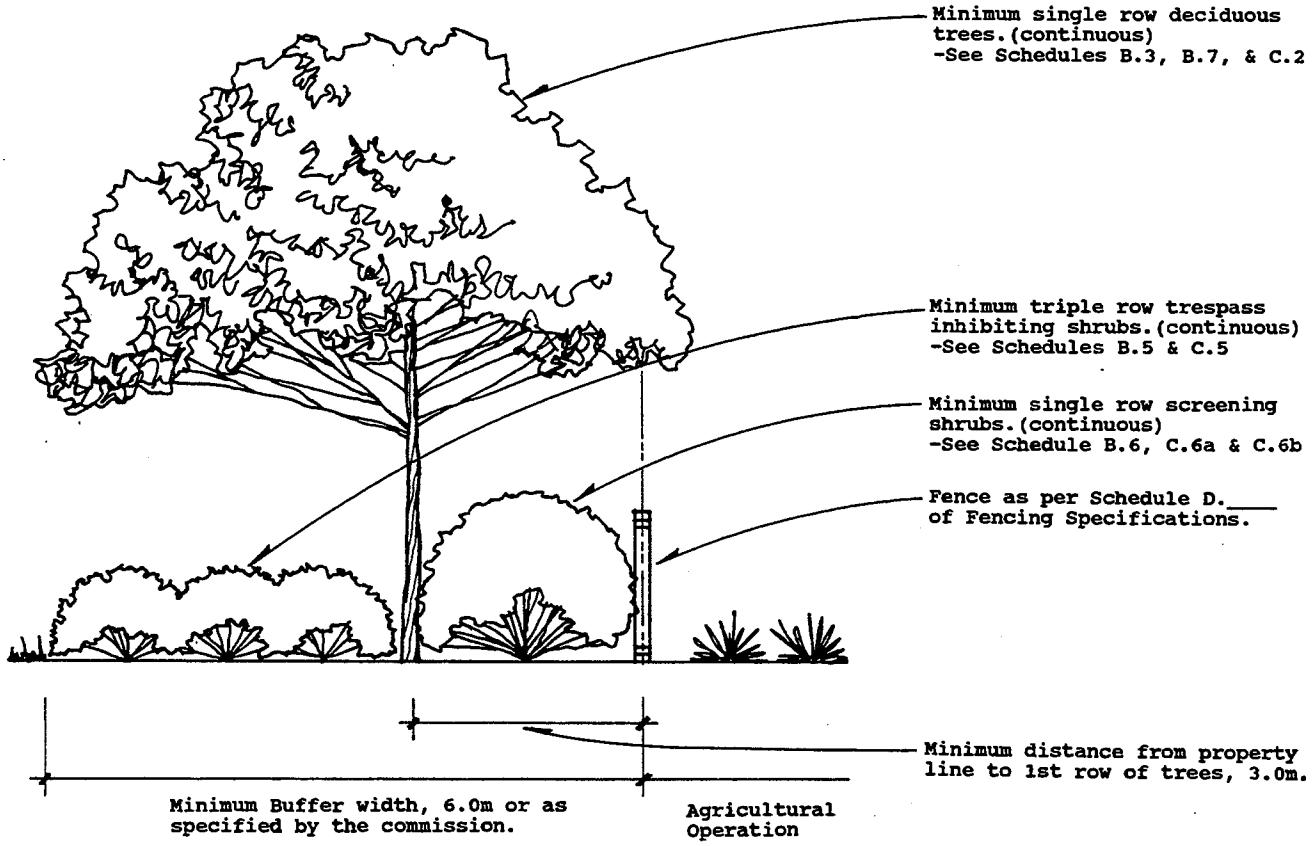
SCHEDULE A: BUFFER TYPES

A.2: Minimum Vegetative Screen (Medium Height Trees)

Inhibits trespass and vandalism while providing minimum protection to non-farm developments from the movement of dust and pesticide spray from adjacent agricultural operations.



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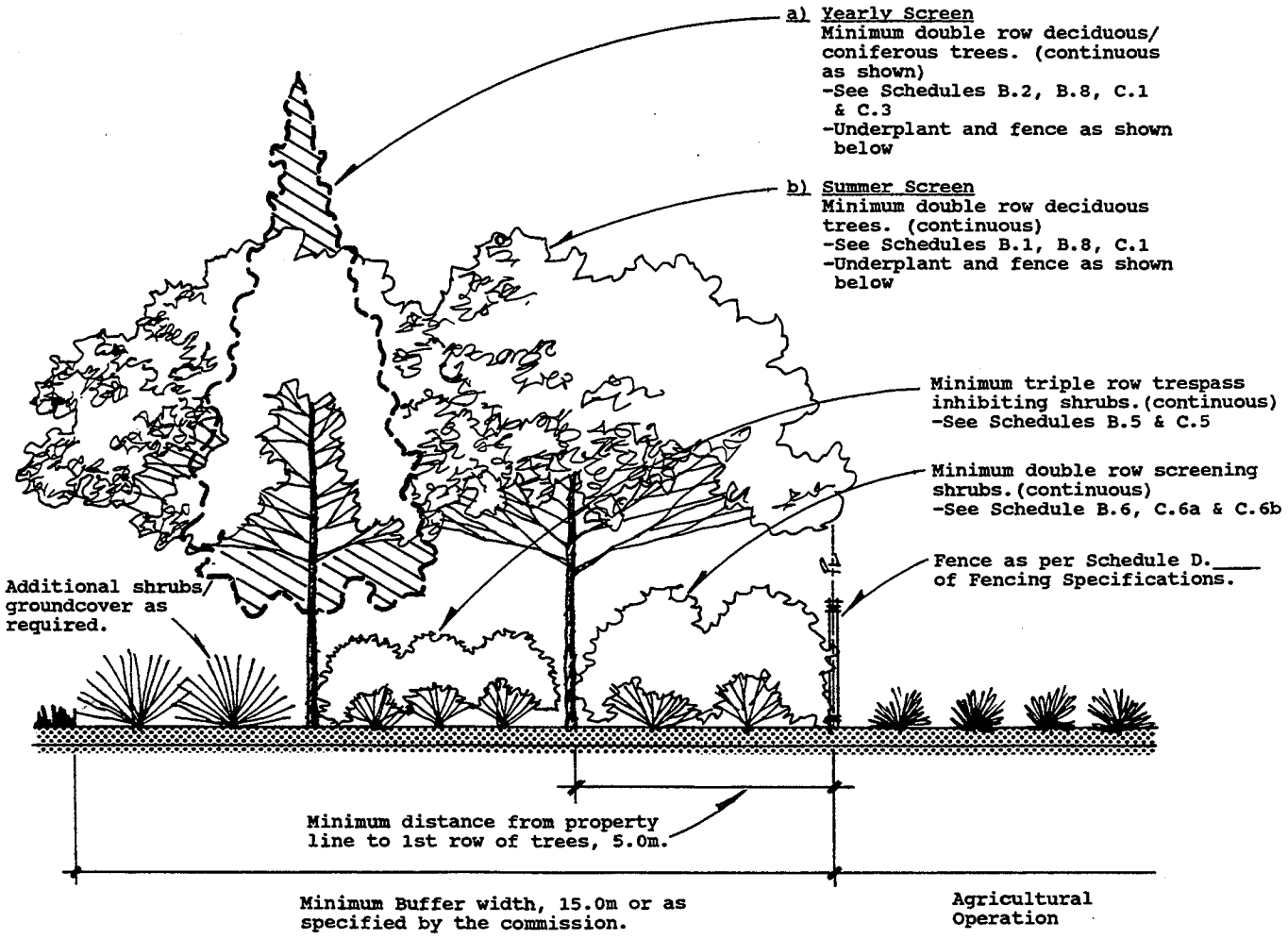
SCHEDULE A: BUFFER TYPES

A.3: Airborne Particle and Visual Screen

a) Yearly Screen

b) Summer Screen

Buffers agricultural operations from trespass and vandalism while offering a greater physical setback between potential conflicting land uses, visually screening uses from one another and minimizing the exchange of undesirable airborne particulate matter between incompatible land uses. (Note: Coniferous trees should be used in the buffer in situations where visual and particulate screening is required on a year round basis. Solution A.3a)



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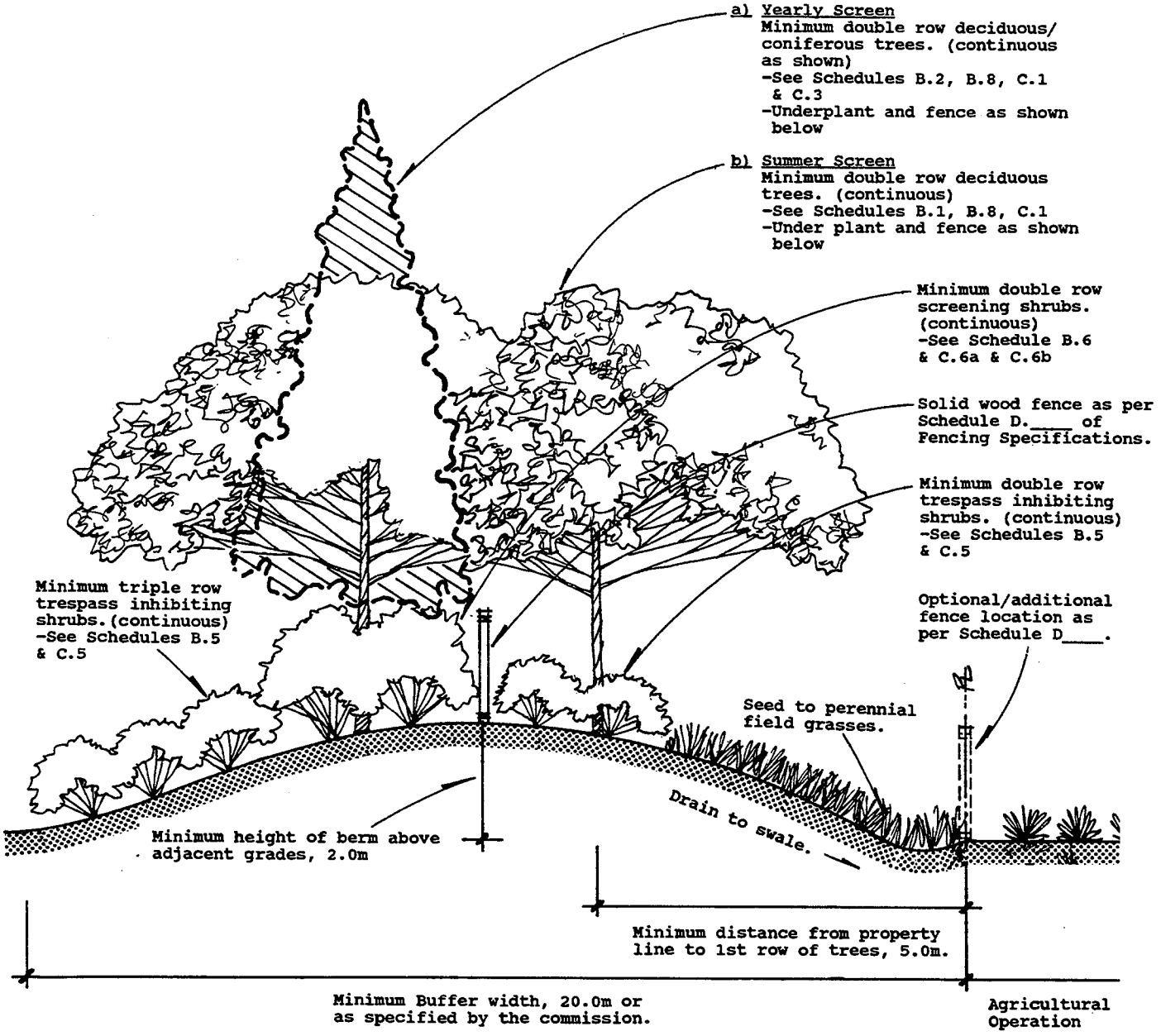
SCHEDULE A: BUFFER TYPES

A.4: Noise, Airborne Particle & Visual Screen

- **a) Yearly Screen**
- **b) Summer Screen**

To Buffer agricultural land from trespass and vandalism, visually screen incompatible uses, reduce the exchange of particulate matter between adjacent land uses and reduce the transmission of noise. (Note: Coniferous trees should be used in the buffer in situations where visual and particulate screening is required on a year round basis. Solution A.4a)



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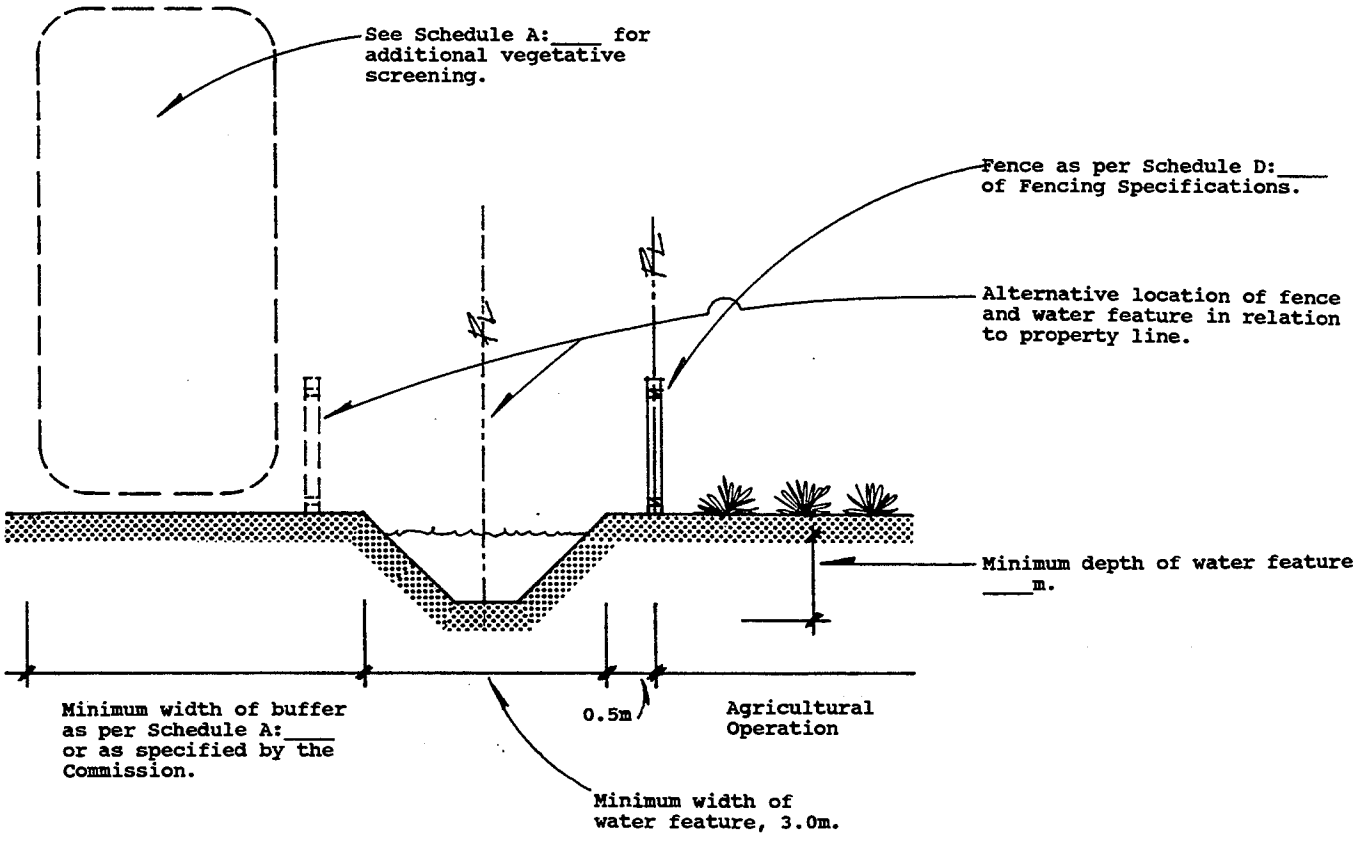
SCHEDULE A: BUFFER TYPES

A.5: Trespass Prevention (Water Feature and Fence)

For use in those situations where a water body (i.e. slough, creek, river, lake, pond or drainage ditch) exists or is planned. Trespass prevention is enhanced with incorporation of vegetative buffering as per the following diagram.



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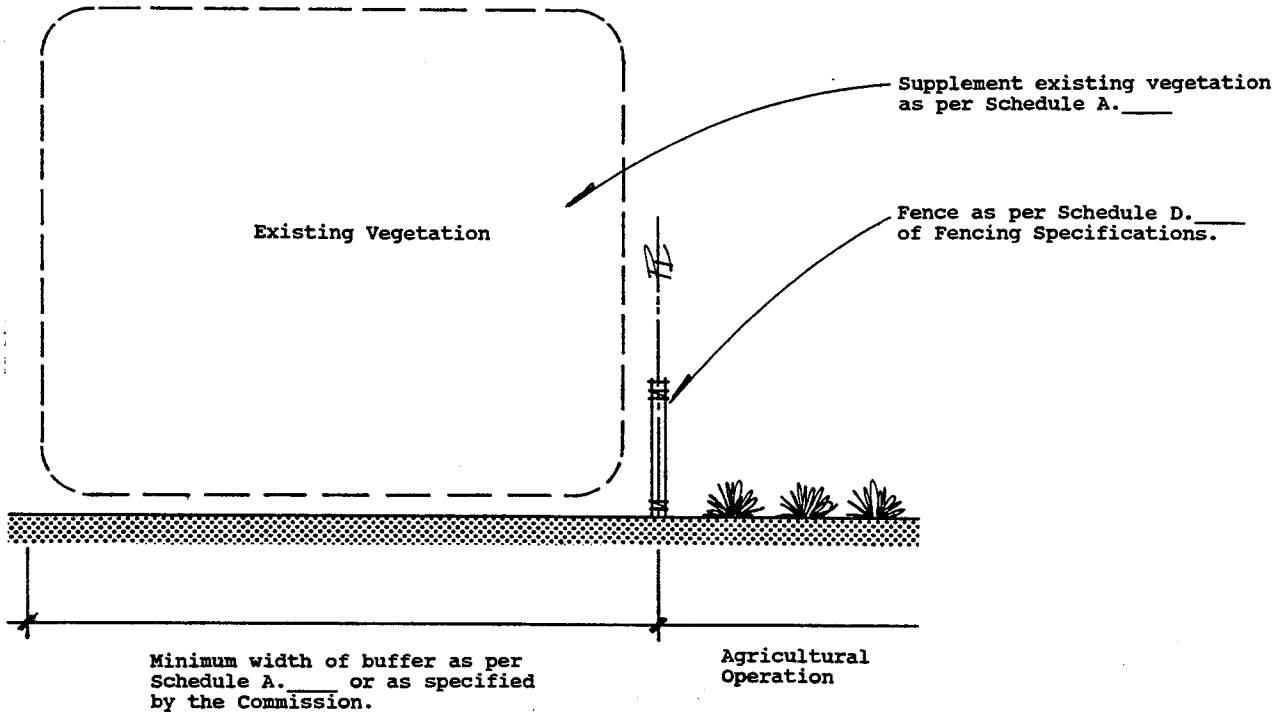
SCHEDULE A: BUFFER TYPES

A.6: Existing Vegetation Retention * (with Vegetation Supplement Option)

For use in those situations where existing vegetation is of a density and structure which will meet Commission buffering requirements. The vegetation will be protected and maintained by restrictive covenant and supplemented if required as per the following diagram.



*Note: This Specification will be accompanied by a Restrictive Covenant detailing conditions for:

a) thinning and clearing of existing vegetation
b) the width of buffer
c) locating structures, services and additional uses within the retention zone

Not to Scale

SCHEDULE B: PLANT LAYOUT, SPACING & SUPPORT

GENERAL REQUIREMENTS

1. All plant material shall be located as shown in Schedules B.1-B.6 except where obstructions overhead or below ground are encountered or as specified by the Commission.

2. Immediately following planting, to prevent excessive motion, all trees shall be braced in an upright position, using guy wires or stakes with ties, as shown in Schedules B.7 and B.8. All materials used in tree support shall meet the following specifications.

SCHEDULE B.7

2.1 All support stakes shall be equally spaced about each tree, shall be pressure treated, be standard 50 X 50mm, and a minimum of 2440mm in length.

2.2 Support stakes shall be driven vertically into the ground a minimum of 940mm and support at least 1500mm of the tree stem.

2.3 Double strand, #12 gauge galvanized wire shall be used to connect each support stake to the tree stem. Wire will be twisted to take up slack and prevent excessive motion of the tree.

2.4 12mm reinforced black rubber hose shall be used to encase support wires and prevent direct contact with the bark of the tree.

SCHEDULE B.8

2.5 Three guy wires shall be spaced equally about each tree at approximately 120 degrees between each guy. Each guy shall consist of two strands of galvanized #12 gauge wire and be attached to the tree at an angle of approximately 45 degrees at about 1/3 to 1/2 the height of the tree.

2.6 12mm reinforced black rubber hose shall be used to encase guy wires and prevent direct contact with the bark of the tree.

2.7 Each guy shall be anchored in the ground using 50 x 100 x 900mm notched stakes which have been driven into the ground at an angle so that the tops of the stakes are at least 150mm below finished grade.

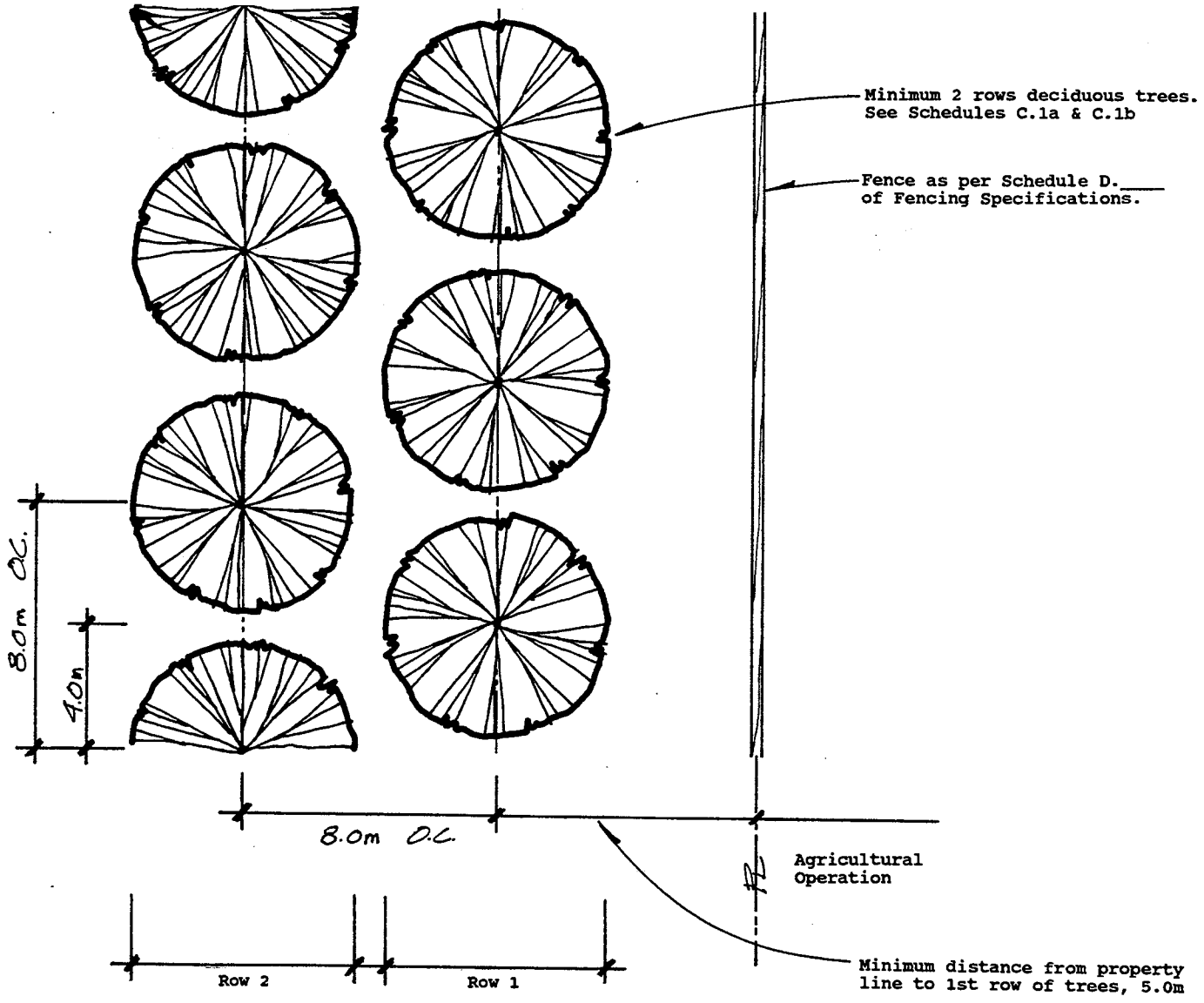
2.8 Each guy shall be made taut using 150mm turnbuckles.

2.9 Brightly coloured flagging tape shall be attached to each guy for the duration of the tree support.

3. Tree stakes and guy wires shall be removed once the trees are stable. Tree stakes and guy wires should remain for a maximum of two years.

SCHEDULE B: PLANT LAYOUT, SPACING & SUPPORT

B.1: Deciduous Tree Screen (Tall)



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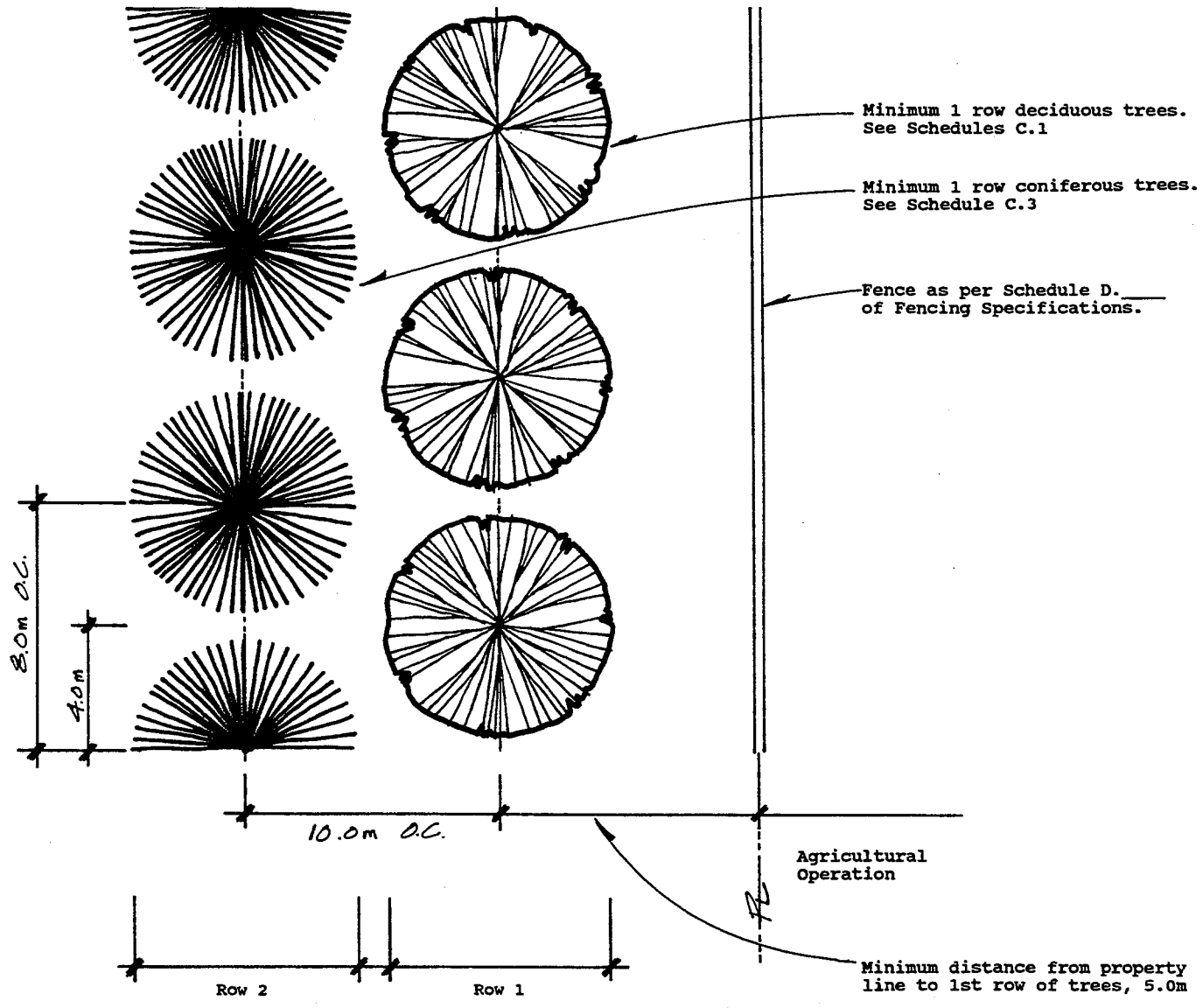
SCHEDULE B: PLANT LAYOUT, SPACING & SUPPORT

B.2: Coniferous/Deciduous Tree Screen (Tall)



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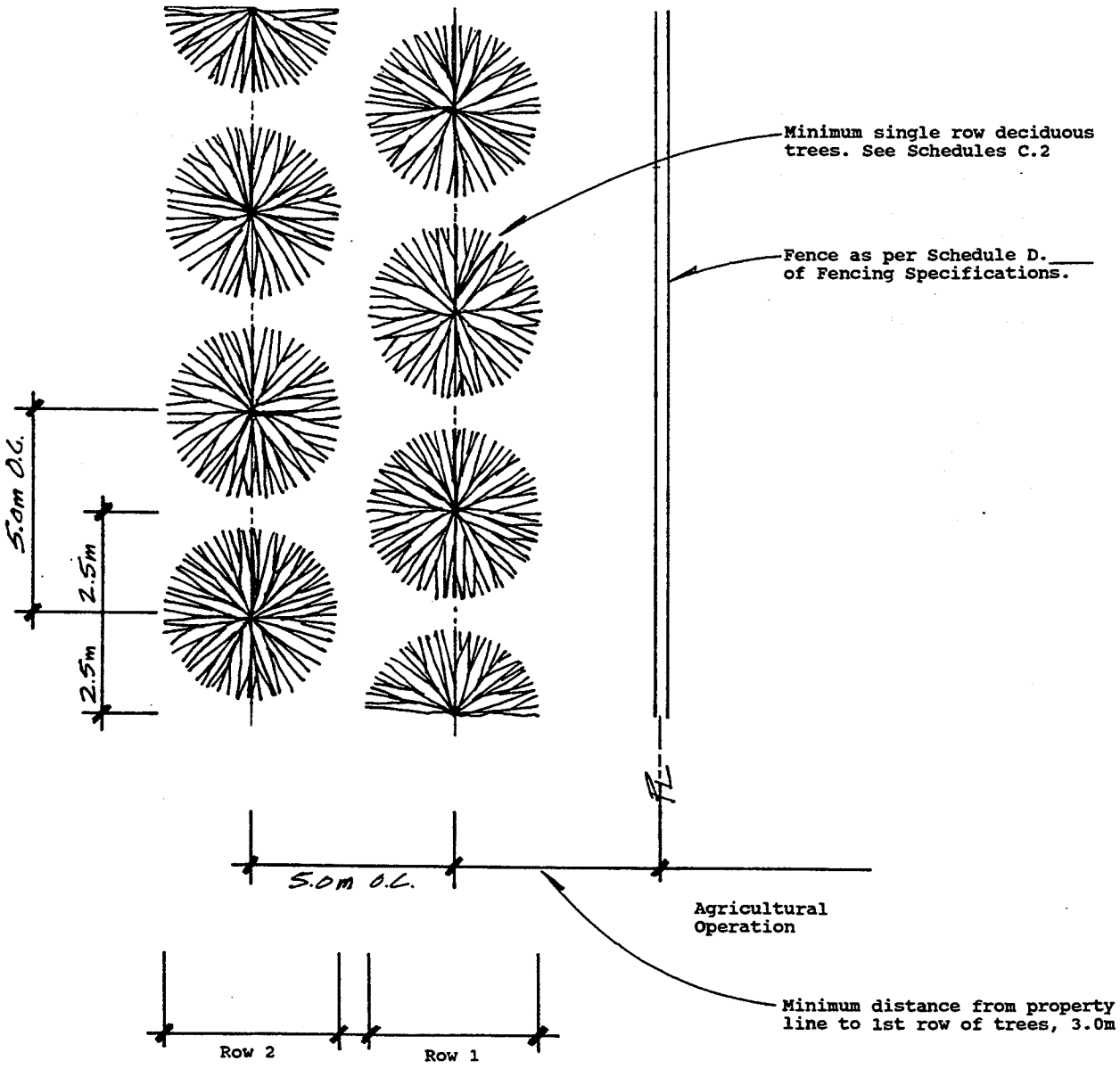
SCHEDULE B: PLANT LAYOUT, SPACING & SUPPORT

B.3: Deciduous Tree Screen (Medium Height)



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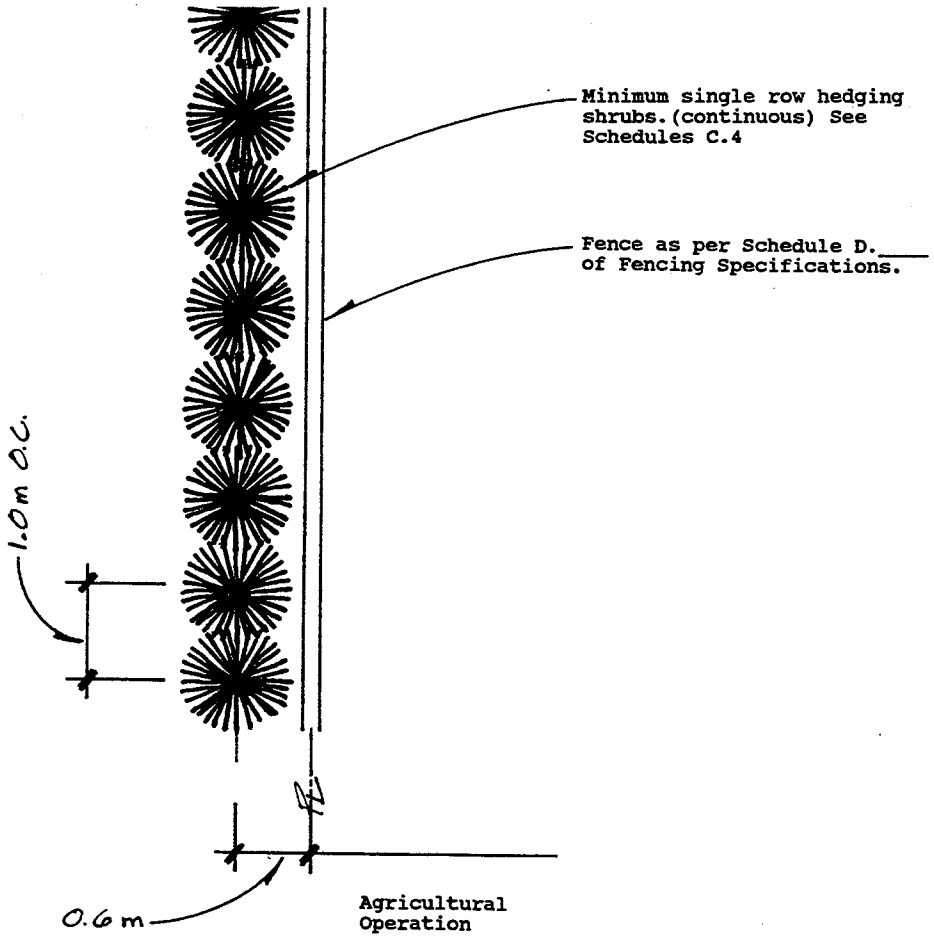
SCHEDULE B: PLANT LAYOUT, SPACING & SUPPORT

B.4: Hedging Shrubs



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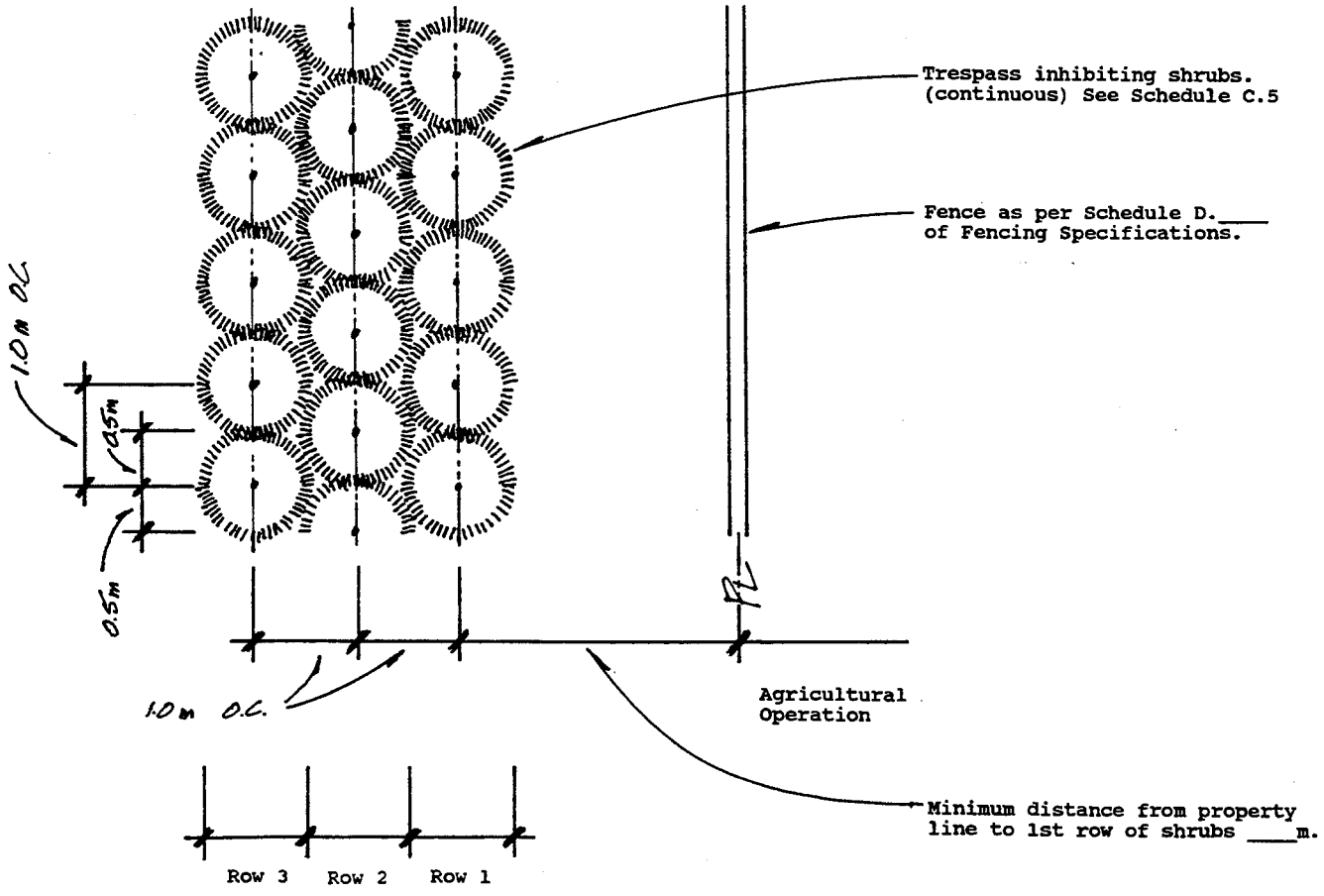
SCHEDULE B: PLANT LAYOUT, SPACING & SUPPORT

B.5: Trespass Inhibiting Shrubs



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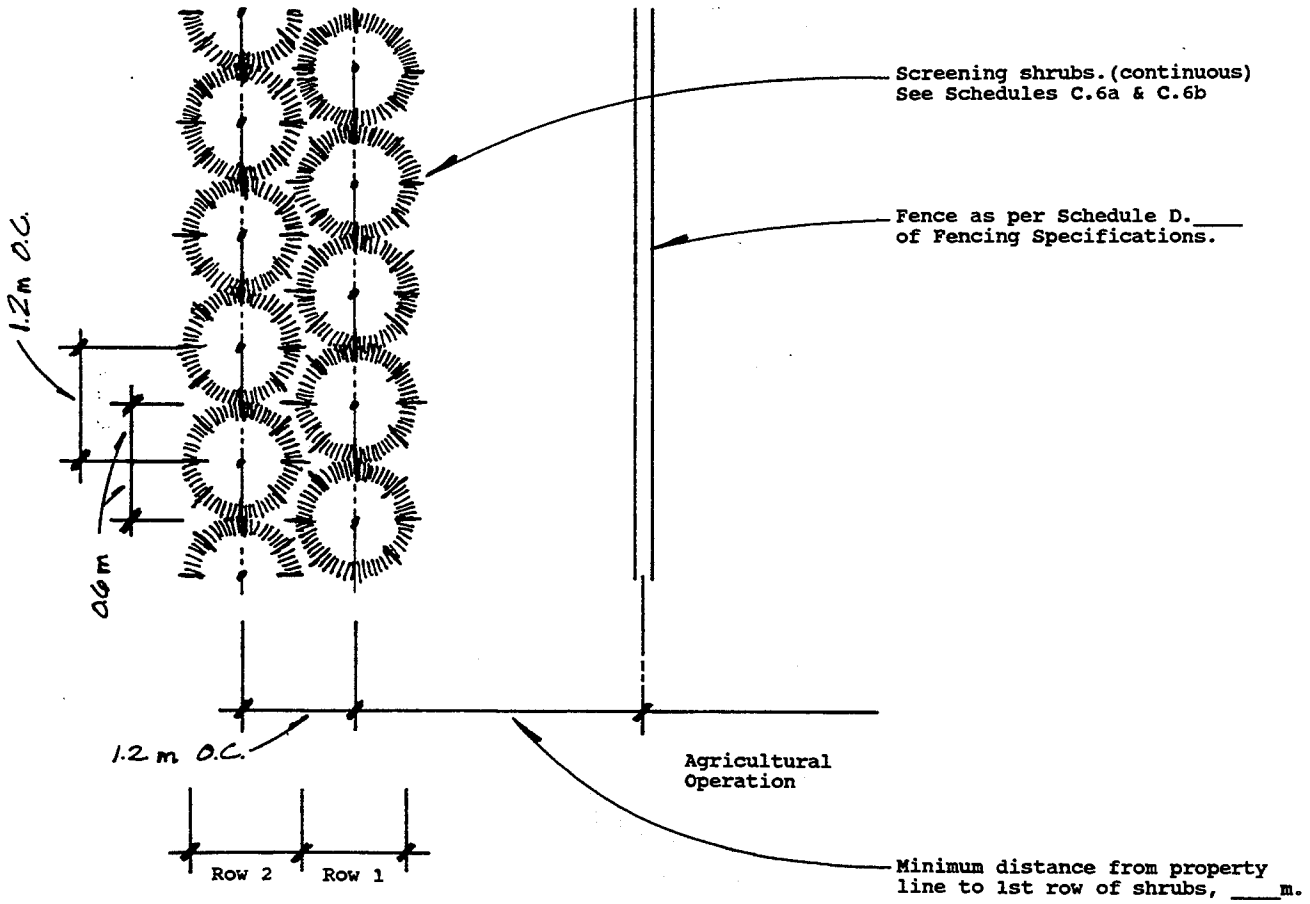
SCHEDULE B: PLANT LAYOUT, SPACING & SUPPORT

B.6: Screening Shrubs



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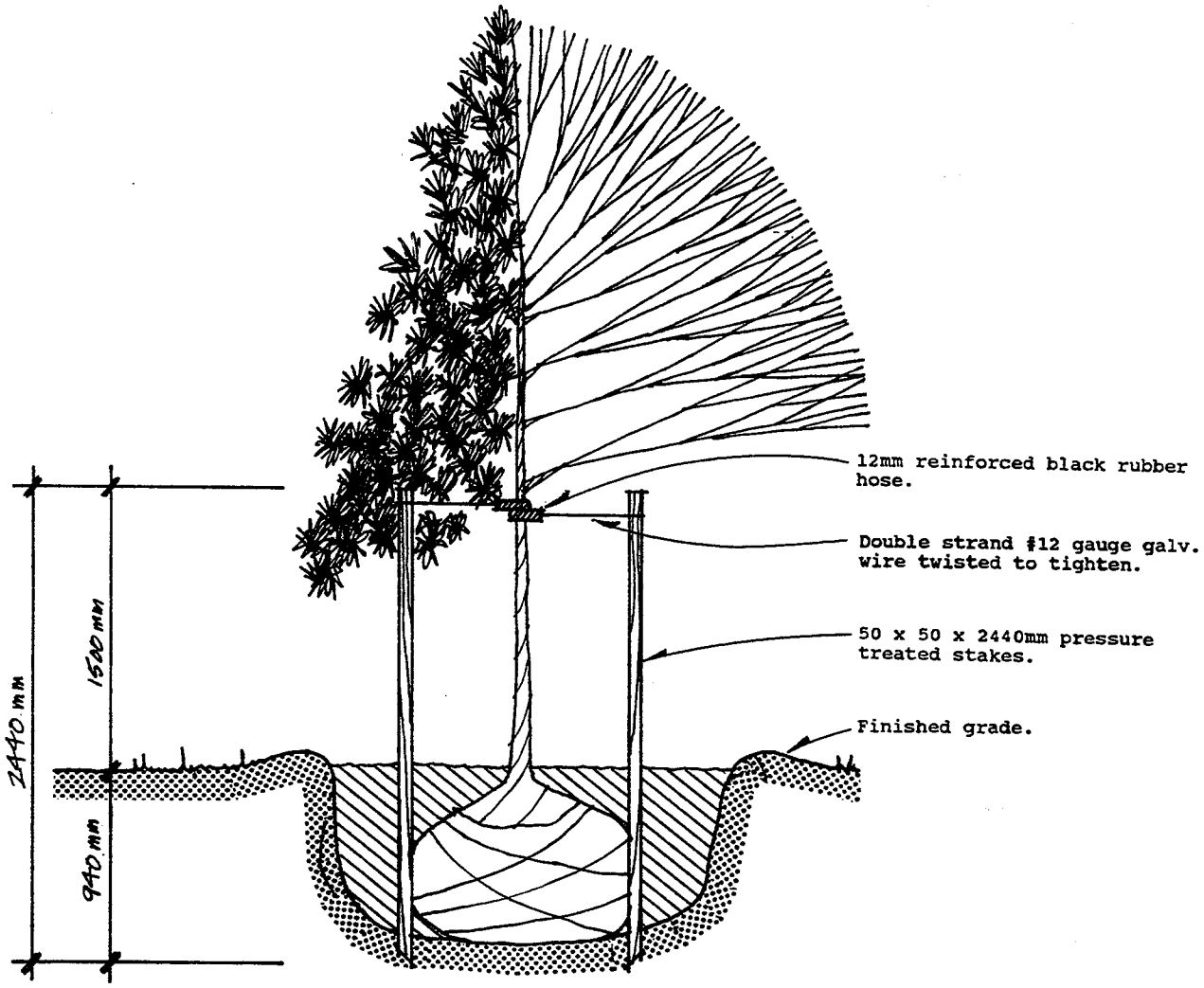
SCHEDULE B: PLANT LAYOUT, SPACING & SUPPORT

B.7: Staking for Deciduous/Coniferous Trees
(deciduous trees < 6cm caliper & conifer trees < 2.5m in height)



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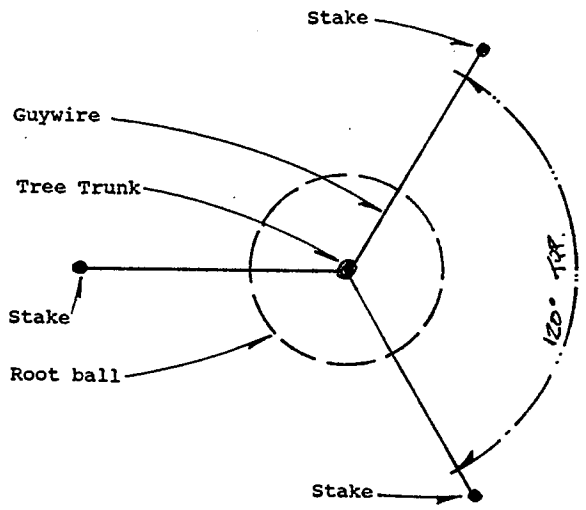
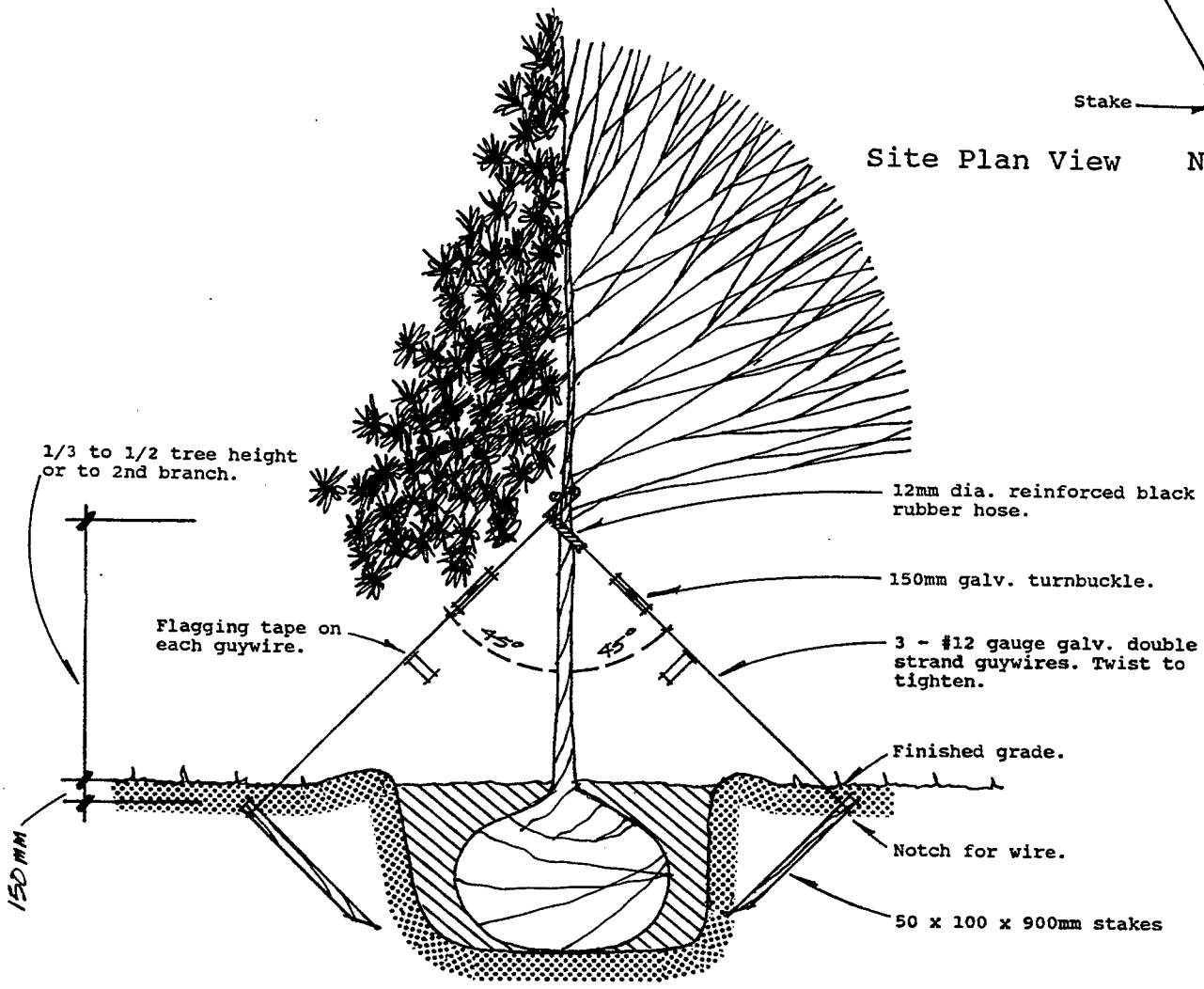
SCHEDULE B: PLANT LAYOUT, SPACING & SUPPORT

B.8: **Guying for Deciduous/Coniferous Trees**
(deciduous trees ≥ 6cm caliper & coniferous trees ≥ 2.5m in height)



Site Plan View N.T.S.



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SCHEDULE C: BUFFER PLANT MATERIAL

GENERAL REQUIREMENTS

Schedule C lists acceptable plant material to be used in the buffer landscaping. The botanical and common names along with the hardiness rating and minimum planting size are indicated for each plant listed. (See Appendix A at the back of this schedule for a location map and further explanation of plant hardiness zones.) Ultimately, the precise selection of plants from this list will depend on the local climate and site specific conditions.

Note: a) The use of plant materials, which is not included in this list, will be considered and reviewed by the Commission to determine their acceptability.

b) The Commission also encourages the use of native plant material when available and the retention of existing vegetation where practical and compatible with adjacent farming operations.

1. Schedule C indicates the minimum acceptable size for each species/variety at time of planting. Where shortages occur, smaller size plant material may be considered by the Commission.

2. All plants shall be true to name, type and form, and representative of their species/variety. Plants shall be compact and properly proportioned. Weak, thin plants are not acceptable.

3. All plants shall be healthy with well developed form and branches and with vigorous, fibrous root systems and shall be free from defects, decay, disfigured roots, sun scald injuries, abrasions of the bark, plant diseases and insect pests.

4. Trees shall have straight stems unless that would be uncharacteristic and shall be well and characteristically branched for the species/variety.

5. Root balls and soil in containers shall be free from noxious perennial weeds.

6. Maintenance procedures shall be applied to all buffer plantings on a regular basis during the growing year.

7. All planted areas shall have all weeds removed at least once per month during the growing season.

8. All planted areas shall be inspected for pests and diseases at least every two month during the growing season. Treatment for pests or diseases shall be carried out promptly.

SCHEDULE C: BUFFER PLANT MATERIAL

C.1: DECIDUOUS TREES - TALL (>15m)

BOTANICAL NAME	COMMON NAME	HARDINESS ZONE	SIZE
Acer platanoides	Norway Maple	3	7cm cal.
Crimson King'	"	"	"
'Emerald Queen'	"	"	"
'Summershade'	"	"	"
Acer pseudoplatanus	Sycamore-maple	5	7cm cal.
Acer rubrum	Red Maple	3	7cm cal.
'October Glory'	"	"	"
'Schlesinger'	"	"	"
'Shade king'	"	"	"
Acer saccharum	Sugar Maple	3	7cm cal.
Aesculus x carnea 'briotii'	Red Horse Chestnut	4	"
Cercidipyllum japonicum	Katsura Tree	4	"
Davidia involucrata	Handkerchief Tree	6	"
Fagus sylvatica 'Laciniata'	European Beech	4	"
'Purpurea'	Purple-leaved Beech	4	"
'Riversii'	" " "	4	"
Larix kaempferi	Japanese Larch	5	2.0m ht.
Larix occidentalis	Western Larch	5	2.0m ht.
Liquidamber styraciflua	Sweetgum	6	7cm cal.
'Palo Alto'	"	"	"
Liriodendron tulipifera	Tulip Tree	5	"
Magnolia kobus	Magnolia	4	"
Metasequoia glyptostroboides	Dawn Redwood	5b	2.0m ht.
Platanus x acerifolia	London Plane	5	"
Populus tremuloides	Quaking Aspen	1	"
Prunus sargentii	Sargents Cherry	4	"
Quercus palustris	Pin Oak	6	7cm cal.
Quercus rubra	Red Oak	3	"
Robinia pseudoacacia 'frisia'	Black Locust	3	"

SCHEDULE C: BUFFER PLANT MATERIAL

C.2: DECIDUOUS TREES - MEDIUM. HEIGHT (<15m)

BOTANICAL NAME	COMMON NAME	HARDINESS ZONE	SIZE
Acer campestre	Field Maple	5	5cm cal.
Acer davidii	David's Maple	6	2.0m ht.
Acer negundo	Box Elder	2	2.0m ht.
Amelanchier canadensis	Downy Serviceberry	4	2.0m ht.
Amelanchier laevis	Shadbush		2.0m ht.
Betula jacquemontii	Jacquemont Birch	7	5cm cal.
Carpinus betulus	European Hornbeam	5	5cm cal.
Cercis canadensis	Eastern Redbud	5	5cm cal.
Cornus florida	Flowering Dogwood	5	2.0m ht.
Cornus mas	Cornelian Cherry	4	2.0m ht.
Cornus nuttallii 'White Wonder'	Dogwood	4	2.0m ht
Eleagnus angustifolia	Russian Olive	2b	2.0m ht.
Fagus sylvatica	European Beech	6	5cm cal.
'Dawyckii'	Dawyck Beech	6	5cm cal.
	Golden Beech	6	5cm cal.
Halesia monticola	Mountain Silver Bell	5	5cm cal.
Magnolia dawsoniana	Dawson Magnolia	7	2.5m ht.
Magnolia sieboldii	Oyama Magnolia	7b	2.5m ht.
Magnolia X soulangiana	Saucer Magnolia	5b	2.5m ht.
Oxydendron arboreum	Sorrel Tree	5	2.0m ht.
Prunus padus	European Bird Cherry	3	6cm cal.
Prunus serrulata	Japanese Cherry	5-6	6cm cal.
Prunus subhirtella	Higan Cherry	5	6cm cal.
Prunus yedoensis 'akebono'	Daybreak Cherry	6	6cm cal.

continued

C.2: DECIDUOUS TREES - MEDIUM HEIGHT (<15m) (cont.)

BOTANICAL NAME	COMMON NAME	HARDINESS ZONE	SIZE
Rhus typhina	Staghorn Sumac	3	2.0m ht.
Sophora japonica 'Regent'	Regent Pagoda Tree	4	5cm cal.
Sorbus aucuparia 'Rosedale'	European Mountain Ash	3	5cm cal.
Stewartia pseudocamellia	Japanese Stewartia	5	5cm cal.
Styrax japonica	Japanese Snowdrop	5	5cm cal.
Tilia x Euchlora	Crimean Linden	4	5cm cal.

SCHEDULE C: BUFFER PLANT MATERIAL

C.3: CONIFEROUS TREES - TALL (>15m)

BOTANICAL NAME	COMMON NAME	HARDINESS ZONE	SIZE
Abies amabilis	Amabilis Fir	5	2.5m ht.
Abies concolor	Colorado White Fir	4	2.5m ht.
Abies pinsapo	Spanish Fir	6	2.5m ht.
Calocedrus decurrens	Incense Cedar	6	2.0m ht
Cedrus atlantica glauca	Blue Atlas	6	2.5m ht.
Cedrus deodara	Deodar Cedar	7	2.5m ht.
Chamaecyparis nootka.	Blue Nootka Cypress	4	2.5m ht.
'Glauca'			
'Lutea'	Yellow Cypress	4	2.5m ht.
Cryptomeria japonica	Japanese cryptomeria	6	2.5m ht.
Cupressocyparis leylandii	Leyland Cypress	6	2.0m ht.
Picea abies	Norway Spruce	2	2.5m ht.
Picea glauca	White Spruce	1b	2.5m ht.
Picea engelmannii	Engelmann Spruce	2	2.5m ht.
Picea pungens	Colorado Spruce	2	2.0m ht.
'koster'	Koster's Blue Spruce	2	2.0m ht.
Picea sitchensis	Sitka Spruce	6	2.0m ht.
Pinus contorta 'contorta'	Lodgepole Pine	2	2.5m ht.
Pinus nigra	Austrian Pine	4	2.5m ht.
Pinus parviflora	Japanese White Pine	4	2.5m ht.
Pinus ponderosa	Ponderosa Pine	4	2.5m ht.
Pinus strobus	White Pine	3	2.5m ht.
Pinus sylvestris	Scotch Pine	2b	2.5m ht.
Pinus thunbergii	Japanese Black Pine	5	2.5m ht.

continued

C.3: CONIFEROUS TREES - TALL (>15m) (cont.)

BOTANICAL NAME	COMMON	HARDINESS	SIZE
Pseudotsuga menziesii	Douglas Fir	4-6	2.5m ht.
Sequoia sempervirens	Coast redwood	7	2.5m ht.
Sequoiadendron giganteum	Giant Redwood	6	2.5m ht.
Thuja plicata	Western Red Cedar	5	2.5m ht.
Tsuga heterophylla	Western Hemlock	5	2.5m ht.
Tsuga mertensiana	Mountain Hemlock	4	2.0m ht.

SCHEDULE C: BUFFER PLANT MATERIAL

C.4: HEDGING/SCREENING SHRUBS (Conifers and Broadleaf Evergreens)

BOTANICAL NAME	COMMON NAME	HARDINESS	SIZE
Chamaecyparis lawsoniana 'Ellwoodii'	Ellwood Cypress	5	#5 pot
Cryptomeria japonica 'Elegans'	Plume Cryptomeria	7b	#5 pot
Cupressus macrocarpa	Monterey Cypress	7	#5 pot
Ligustrum ovalifolium	California Privet	7	#5 pot
Lonicera tartarica 'Rosea'	Tartarian Honeysuckle	2	#5 pot
Osmanthus armatus	Chinese Osmanthus	7	#5 pot
Photinia x fraseri	Photinia	7	1.0m ht.
Prunus laurocerasus	Cherry Laurel	8	1.0m ht.
Prunus laurocerasus 'Reynvaanii'	Russian Laurel	6	1.0m ht.
Prunus lusitanica	Portugal Laurel	7b	1.0m ht.
Syringa vulgaris (cult.)	French Lilac	2b	#5 pot
Taxus x media			
'Hatfieldii	Hatfield Yew	4	1.5m ht.
'Hicksii'	Hick's Yew	5	1.5m ht.
Thuja occidentalis			
'Aureospicata'	Cedar	3	1.5m ht.
'Brandon'	Cedar	2	1.5m ht.
'Fastigiata	Pyramidal Cedar	3	1.5m ht.
Tsuga canadensis	Eastern Hemlock	4	1.5m ht.
Viburnum tinus 'Robustum'	Laurustinus	7	#5 pot

SCHEDULE C: BUFFER PLANT MATERIAL

C.5: TRESPASS INHIBITING SHRUBS

BOTANICAL NAME	COMMON NAME	HARDINESS ZONE	SIZE
Berberis x chenaultii	Chenault Barberry	6	#5 pot
Berberis darwinii	Darwin's Barberry	7	#5 pot
" julianae	Wintergreen Barberry	6b	#5 pot
Chaenomeles speciosa	Flowering Quince	5b	#5 pot
Elaeagnus pungens 'Maculata'	Thorny Elaeagnus	7b	#5 pot
Ilex aquifolium	English Holly	7	#5 pot
Ilex aquifolium 'San Gabriel'	"	6	#5 pot
Mahonia aquifolium	Oregon Grape	5	#5 pot
Mahonia x 'Charity'		7	#5 pot
Osmanthus armatus	Chinese Osmanthus	7	#5 pot
Pyracantha coccinea 'Kasan'	Firethorn	6	#5 pot
Pyracantha fortuneana 'Cherri Berri"	"	6	#5 pot
Pyracantha x 'Mohave'	"	6	#5 pot
Pyracantha x 'O.	"	5	#5 pot
Rosa acicularis	Prickly Rose	1	#2 pot
Rosa sp.	Shrub Roses	2-3	#2 pot
Yucca filamentosa	Adam's Needle	4	#5 pot
Yucca glauca	Spanish Bayonet	3	#5 pot

SCHEDULE C: BUFFER PLANT MATERIAL

C.6a: SHRUBS FOR SCREENING (DECIDUOUS)

BOTANICAL NAME	COMMON NAME	HARDINESS	SIZE
Amelanchier alnifolia	Saskatoonberry	1	#5 pot
Caragana arborescens	Siberian Peashrub	2	#5 pot
Clethra alnifolia	Summersweet	5	#2 pot
Cornus stolonifera	Red Osier Dogwood	1b	#2 pot
Cornus alba	Tartarian Dogwood	2	#2 pot
Cotinus coggygria 'Royal Purple'	Smoke Tree	5	#5 pot
Cotoneaster acutifolius	Peking Cotoneaster	2	#1 pot
Elaeagnus commutata	Silver Berry	2	#5 pot
Euonymus alata	Winged Burning Bush	3	#5 pot
Hippophae rhamnoides	Sea Buckthorn	2b	#5 pot
Hydrangea paniculata 'Grandiflora'	P.G. Hydrangea	3b	#5 pot
Kolkwitzia amabilis	Beauty Bush	5b	#5 pot
Lonicera korolkowii zabelli	Zabel's Honeysuckle	2	#2 pot
Lonicera maackii	Amur Honeysuckle	2b	#2 pot
Lonicera tartarica 'Rosea'	Tartarian Honeysuckle	2	#2 pot
Philadelphus x virginalis	Mock Orange	3b	#2 pot
Prunus tomentosa	Manchu Cherry	2	#2 pot
Prunus triloba 'Multiplex'	Chinese Flowering	2b	#2 pot
Syringa vulgaris (cult.)	French Lilac	2b	#5pot
Viburnum x burkwoodii	Burkwood Viburnum	5	#5 pot

C.6a: SHRUBS FOR SCREENING (DECIDUOUS) (cont.)

BOTANICAL NAME	COMMON NAME	HARDINESS	SIZE
Viburnum cassinoides	Witherod	2b	#5 pot
Viburnum dentatum	Arrow Wood	4	#5 pot
Viburnum opulus 'Roseum'	Common Snowball	2b	#5 pot
Weigelia x 'Centennial'	Weigelia	2	#5 pot

SCHEDULE C: BUFFER PLANT MATERIAL

C.6b: SHRUBS FOR SCREENING (BROADLEAF EVERGREENS)

BOTANICAL NAME	COMMON NAME	HARDINESS	SIZE
Arbutus unedo	Strawberry Tree	8b	#5 pot
Camellia japonica (var.)	Camellia	8b	#5 pot
Choisya ternata	Mexican Orange Blossom	8	#5 pot
Elaeagnus x ebbingei	Silver Berry	7	#5 pot
Elaeagnus pungens 'Maculata'	Thorny Elaeagnus	7b	#5 pot
Escallonia rubra	Escallonia	8b	#5 pot
Ligustrum japonicum	Japanese Privet	8b	#2 pot
Photinia x fraseri	Photinia	7	#5 pot
Pieris japonica	Japanese Andromeda	5b	#5 pot
Prunus laurocerasus	Cherry Laurel	8	#5 pot
'Reynvaanii'	Russian Laurel	6	#5 pot
Prunus lusitanica	Portugal Laurel	7b	#5 pot
Rhododendron varieties w/ mature ht. >1.5m	Rhododendron	4-5	#7 pot
Viburnum tinus 'Robustum'	Laurustinus	8	#5 pot

SCHEDULE C: BUFFER PLANT MATERIAL

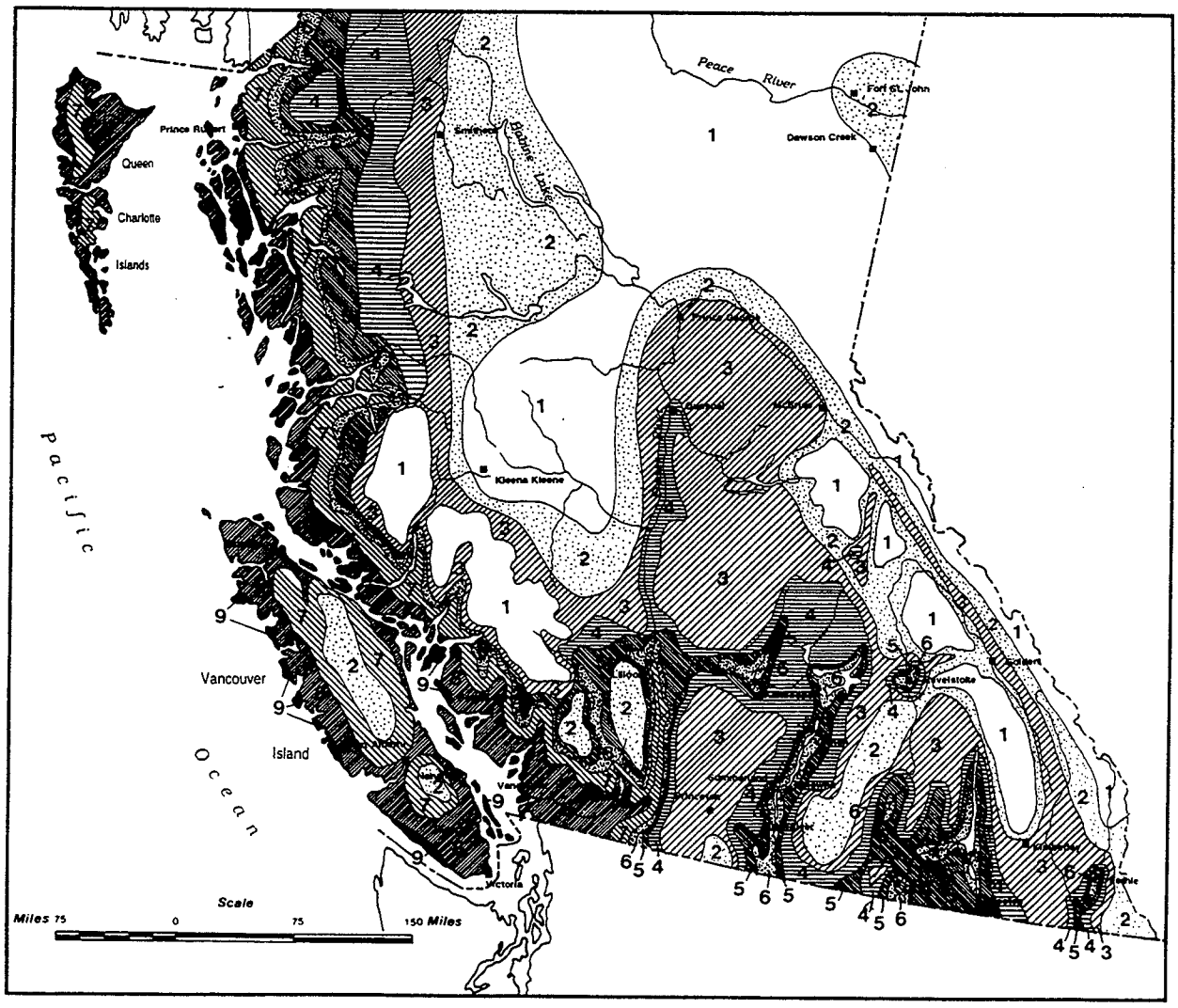
APPENDIX A: MAP OF PLANT HARDINESS ZONES IN B.C.

(Source: Canada Dept. of Agriculture, 1967)

"...The map is based on a formula that takes into consideration several meteorological factors affecting the hardiness of a plant in a given location. The most important element in plant survival is the minimum temperature during the winter. Other importatant considerations are the length of the frost-free period, summer rainfall, maximum temperatures, snow cover and wind.

The hardiness areas have been divided into 10 zones. The one marked 0 is the coldest. Other zones are progressively milder, to 9, which is the mildest. A given zone on this map corresponds only approximately to a zone of the same number in the United States Department of Agriculture Plant Hardiness Zone Map, which has been in use in Canada for a number of years. This present map, however, presents more detail for Canada. Each zone has been subdivided into a light and dark section to represent, respectively, the milder and colder portions of the zone.

...Small areas with peculiar microclimates often exist within a zone. These areas are colder or milder than the surrounding area. They are usually too small to locate on the hardiness map or they may not have been recorded. In addition, sharp changes in elevation, as found in mmountainous or hilly regions, cause a difference in climate that cannot be accurately indicated on the map. The user should also remember that the zone lines are arbitrarily drawn and that the zones merge gradually into each other. Consequently, conditions near the border of one zone may closely approximate those of an adjacent zone."



SCHEDULE D: FENCING SPECIFICATIONS

D.1: SOLID WOOD FENCE

1. All posts and rails shall be rough sawn of "No. 1 Structural" grade, pressure treated with a wood preservative non-toxic to surrounding plant material, in accordance with CSA Standard 080.2 and compatible with staining requirements below. Stain to match fence boards.

2. All fence boards and planks shall be rough sawn of "Quality Fencing" grade, finished with penetrating stain with preservative, conforming to CGSB Standards 1-GP145M and 204M, applied to all surfaces prior to installation and on any cuts thereafter.

3. Line posts shall be minimum 8.0 ft. in length and at least (standard) 4"x 4".

4. Corner posts shall be minimum 8.0 ft. in length and at least (standard) 6"x 6".

5. Fence rails (min. 3) shall be maximum 7.5 ft. in length and at least (standard) 2"x 4".

6. Cap rails shall be at least (standard) 2"x 6". Cant to drain.

7. The finished height of opaque fencing shall be at least 6.0 ft.

8. All nails used in fence construction shall meet the following specifications:

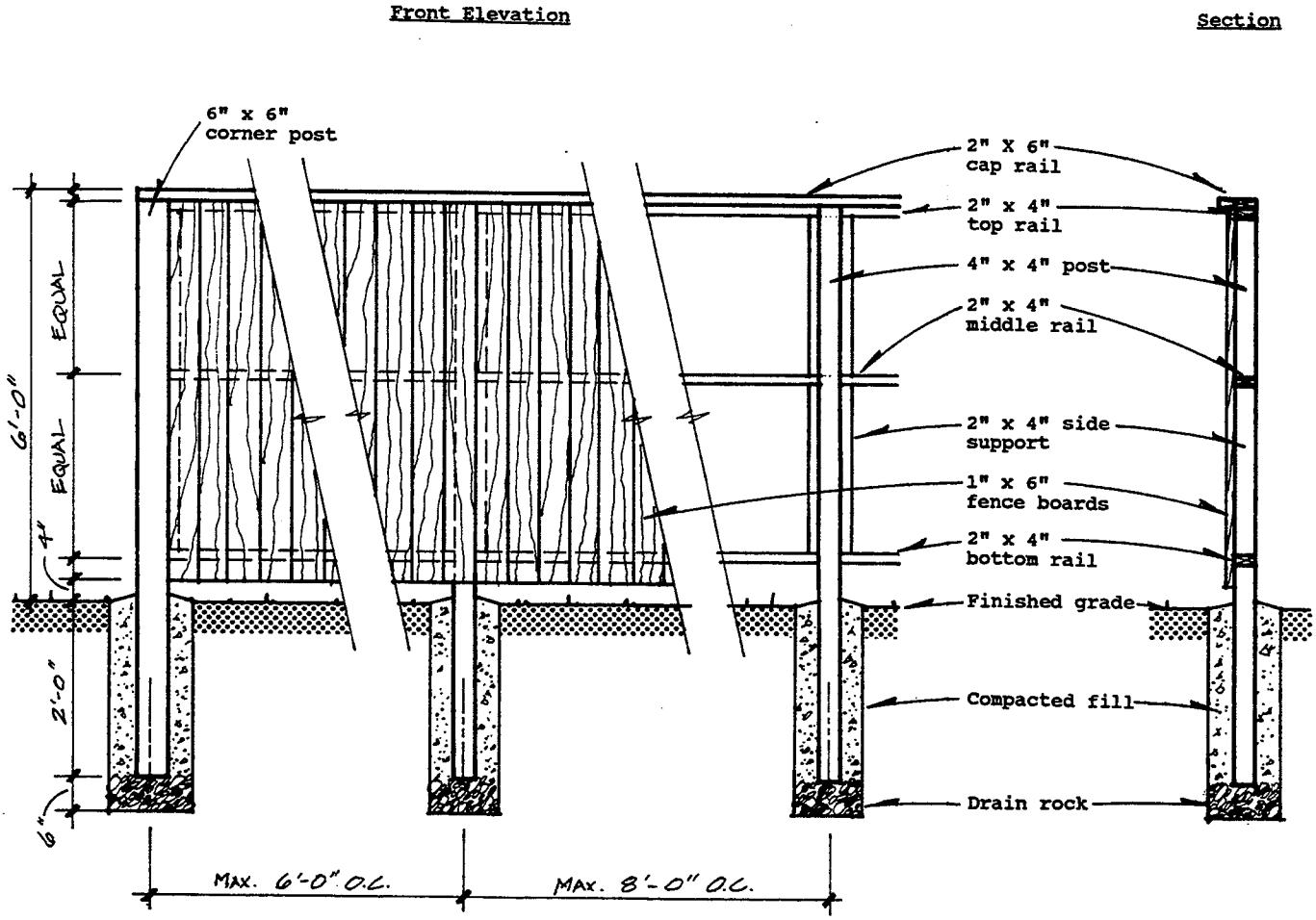
   8.1 Minimum gauge of nails used - #9, common in post/rail connections
   8.2 Minimum gauge of nails used - #11.5, common in rail/fence board connections
   8.3 Galvanized - CSA G164

9. Line posts shall be placed no more than 8.0 ft. O.C. and be firmly anchored in the soil to a depth of not less than 2.0 ft.

10. The fence shall be constructed in accordance with these specifications and details provided in the Schedule D.1 drawings which forms part of these specification.

SCHEDULE D: FENCING SPECIFICATIONS

D.1: Solid Wood Fence



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SCHEDULE D: FENCING SPECIFICATIONS

D.2: SOLID WOOD FENCE WITH ONE STRAND BARBED WIRE

1. All posts and rails shall be rough sawn of "No. 1 Structural" grade, pressure treated with a wood preservative non-toxic to surrounding plant material, in accordance with CSA Standard 080.2 and compatible with staining requirements below. Stain to match fence boards.

2. All fence boards and planks shall be rough sawn of "Quality Fencing" grade, finished with penetrating stain with preservative, conforming to CGSB Standards 1-GP145M and 204M, applied to all surfaces prior to installation and on any cuts thereafter.

3. Line posts shall be minimum 10.0 ft. in length and at least (standard) 4"x 4".

4. Corner posts shall be minimum 10.0 ft. in length and at least (standard) 6"x 6".

5. Fence rails (min. 3) shall be maximum 7.5 ft. in length and at least (standard) 2"x 4".

6. Cap rails shall be maximum 7.5 ft in length and at least (standard) 2"x 6". Cant to drain.

7. The finished height of opaque fencing shall be at least 6.0 ft.

8. The barbed wire shall meet the following specifications:
   - 8.1 Number of wire strands - 2
   - 8.2 Minimum wire gauge - 12.5 A.W.G.
   - 8.3 Maximum spacing between barbs - 6"
   - 8.4 Number of points per barb - 4

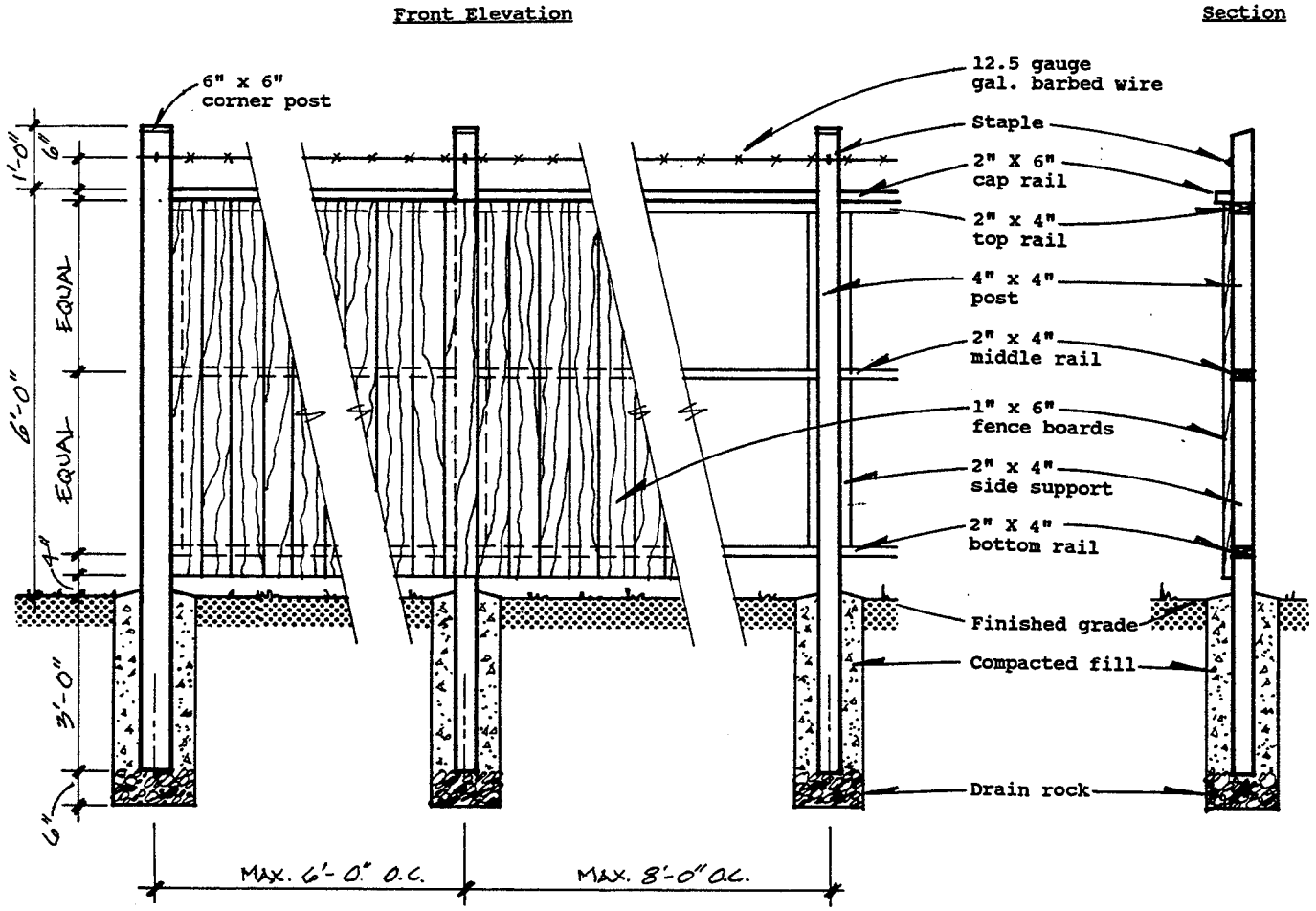
9. Fastening materials (nails and staples)shall meet the following specifications:
   - 9.1 Minimum gauge of nails used - #9, common in post/rail connections
   - 9.2 Minimum gauge of nails used - #11.5, common in rail/fence board connections
   - 9.3 Minimum wire gauge of staple - 9.0 A.W.G.
   - 9.4 Minimum length of staple - 2"
   - 9.5 Galvanized - CSA G164

10. Line posts shall be placed no more than 8.0 ft. O.C. and be firmly anchored in the soil to a depth of not less than 3.0 ft.

11. The fence shall be constructed in accordance with these specifications and details provided in the Schedule D.1 drawing which forms part of these specification.

SCHEDULE D: FENCING SPECIFICATIONS

D.2: Solid Wood Fence with One Strand Barbed Wire



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SCHEDULE D: FENCING SPECIFICATIONS

D.3: STANDARD BARBED WIRE FENCE

1. All posts and brace poles shall be pressure treated in accordance with CSA Standard 080.5 using woodpreservative non-toxic to surrounding plant material.

2. Line posts shall be 7.0 ft. in length and 3" - 4" in diameter.

3. Corner and brace posts shall be 7.0 ft. in length and 4" - 5" in diameter.

4. Bracing poles shall be 3" - 4" in diameter.

5. All line and corner posts shall be machine pointed to permit driving of posts.

6. Barbed wire shall meet the following specifications:
   - 6.1 Number of strands - 2
   - 6.2 Minimum wire gauge - 12.5 A.W.G.
   - 6.3 Maximum spacing between barbs - 6"
   - 6.4 Number of points per barb - 4
   - 6.5 Galvanized - CSA G164

7. Straining wire shall meet the following specifications:
   - 7.1 Number of strands - 2
   - 7.2 Minimum wire gauge - 9.75 A.W.G.
   - 7.3 Galvanized - CSA G164

8. The staples used in fence construction shall meet the following specifications:
   - 8.1 Minimum wire gauge - 9.0 A.W.G
   - 8.2 Minimum length - 2"
   - 8.3 Galvanized - CSA G164

9. Line posts shall be placed no more than 20.0 ft. apart and be firmly anchored in the soil to a depth of not less than 30".

10. Corner brace assemblies shall be constructed as shown in the Schedule D.3 drawings.

11. Intermediate brace assemblies shall be constructed as indicated in the Schedule D.3 drawings and spaced as required by terrain or every 1320.0 ft. maximum.

12. Barbed wire spacing - (starting from ground), five wires spaced 10", 8", 8", 8", 8" (top wire 42" above ground level), (see Schedule D.3 drawings)

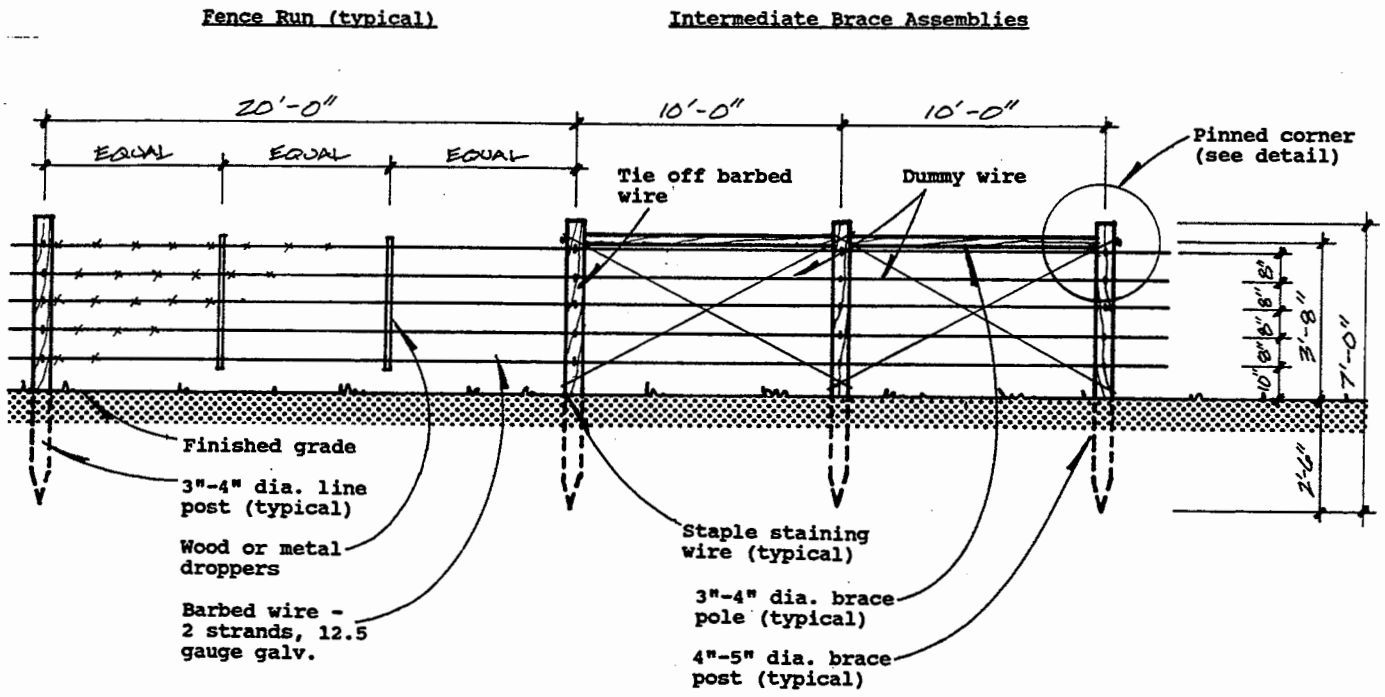
13. Barbed wire shall be prestretched prior to tieing off. Tension wire to 600 lbs., relax to 250 lbs., then staple securely to brace assemblies. Securely staple barbed wire to line allowing for wire movement.

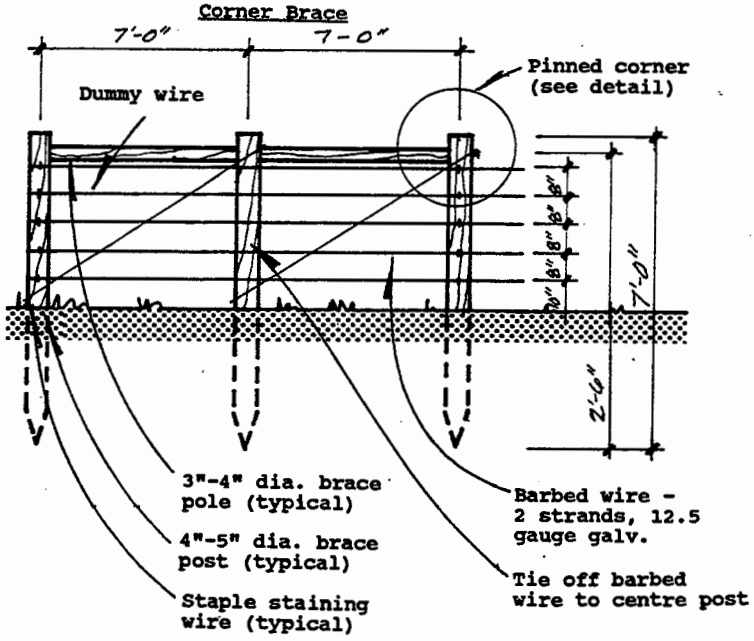
14. Wooden droppers shall be installed "interwoven" and securely figure-eight wire tied to every line wire between posts. Prefabricated clip-on galvanized sheet metal droppers may be approved.

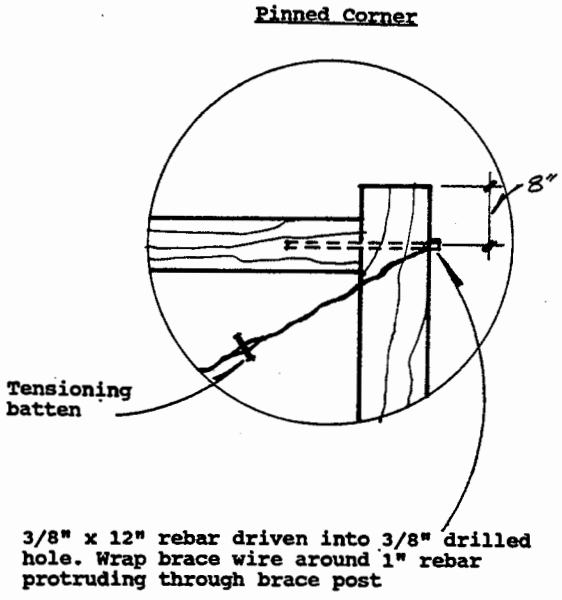
15. The fence shall be constructed in accordance with these specifications and details provided in the Schedule D.3 drawings which forms part of these specifications.

SCHEDULE D: FENCING SPECIFICATIONS

D.3: Standard Barbed Wire Fence







Not to Scale

SCHEDULE D: FENCING SPECIFICATIONS

D.4: WIRE FABRIC FENCE WITH ONE STRAND BARBED WIRE

1. All posts and brace poles shall be pressure treated in accordance with CSA Standard 080.5, using a wood preservative non-toxic to surrounding plant material.

2. Line posts shall be 8.0 ft. in length and 4" - 5" in diameter.

3. Corner and brace posts shall be 8.0 ft. in length and 5" - 6" in diameter.

4. Bracing poles shall be 3" - 4" in diameter.

5. All line and corner posts shall be machine pointed to permit driving of posts.

6. The wire mesh fencing material shall meet the following specifications:
   - 6.1 Minimum wire gauge - 12.5 A.W.G.
   - 6.2 Overall Height - 48"
   - 6.3 Min. number of horizontal strands - 9
   - 6.4 Max. spacing between horizontal strands - 8"
   - 6.5 Max. spacing between vertical - 16"
   - 6.6 Wire intersections of non-slip design
   - 6.7 Galvanized - CSA G164

7. The barbed wire fencing material shall meet the following specifications:
   - 7.1 Number of strands - 2
   - 7.2 Minimum wire gauge - 12.5 A.W.G.
   - 7.3 Maximum spacing between barbs - 6"
   - 7.4 Number of points per barb - 4
   - 7.5 Galvanized - CSA G164

8. Brace wire shall meet the following specifications:
   - 8.1 Number of strands - 2
   - 8.2 Minimum wire gauge - 12.5 A.W.G.
   - 8.3 Galvanized - CSA G164

9. The staples used in fence construction shall meet the following specifications:
   - 9.1 Minimum wire gauge - 9.0 A.W.G.
   - 9.2 Minimum length - 1.75"
   - 9.3 Galvanized - CSA G164

10. Line posts shall be placed no more than 10.0 ft. apart and be firmly anchored in the soil to a depth not less than 30".

11. Corner brace assemblies shall be constructed as indicated in the Schedule D.4 drawings.

12. An intermediate brace assembly shall be constructed as shown in the Schedule D.4 drawings and spaced as required by terrain or every 660.0 ft.

13. Barbed wire shall be prestretched prior to tieing off. Tension wire to 600 lbs., relax to 250 lbs., then staple securely to brace assemblies. Securely staple barbed wire to line posts allowing for wire movement.

continued

SCHEDULE D: FENCING SPECIFICATIONS

D.4: WIRE FABRIC FENCE WITH ONE STRAND BARBED WIRE (continued)

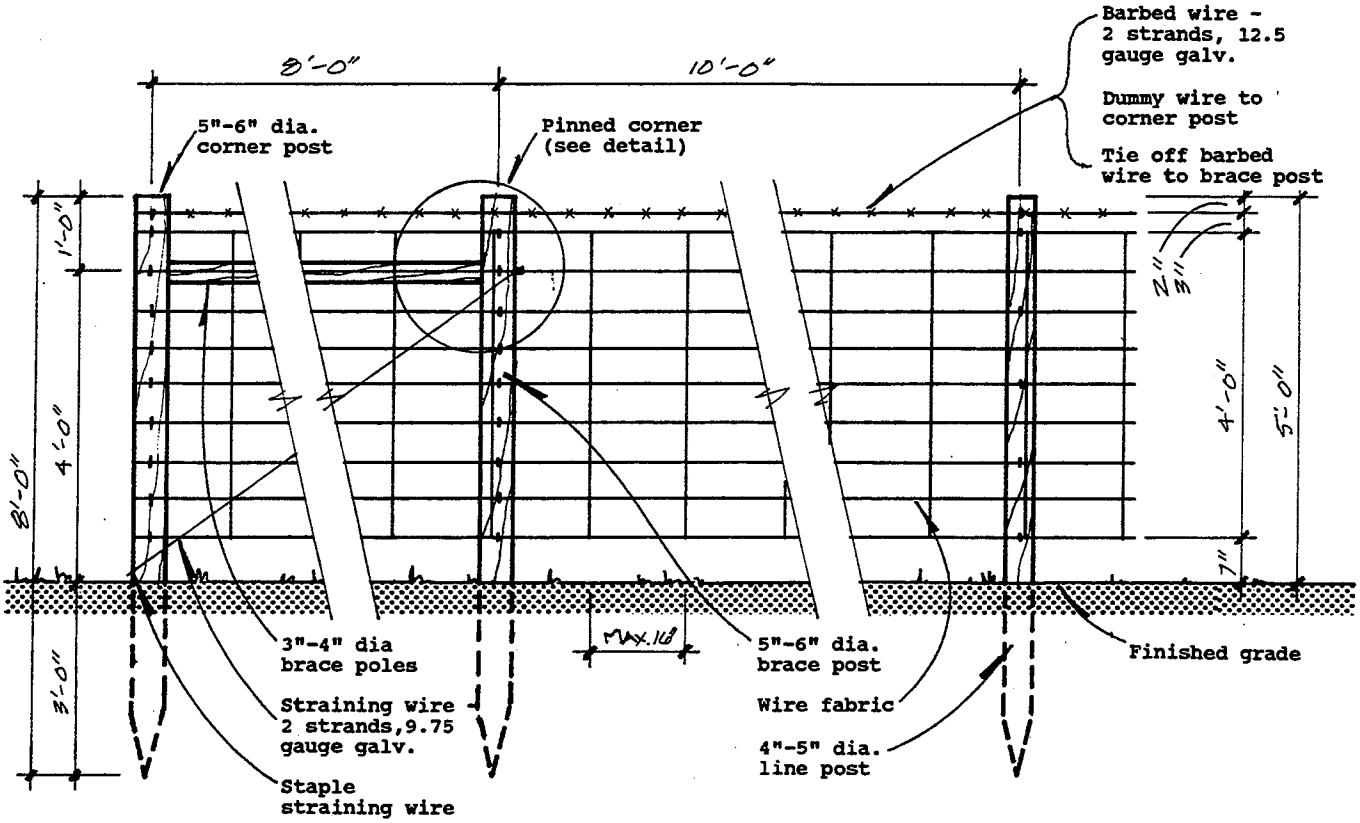
14. Wire mesh shall be stretched and securely attached by staples at each wire intersection with the brace assembly posts. At line posts, wire mesh shall be attached by staples at alternate wire intersections with posts. (see Schedule D.4 drawings) Securely staple to line posts allowing for wire movement.

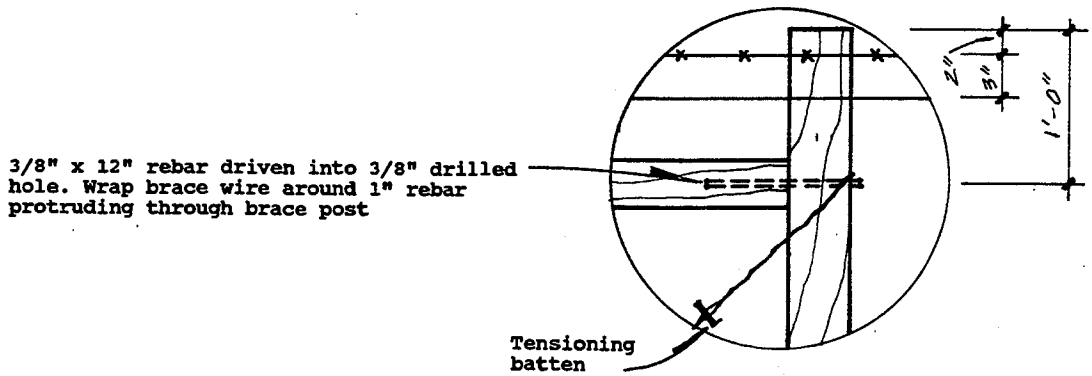
15. Wire mesh and barbed wire shall be spaced as shown in the Schedule D.4 drawings.

16. The fence shall be constructed in accordance with these specifications and details provided in the Schedule D.4 drawings which forms part of these specifications.

SCHEDULE D: FENCING SPECIFICATIONS

D.4: Wire Fabric Fence with One Strand Barbed Wire





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SCHEDULE D: FENCING SPECIFICATIONS

D.5: WIRE FABRIC FENCE WITH TWO STANDS BARBED WIRE

1. All posts and brace poles shall be pressure treated in accordance with CSA Standard 080.5, using a wood preservative non-toxic to surrounding plant material.

2. Line posts shall be 8.0 ft. in length and 4" - 5" in diameter.

3. Corner and brace posts shall be 8.0 ft. in length and 5" - 6" in diameter.

4. Bracing poles shall be 3" - 4" in diameter.

5. All line and corner posts shall be machine pointed to permit driving of posts.

6. The wire mesh fencing material shall meet the following specifications:

6.1	Minimum wire gauge	- 12.5 A.W.G.
6.2	Overall Height	- 48"
6.3	Min. number of horizontal strands	- 9
6.4	Max. spacing between horizontal strands	- 8"
6.5	Max. spacing between vertical stays	- 16"
6.6	Wire intersections of non-slip design	
6.7	Galvanized	- CSA G164

7. The barbed wire fencing material shall meet the following specifications:

7.1	Number of strands	- 2
7.2	Minimum wire gauge	- 12.5 A.W.G.
7.3	Maximum spacing between barbs	- 6"
7.4	Number of points per barb	- 4
7.5	Galvanized	- CSA G164

8. Brace wire shall meet the following specifications:

8.1	Number of strands	- 2
8.2	Minimum wire gauge	- 12.5 A.W.G.
8.3	Galvanized	- CSA G164

9. The staples used in fence construction shall meet the following specifications:

9.1	Minimum wire gauge	- 9.0 A.W.G.
9.2	Minimum length	- 1.75"
9.3	Galvanized	- CSA G164

10. Line posts shall be placed no more than 10.0 ft. apart and be firmly anchored in the soil to a depth not less than 30".

11. Corner brace assemblies shall be constructed as indicated in the Schedule D.5 drawings.

12. An intermediate brace assembly shall be constructed as shown in the Schedule D.5 drawings and spaced as required by terrain or every 660.0 ft.

13. Barbed wire shall be prestretched prior to tieing off. Tension wire to 600 lbs., relax to 250 lbs., then staple securely to brace assemblies. Securely staple barbed wire to line posts allowing for wire movement.

continued

D.5: WIRE FABRIC FENCE WITH TWO STANDS BARBED WIRE (continued)

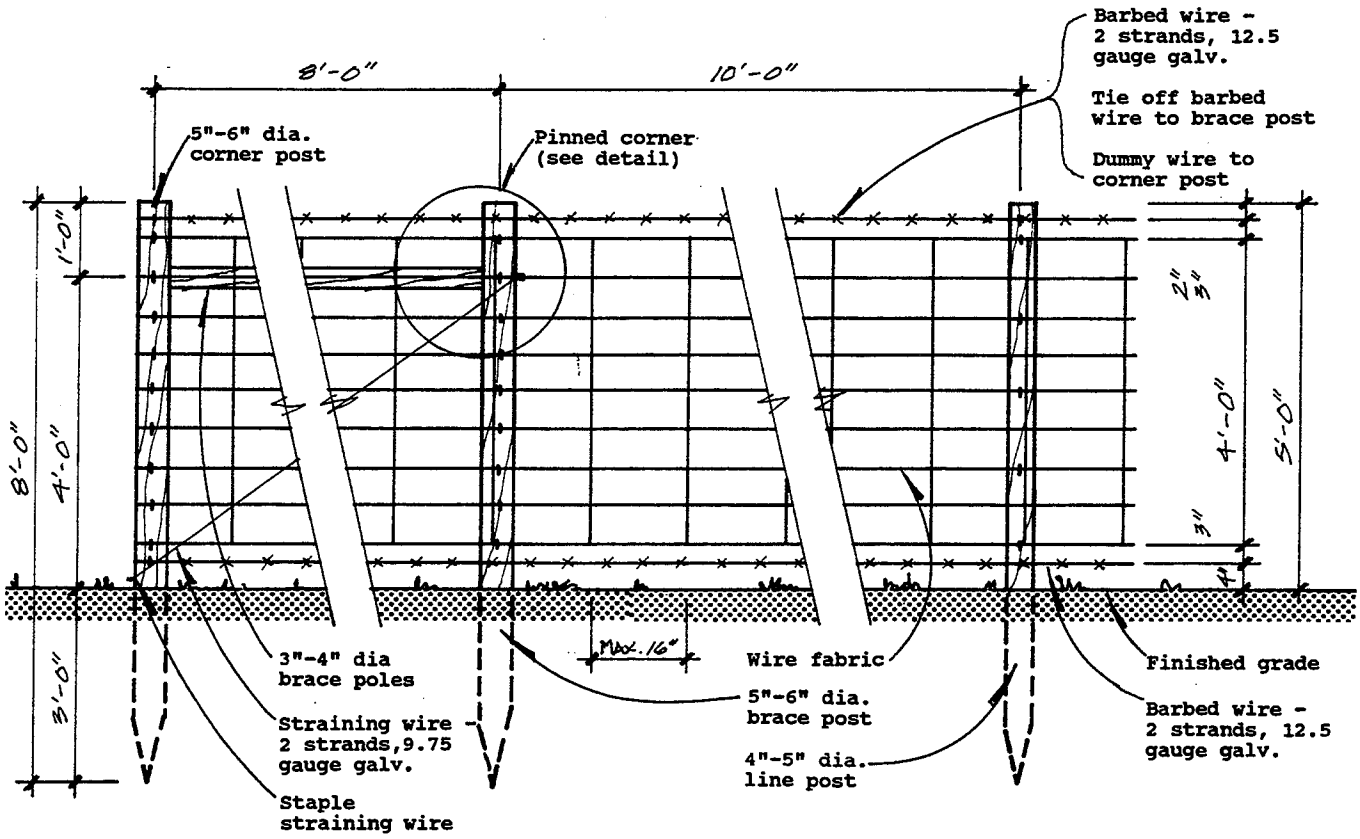
14. Wire mesh shall be stretched and securely attached by staples at each wire intersection with the brace assembly posts. At line posts, wire mesh shall be attached by staples at alternate wire intersections with posts. (see Schedule D.5 drawings) Securely staple to line posts allowing for wire movement.

15. Wire mesh and barbed wire shall be spaced as shown in the Schedule D.5 drawings.

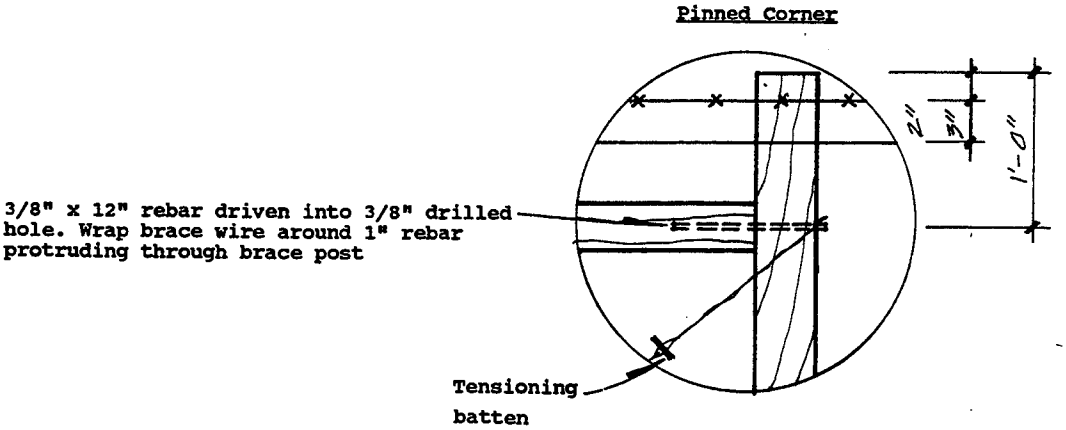
16. The fence shall be constructed in accordance with these specifications and details provided in the Schedule D.5 drawings which forms part of these specifications.

SCHEDULE D: FENCING SPECIFICATIONS

D.5: Wire Fabric Fence with Two Strands Barbed Wire



Pinned Corner



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SCHEDULE D: FENCING SPECIFICATIONS

D.6: Chain Link Fence

1. Line posts shall be constructed from 2" standard galvanized steel pipe (0.125" wall thickness), 8.5 ft. in length. Galvanized to CSA G164 standard.

2. Corner and straining posts shall be constructed from 2.5" standard galvanized steel pipe (0.125" wall thickness), 10 ft. in length. Galvanized to CSA G164 standard.

3. Diagonal corner bracing shall be constructed from 1.25" standard galvanized steel pipe. Galvanized to CSA G164 standard.

4. Posts shall be securely anchored in the soil to depths as indicated in the Schedule D.6 drawings using 2,500 P.S.I. concrete extending from the soil surface to 6" below the bottom of the post. Posts shall be spaced no more than 8.0 ft. O.C.

5. The chain link fencing material shall meet the following specifications:
   - 5.1 Minimum height - 5'-8"
   - 5.2 Minimum wire gauge - 11.0 A.W.G.
   - 5.3 Maximum mesh size - 2"
   - 5.4 Be galvanized (to CSA G164) or plastic coated

6. The barbed wire fencing material shall meet the following specifications:
   - 6.1 Number of strands - 2
   - 6.2 Minimum wire gauge - 12.5 A.W.G.
   - 6.3 Maximum spacing between barbs - 6"
   - 6.4 Number of points per barb - 4
   - 6.5 Galvanized - CSA G164

7. All accessory materials shall meet the following specifications:
   - 7.1 Post caps and extension arms: of pressed steel or cast or malleable iron and galvanized to CSA G164 standard.
   - 7.2 Tension wire: bottom and top wires 6.0 gauge medium tensile galvanized wire.
   - 7.3 Tie wire: 9.0 gauge aluminum wire for mesh fixing to line posts.
   - 7.4 Hog ring clips: 9.0 gauge galvanized steel wire clips for mesh fixing to top and bottom tension wires.
   - 7.5 Tension bar: minimum 1/4" x 3/4" galvanized mild steel flat bar.
   - 7.6 Tension bands: 1/8" x 3/4" galvanized formed mild steel flatbars with galvanized bolts and nuts for all tension bar fixing.

8. All terminal posts (posts at ends, corners or intersections), all line posts and any intermediate tensioning posts shall be set plumb into concrete footings in augured or dug holes to the depths and regular spacing as indicated in the Schedule D.6 drawings.

continued

SCHEDULE D: FENCING SPECIFICATIONS

D.6: CHAIN LINK FENCE (continued)

9. All posts shall be securely fitted with the appropriate weathertight caps and extension arms as shown in the schedule D.6 drawings.

10. Top and bottom tension wires shall be securely fixed taut and sag free to terminal posts and any intermediate tensioning posts. Top tension wire shall pass through line post tops.

11. Intermediate tensioning assemblies shall be provided where terminal posts are more than 500.0 ft. apart, and at any subsequent 500.0 ft. spacing, to consist of a straining post with diagonal pipe braces to adjoining line posts each way. (see Schedule D.6 drawings)

12. Chain link fencing mesh shall be stretched between terminal posts and any intermediate tensioning posts using proper equipment, and secured with tension bars and bands, tie wire and clips all in accordance with the requirements of the Schedule D.6 drawings. Joins in the length of wire mesh shall be made by weaving the mesh together with a single wire picket to form a neat continuous mesh.

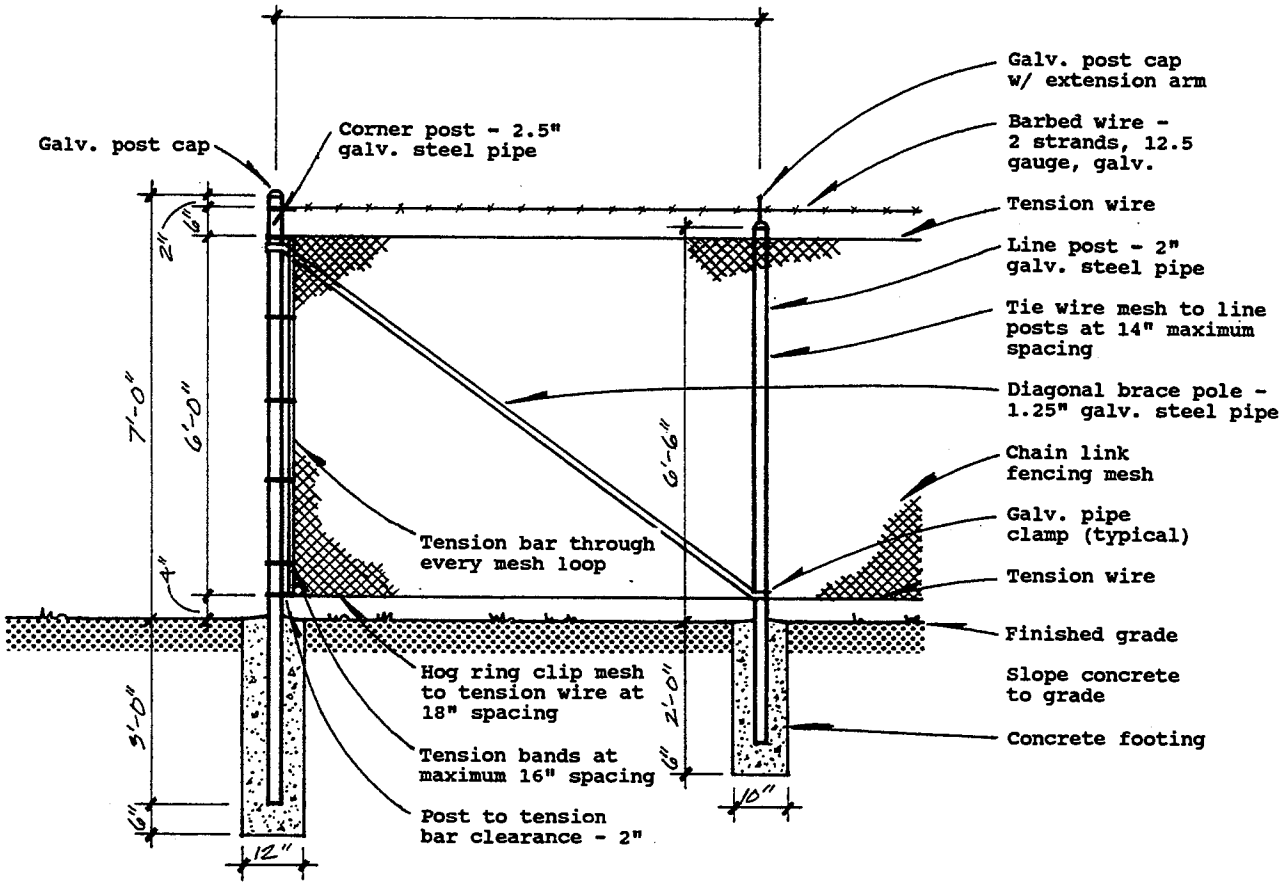
13. Barbed wire shall be installed in the slots of all extension arms and secured to extension arms at terminal and intermediate tensioning posts taut and free of sags.

14. The fence shall be constructed in accordance with these specifications and details provided in the Schedule D.6 drawings which forms part of these specifications.

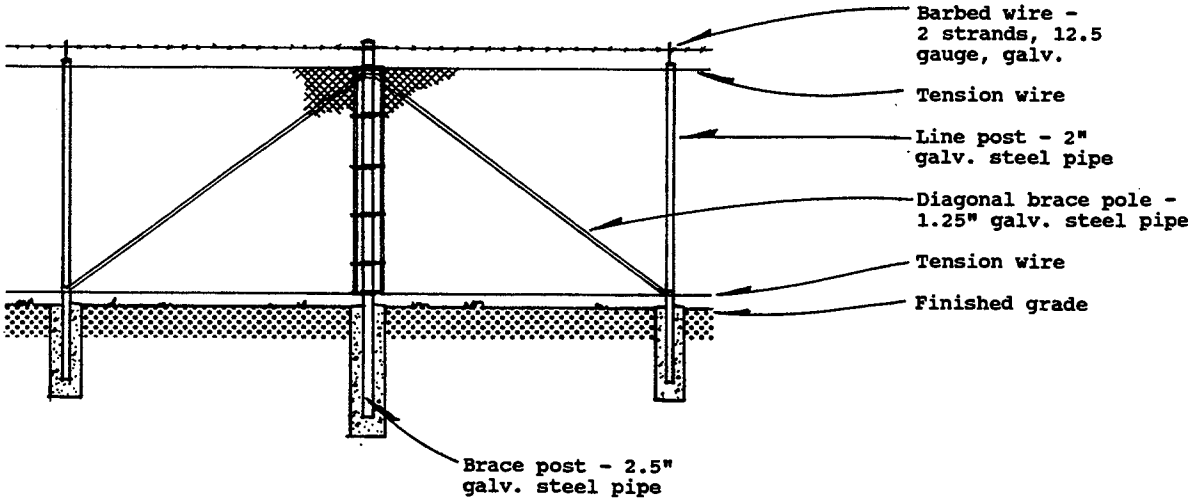
SCHEDULE D: FENCING SPECIFICATIONS

D.6: Chain Link Fence

Terminal Tensioning Assemblies



Intermediate Tensioning Assemblies



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SCHEDULE D: FENCING SPECIFICATIONS

D.7: HIGH-TENSILE SMOOTH WIRE FENCE

1. The High-Tensile smooth wire shall meet the following specifications:

   1.1 Type - 12.5 gauge high tensile galvanized
   1.1.1 Breaking load - 1250 lbf minimum
   1.1.2 Tensile strength - 180,000 p.s.i. minimum
   1.1.3 Zinc coat weight - 0.80 oz/ft.2 (class 3)

   1.2 Spacing - (starting from ground), six wires spaced 12", 6", 6", 6", 7" & 7" (top wire 44" above the ground), (See Schedule D.7 detail drawings)

   1.3 Tension - use permanent in-line wire strainers to tension each wire to 250 lbs.

   1.4 Joints - all line wire splicing shall be by mechanical connector. (i.e. "Nicropress" or "Wirelink") Use knot or mechanical connector at post tie off.

   1.5 Staples - minimum 2" galvanized slash point.

   1.6 Droppers - "Waratah" dropper - 37" length

2. The fence posts shall meet the following specifications:

   2.1 All posts shall be pressure treated in accordance with CSA Standard 080.5 using a wood preservative non-toxic to surrounding plant material.

   2.2 Single Span Strainer Assembly - both driven posts, 5"x 8.0 ft., driven 42"-48" deep in suitable soil. Horizontal top brace, minimum 4"x 10.0 ft. (see Schedule D.7 detail drawings)

   2.3 Line Posts - minimum 4" x 6.0 ft driven 26" into ground, (in zones of severe frost lift use a 7.0 ft. post), spaced 30'-0" to 40'-0" apart.(see Schedule D.7 detail drawings)

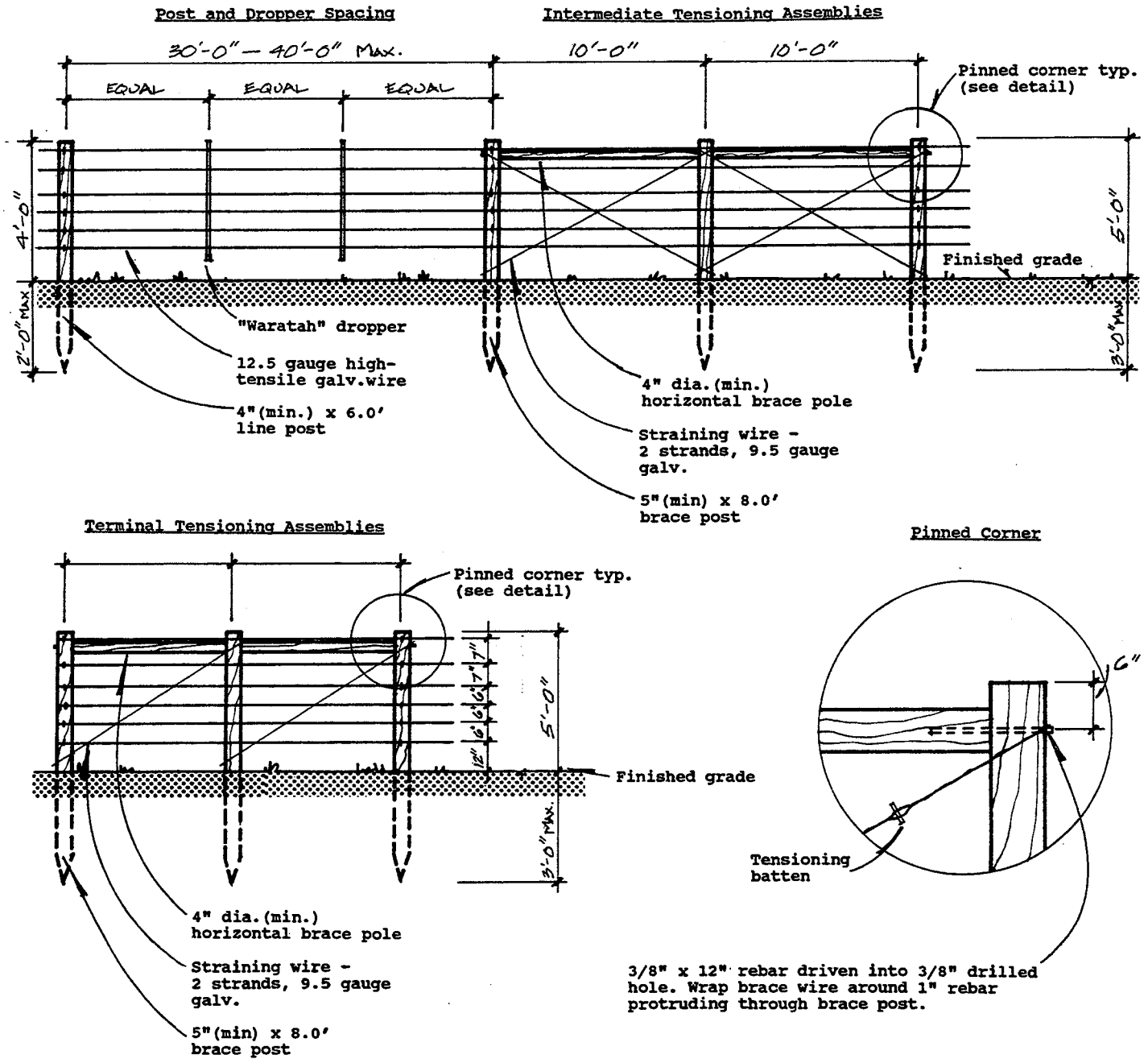
   2.4 Dip Posts - minimum 5" x 8.0 ft. driven perpendicular 50" into ground. (posts with a lift greater than 10" shall require a footing - see Ministry of Agriculture publication listed below.)

   2.5 Twitch Sticks - one 2" x 2" x 30" per single assembly.

3. The fence shall be constructed in accordance with these specifications, the details provided in the Schedule D.7 drawings which form part of these specifications, and in conjunction with the Ministry of Agriculture, Fisheries and Food publication, "An Introduction to High - Tensile Smooth Wire Fencing".

SCHEDULE D: FENCING SPECIFICATIONS

D.7: High-Tensile Smooth Wire Fence



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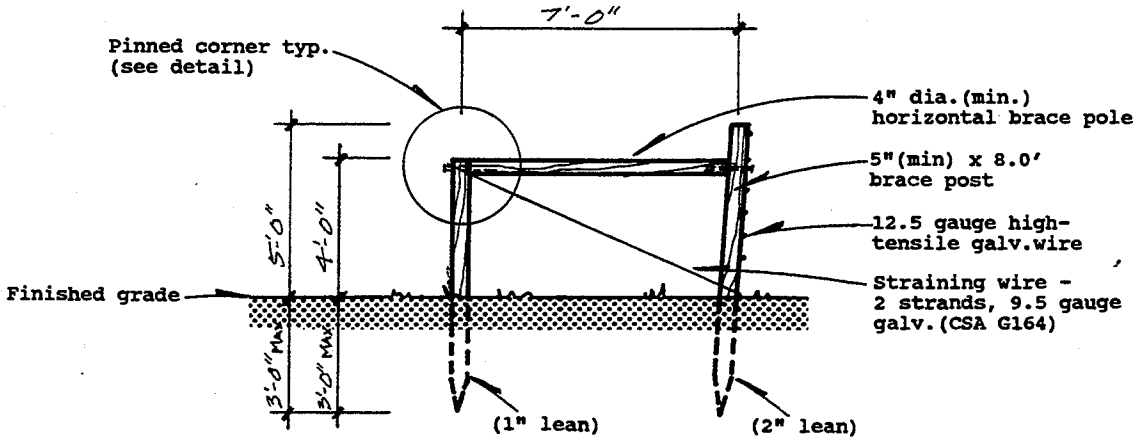
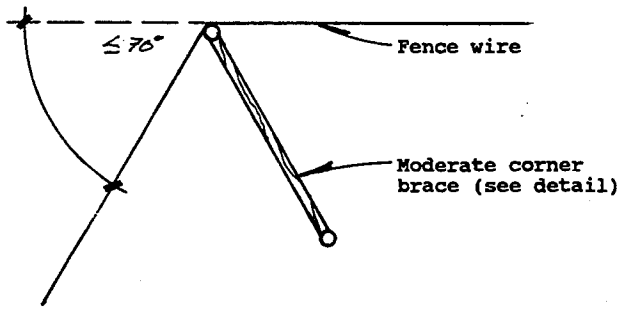
SCHEDULE D: FENCING SPECIFICATIONS

D.7: High-Tensile Smooth Wire Fence

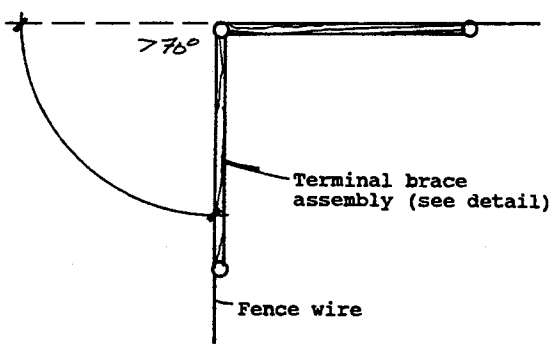
Moderate Corner Brace



Corner Brace (For Alignment Changes up to 70)



Corner Brace (For Alignment Changes over 70)



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LANDSCAPED BUFFER SPECIFICATIONS

PART 4: REFERENCES:

1. B.C. Society of Landscape Architects/B.C. Nursery Trades Association - British Columbia Landscape Standard

2. B.C., Province of, Ministry of Agriculture and Fisheries, 1988 - An Introduction to.... High Tensile Smooth Wire Fencing

3. Canada Mortgage and Housing Corp., 1985 - The Interface between Farmland and Housing

4. Canada Dept. of Agriculture, 1968 - Ornamental Shrubs for Canada

5. Grant John A. & C.L.Grant, 1990 -Trees and Shrubs for Coastal British Columbia Gardens

6. Landphair-Klatt, 1979 - Landscape Architecture Construction

7. Matsqui Planning Dept., 1990 - Urban-Rural Fringe Conflict Mitigation Techniques

8. Matsqui Planning Dept., 1990 - Matsqui Tree Guide

9. National Capital Commission, Ottawa - Standard Drawings and Details

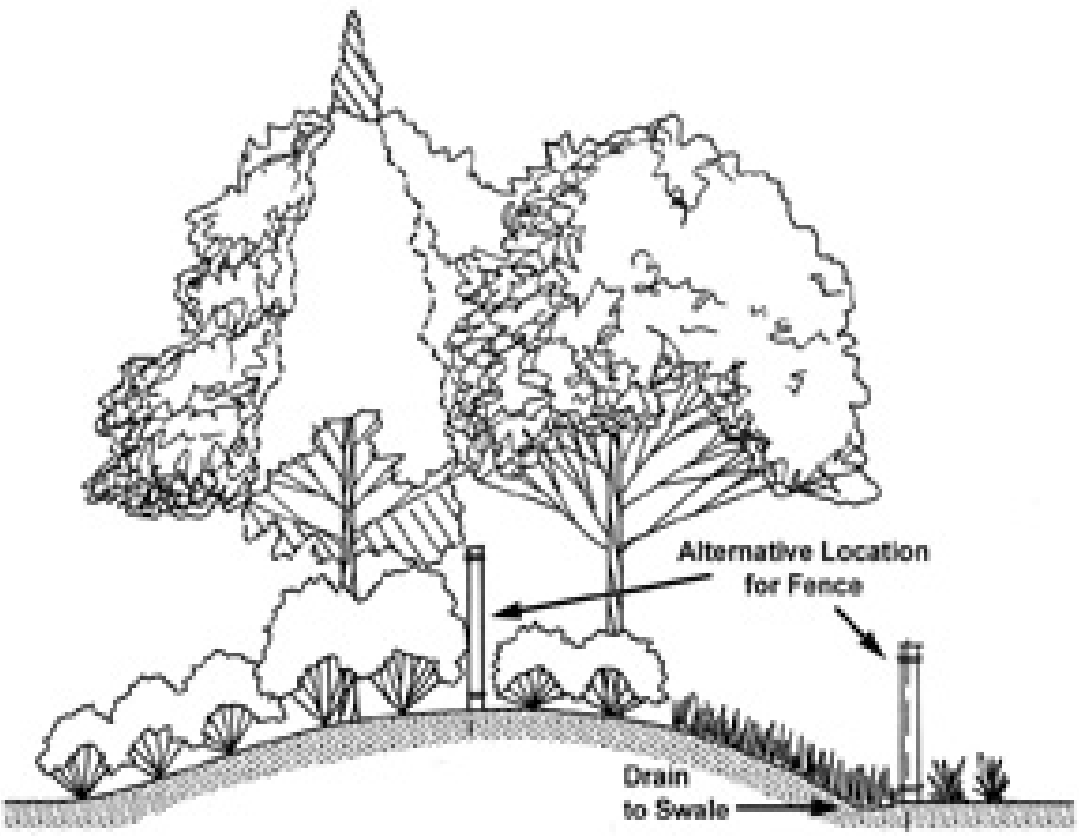
10. Richmond Planning Dept., 1986 - Methods for Implementation of the Urban-Rural Interface In Richmond

11. Specimen Trees Ltd., 1991 - Wholesale Catalogue

12. Stevenson/Losee Landscape Architects Ltd., 1992 - PlantLayout/Spacing Information

Schedule C

Guide to Edge Planning



Promoting Compatability Along Agricultural - Urban Edges

BRITISH COLUMBIA | Ministry of Agriculture

Guide to Edge Planning

Promoting Compatibility Along Agricultural – Urban Edges

Published by

Strengthening Farming Program

British Columbia Ministry of Agriculture

1767 Angus Campbell Road

Abbotsford, British Columbia, Canada

V3G 2M3

Telephone: 604-556-3001; Toll-free: 1-888-221-7141

Strengthening Farming Program website: http://www2.gov.bc.ca/gov/topic.page?id=0F162AFAFAEC454C9CC89D0D6E39599A

Contents

Acronyms

AAC	Agricultural Advisory Committee
AAP	Agricultural Area Plan
ALC	Agricultural Land Commission
ALR	Agricultural Land Reserve
AGRI	British Columbia Ministry of Agriculture (present name in 2015)
B.C.	British Columbia
BCMAF	British Columbia Ministry of Agriculture and Food (former name)
BCMAFF	British Columbia Ministry of Agriculture, Food and Fisheries (former name)
BCMAL	British Columbia Ministry of Agriculture and Lands (former name)
BCMA	British Columbia Ministry of Agriculture (present name in 2015)
DPA	Development Permit Area
EPA	Edge Planning Area
FPPA	Farm Practices Protection (Right to Farm) Act
GIS	Geographic Information System
OCP	Official Community Plan

Additional AGRI and ALC Resources

The following publications offer further information on edge planning; they are on the Ministry of Agriculture's *Strengthening Farming* website: *http://www2.gov.bc.ca/gov/topic.page?id=0F162AFAFAEC454C9CC89D0D6E39599A* . If the reader is viewing this guide electronically, the following blue titles have hyperlinks to the publications.

- *AgFocus: A Guide to Agricultural Land Use Inventory* (2004)

  This 30-page guide outlines practical details on how to undertake a land use inventory in agricultural areas. It includes a ready-to-use coding system for agricultural activities and land covers. As of January 2012, it is being revised to reflect current agricultural land use inventory procedures.

- *Agricultural Drainage Criteria*

  This 7-page factsheet contains criteria to provide good drainage for lowland crops to survive and thrive.

- *The Countryside and You - Understanding Farming* (1998)

  This 24-page booklet explains to the non-farmer living in or near an agricultural area what to expect from agricultural operations as farmers and ranchers go about their day-to-day activities.

- *Planning for Agriculture* (1998)

  This 66-page document summarizes the key issues in the **Planning for Agriculture - Resource Materials** (400 pages). The reports were prepared by the Agricultural Land Commission to encourage greater focus on agricultural issues and opportunities during planning processes.

  Chapter 8 - Planning Along Agriculture's Edges

- *Planning Subdivisions Near Agriculture* (1997)

  This 12-page brochure summarizes the report **Subdivision Near Agriculture... A Guide for Approving Officers**. The brochure is designed for the general public, particularly those individuals who may be planning to subdivide next to the Agricultural Land Reserve.

- *Subdivision Near Agriculture...A Guide for Approving Officers* (1996)

  This 21-page guide, was developed to assist subdivision approving officers when considering proposals for subdivision near farmland. It includes examples of ways to improve subdivision design, provide buffering, and manage road patterns to improve land use compatibility along agriculture's edge. Sample draft covenants associated with the provision of buffering are also included.

- *Vegetative Buffers in BC. An Investigation of existing buffers and their effectiveness in mitigating conflict* (2003)

  This 93-page report documents the results of an investigation that was undertaken in 2003 to determine the effectiveness of vegetative buffers in mitigating conflict. By conducting physical assessments and interviews with farmers and residents who lived next door to buffers, a number of conclusions and recommendations aid in the establishment of buffer guidelines to promote urban-rural compatibility.

- *Farm Practices in BC Reference Guide* (2014)

  The Guide includes over 60 separate factsheets grouped under the headings 'Commodity Specific', 'Farm Activity', and 'Farm Nuisance'. The documents describe many of British Columbia's diverse farm practices in general terms and refers to existing government legislation, industry guidelines and other sources of information related to farm practices.

- *Siting and Management of Dairy Barns and Operations* (2010)

  This 11-page factsheet recommends proper dairy facility siting and management to help establish good neighbour relations.

- *Siting and Management of Poultry Barns* (2008)

  This 8-page factsheet recommends proper poultry facility siting and management to help establish good neighbour relations.

Part 1 – Planning British Columbia's Agricultural Urban Edge

1.1 The Agriculture-Urban Edge

The hallmark of agriculture in British Columbia is its outstanding diversity – from the niche market vegetable farms in the Lower Mainland to the expansive grain farms in the Peace River to the internationally recognized vineyards and wineries in the Okanagan. With nearly 20,000 farms and ranches in B.C., almost every part of the province makes a contribution to our agri-food sector. In 2006, farm gate receipts were approximately $2.7 billion. Many of the over 200 different commodities produced in B.C. are exported around the world. Export sales of agricultural products across Canada and to over 100 countries are valued at $2.4 billion.

Agriculture in British Columbia takes place on some of the highest quality land in Canada. However, the province's physiography makes most of B.C. unsuitable for farming – only 5% of the province is within the Agricultural Land Reserve (ALR). This combination of scarcity and high quality, coupled with a growing population and an expected increase in the limitations to long distance transport make B.C. farmland an extremely valuable resource, from social, environmental, health, and economic perspectives.

Most cities and towns of B.C. grew up where agriculture occurred. As the settlements expand, they are pressing up against the valuable ALR. The interface between agricultural and urban land uses is an area that is often vulnerable to conflict. Traditionally, it has not been the subject of focussed planning efforts, largely due to the historic fluidity of the agriculture-urban edge. In the past, as urban areas expanded, the "edge" moved further into former farming areas.

However, in British Columbia, compared with many other jurisdictions, the Agricultural Land Reserve (ALR) provides an opportunity to reverse the long-standing assumption that it is natural and inevitable to compromise food lands for the sake of urbanization.

The information in this document is intended to apply only to those areas defined as edge planning areas.

1.2 Edge Planning Areas or Special Management Areas

The ALR boundary provides a geographic location where local government policy makers can confidently apply land management techniques and guidelines that will ensure greater long term compatibility between agricultural and urban land uses. Such planning will also ensure greater long term security for farming along the agriculture-urban edge.

Edge Planning Areas (EPAs) are:

agricultural and urban lands near the ALR boundary where the design and management tools in this guide are studied to create compatibility between land uses.

Determining where to undertake edge planning and ultimately establish edge planning areas depends on a number of factors. The ALR boundary should be the initial focus but there may be areas outside of the ALR that are also worthy of attention. Locating the most eligible areas will involve undertaking an overview inventory to identify broadly where the critical and non-critical edges are. Such an overview will ensure that effort is not wasted on areas where there is little possibility of future conflict.

Edge areas that require particular attention are generally undergoing urban growth, with development pres-

sures for new neighbourhoods, commercial, industrial and institutional land use changes. Those future growth areas are usually spelled out in Official Community Plans (OCPs).

Edges that do not require 'special management' may be isolated or have a physical characteristic or long term land use that has little existing or potential for conflict. Examples of these non-critical edges include agricultural land that abuts:

a mountainside, large water body, steep embankment, ravine; or existing low-intensity land uses such as a passive recreational park, Crown range land, airport, gravel pit, cemetery, landfill, established industrial and business parks, railway, BC Hydro right-of-way, or a freeway.

It is important to know whether the surrounding non-farm land use will be subject to change to a more urban intensive use in the future. If changes are expected, it would be prudent to have the edge planning area (EPA) in place ahead of time.

The size of the EPA may vary not only in length but also in width. Ideally, the planning area should be a minimum of 600 metres wide, spanning both sides of the ALR boundary - no less than 300 metres on each side. The edge planning area is not a 'no-go zone' where agricultural or urban uses are prohibited. Rather, the EPA is a study area, or special management area, for the possible application of edge planning techniques to improve land use compatibility.

Figure 1 Edge Planning Distance on Both Sides of the ALR Boundary

Various studies indicate that non-farm residents who live within 300 metres of an urban-agricultural edge can be significantly impacted by certain farming activities. However, if measures in this guide are undertaken within 300 metres on either side of the interface, conflicts can be minimized. Depending upon the specific circumstances facing different communities, this 600-metre-wide area may be adjusted. Each local government will need to undertake an edge inventory to determine the most appropriate size of its EPA.

There may be situations where an EPA lies across two communities. If possible, both local governments should work together to mitigate any impacts generated from the urban development or agricultural activity.

Once the location and size of the edge planning area have been determined within a community, a map or schedule should be established for reference. This map can be incorporated into the OCP and/or zoning bylaw.

People's contrasting perspectives on the function of rural areas have a significant effect on the perception of a nuisance and the ability to achieve compatibility.

While most farmers consider the rural area to be a place of business, many non-farm residents believe the rural area is a place that offers a lifestyle of open space, peace and quiet.

1.3 Rationale for Edge Planning

Measures to promote compatibility along B.C. agriculture-urban interfaces have been limited. As a result, a variety of complaints can arise from both farmers and their neighbours.

Farmers often experience trespass, property and equipment vandalism, crop damage and theft, livestock harassment, and litter. Flooding of farm land by rainwater runoff from upland urban development is another impact many farmers have experienced. All of these problems result in significant financial losses for farmers.

On the urban side of the 'fence', complaints can be related to odour, pesticide spraying, dust, aesthetics, and noise from different farm activities. Urban neighbours might complain about unfamiliar (to them) but normal and accepted farm practices, even if they are carried out in compliance with established regulations and standards.

Many local government jurisdictions have attempted to minimize the potential for conflict and complaints by using zoning bylaws to restrict the types of agriculture that take place next to urban edges, even within the ALR. Restrictions often require agricultural buildings to be set back such large distances from property lines that it makes it impossible to establish the operation. Alternatively, minimum lot size requirements or animal density controls may have been set, restricting the level of intensity. Another method used in the past was to completely prohibit certain types of agricultural commodities within specific areas. These methods unnecessarily restrict agricultural development opportunities.

Since 1996, the *Local Government Act* has limited the ability of local governments to restrict agriculture. Also, it allows intensive agriculture as a permitted use in the ALR. But, the Act also has tools for better planning for agriculture. It provides for development permit areas for the protection of farming. It also allows local governments to use farm bylaws to regulate farm operating methods, with the approval of the Minister of Agriculture. Farm bylaw powers complement zoning powers by allowing local governments to regulate certain aspects of farm operations that would not be possible with zoning alone. The *Land Title Act* allows approving officers to refuse subdivisions that would unreasonably interfere with farming operations on adjoining or reasonably adjacent properties, or that would increase access to land in the ALR, or that would have inadequate buffering or separation of the development from the farm.

These legislative tools provide an opportunity for local governments, the agriculture industry, and the Province jointly to develop urban and farm-side techniques to enable a wide range of farm operations to co-exist with neighbouring urban land uses.

1.4 Summary

Changing people's point of view on what the 'countryside' represents may be a nearly impossible task. However, employing measures that 'soften' the hard ALR edge, such as buffering, sensitive subdivision design, and management of certain farm practices to minimise nuisance, combined with an effective awareness strategy, will go a long way to lessening clashing perspectives and promoting compatibility.

Part 2 – Where the Edge Planning Process Fits

2.1 Purpose of Edge Planning

Edge planning is a process that will develop a package of policies and recommended criteria that can be adopted by a local government and implemented through regional growth strategies, official community plans, sub-area plans, bylaws, signage, and other statutory means. The edge planning process will also guide more detailed land use decisions associated with OCP designations along the non-farm side of the edge, rezoning, development permits, subdivision layouts, densities, road patterns, and the provision of other services. Urban-side land use planning can be conducted according to compatibility standards using a suite of tools. The agriculture-urban edge can be managed effectively through clear policies and the application of the tools in this Guide.

2.2 Role of Local Government in Edge Planning

Local governments are the most appropriate bodies to design and manage the edge planning process. Included here are a number of tools that local governments can use to manage or prevent potential edge conflicts before issues around compatibility arise. The following planning mechanisms are available for local government edge planning:

- Regional Growth Strategies
  - Regional Context Statements
  - Regional Collaboration and Consensus
- Official Community Plans
  - Integrated Community Sustainability Plans (ICSP)
  - High level policy
  - Land use policy
  - Development Permit Area Guidelines
  - Design Guidelines
- Neighbourhood Plans
- Agricultural area plans
- Zoning Bylaws

Several principles provide context for planning along agriculture's interface:

1. The ALR boundary is fixed and should form the focal point of edge planning
2. Both sides of the interface must be considered simultaneously.
3. Edge planning should be considered in wider context of Regional Growth Strategies, Official Community Plans, and Neighbourhood Plans.
4. An edge plan must anticipate land use change.
5. Edge planning techniques must be tailored to meet local situations.

Local governments not only have the planning tools, but it is important they become very familiar with their community's agricultural edges to ensure that sound land management policies and decision-making emerge. A commitment to the policies should result from the edge planning process.

Resources that can be drawn upon to participate in the edge planning exercise include:

- agricultural advisory committees (AAC) - a steering committee that includes farmers can be appointed to provide the agricultural perspective to strategic and long-range planning;
- individual farmers whose land is along the edge;
- Provincial planning resources such as the Smart Planning facilitators who can provide resources on emerging and cutting edge legislative tools;
- AGRI and ALC staff can provide technical assistance as requested.

Will this hillside remain in forest or will it be urbanized? This type of question should be asked to determine if this is an area for more detailed land use inventory work and the potential application of an EPA.

2.3 Legislative Mechanisms to Promote Edge Compatibility

Although zoning bylaws and official community plans can promote compatibility to some degree, their broad-based nature does not give local governments a lot of flexibility to deal with potentially incompatible land uses. The *Land Title Act* and *Local Government Act* provide local governments with mechanisms to promote compatibility between urban development and farm operations. These mechanisms include revised decision making abilities for approving officers, development permit areas to protect farming, and farm bylaws to manage certain farm practices and operations.

The *Farm Practices Protection (Right to Farm) Act* (FPPA) protects farmers from liability in lawsuits alleging nuisance and court injunctions provided they use "normal farm practices" and do not contravene other legislation listed under the FPPA such as the *Environmental Management Act*, the *Public Health Act*, and the *Integrated Pest Management Act*, and any land use regulation (as defined under the FPPA). However, AGRI and the ALC recognize that certain areas within the ALR may require special management so that different interests are taken into account.

2.4 Climate Change Mitigation

By the end of May 2010, municipalities and regional districts in B.C. were to have amended or adopted OCPs to include measures for climate change mitigation. Specifically, Official Community Plans must include:

- hard, measurable targets for greenhouse gas (GHG) emission reductions;
- policies that support the reduction of municipal GHGs sources; and
- actions that will lead to GHG emission reductions.

Provincial Bill 27, 2008 provided tools for direct and indirect GHG reductions. Specifically, there are three Development Permit Areas (DPAs) related to GHGs that local governments can employ as part of their reduction strategies. The purposes of these three DPAs are:

- GHG reduction
- Energy efficiency
- Water efficiency

In strategizing around GHG reduction targets, a local government may choose to include a minimum forest cover objective over and above an existing baseline. This forest would also link to the Provincial aforestation policy. The GHG reduction benefits from such a policy include carbon capture from planting or growing trees, and energy efficiency with placement of vegetation around buildings. There could also be conservation of water by reducing lawn areas. This approach would be an opportunity to support the planting and maintenance of trees in the buffer areas in the agriculture-urban edge.

2.5 Edge Strategy – Shared Responsibility

The success of edge planning relies on shared responsibility. This philosophy requires that both agricultural and urban land users and decision makers seek opportunities and adopt approaches to ensure compatibility. More specifically, successful agricultural - urban edge planning relies on:

- recognition that it is reasonable for landowners along both sides of the agriculture-urban boundary to share the benefits and impacts from edge planning implementation;
- public education that increases agricultural awareness and promotes neighbourhood-friendly land use; and
- ability of landowners to realize optimum land use which increases long term certainty and security for agricultural and urban land uses.

An edge planning strategy for each community should include:

- defining similarly-sized edge planning areas on both sides of the agriculture-urban boundary for the application of edge planning techniques;
- developing communication tools to enhance public awareness of edge planning objectives; and
- adopting bylaws that encourage more intensive land use with a strengthened land management regime along the edge planning area.

2.6 Edge Planning Process

Edge planning is an investigative process to enhance our understanding or awareness of the relationships between agricultural and other land uses and resources. This knowledge can then be applied to improving compatibility between the different land uses where they meet at the 'edge'.

2.6.a Edge planning's place within planning processes

Edge planning can be initiated as a stand-alone process or arise from a policy directive through a regional growth strategy or an Official Community Plan (OCP). Communities that have a limited amount of farm land may find the OCP to be an appropriate vehicle to provide policy direction on edge planning. In other cases, the OCP may direct that a more detailed (sub-area) Agricultural Area Plan (AAP) be undertaken and, in turn, the AAP could direct that edge planning work be undertaken. An AAP is a policy vehicle to examine in detail an area largely in agricultural use or with agricultural potential.

The edge planning process could influence plans and bylaws in a number of ways. It could provide the basis for the inclusion of Development Permit Areas (DPA) for the protection of farming within an OCP. The DPA, in turn, can provide direction in the design of subdivisions next to the agricultural land that can be dealt with under the *Land Title Act* section 86(1) (c) (x) & (xi). Edge planning will also influence zoning and farm bylaws by affecting setback distances, landscape requirements, and farm management requirements. In addition, the process can influence other initiatives such as park and recreation planning that may happen at the agricultural edge, water issues involving drainage, and the provision of disclosure statements on title.

2.6.b Steps to undertaking edge planning and establishing Edge Planning Areas

Official community or agricultural area planning processes provide the opportunity to give policy direction for more focused edge planning. In order to identify which actual details should be used for addressing the edge (e.g. buffer and farm management specifications) within the plans and bylaws, a land use inventory should be undertaken. Displaying this information with a geographic information system (GIS) will provide a practical means to understand clearly the land use dynamics on both sides of the edge.

Suggested steps to undertaking edge planning

1. Conduct an overview inventory to identify broadly where the critical and non-critical edges are.
2. Undertake a detailed land use inventory (via a drive-by survey) along both sides of the critical edges. Key features that should be noted include:
   - existing land uses and types of farming;
   - roads and freeways;
   - hydro and other utility rights-of-way;
   - railways;
   - watercourses and water bodies;
   - existing vegetative cover (that may be retained as a buffer); and
   - major topographic features.
3. Identify current zoning and OCP land use designations – determine whether land use is expected to change in the next 10-20 years and identify where the opportunity lies for Development Permit Areas for the protection of farming, including buffering. Buffering features that are planned well in advance will be far easier to achieve than attempting to retrofit a situation after a conflict has occurred.
4. Determine parcel ownership – private versus government-owned land, and possibly flag parcels being held for future development.
5. Incorporate land use and farming information into GIS so that maps can be generated, land use dynamics can be understood, and the potential effects of implementing the compatibility tools, particularly the EPA buffer and farm management guidelines, can be examined. Maps will also help to provide a picture of the edge planning areas and a greater appreciation may be gained by seeing the properties and land uses affected.
6. Identify existing or potential conflict areas.
7. Consult with farmers and urban-side land users to determine appropriate 'compatibility tools' to be used in each portion of the EPA. PARTS 3 and 4 of this Guide offer a variety of 'compatibility tools' that can be applied within the edge planning area.
8. Consideration can then be given to applying appropriate land management policies and effective mitigation measures through plans and bylaws.
9. Finalize the definition of the Edge Planning Area, and depending on the 'compatibility tools' that are used, incorporate the final map as a schedule in the OCP and/or Zoning Bylaw.

Part 3 – Urban-Side Edge Planning Tools

This Part contains the urban-side edge planning design objectives, strategies, and implementation tools that can be used to promote rural-urban compatibility. The design objectives and strategies provide a starting point and body of knowledge for local governments to work towards minimizing conflict, protecting farmland from urban encroachment, and promoting a more sustainable urban design. The performance objectives can be achieved through different urban-side design options that draw on tools provided by the *Local Government Act* and *Land Title Act*. Case study examples from the City of Surrey, the Regional District of Nanaimo, and the Capital Regional District highlight the rationale for, and lessons learned from, the implementation of various edge planning strategies and tools.

Implementation using a development permit area is given here as an example. However, Ministry of Agriculture staff have found through experience that inserting the urban-side criteria in the zoning bylaw provides more certainty to applicants and more efficient local government administration.

Design performance objectives and strategies are best utilized in edge areas that are currently not developed but undergoing urban growth, or where there are change-in-use pressures for residential, commercial, industrial, or institutional uses. For existing, built areas, the edge planning tools are used when the area is re-developed.

3.1 Performance Goal and Objectives

The overall design performance goal on the urban side of the Agricultural Land Reserve (ALR) boundary is:

- Within 300 metres of the ALR boundary, create farm-friendly urban development which promotes compatibility with agriculture and stabilizes the ALR boundary.

Within that goal, design performance objectives include:

- Use subdivision layouts which limit potential, future urban encroachment into the ALR or other farming areas;
- Limit the effects of urban development on farming by managing water, pedestrians, and traffic;
- Minimize the effects of farm activities on urban development through visual and spatial separation, reduction of risks, and public awareness of normal farm practices;
- Ensure the edge location is stable over time.

Urban-side planning, design, and management tools to implement these objectives are grouped in the following sections under:

3.3 Subdivision design: density, road, and lot patterns

3.4 Building design and layout

3.5 Open space and landscape design

3.6 Storm and ground water management

3.7 Urban-side buffer design

3.2 Type and Location of Urban Development

The type of urban development (residential, recreational, industrial, etc.) plays a role in compatibility. In most situations, the greater number of people located near an edge, and the closer buildings are situated to farm land, the higher the potential for complaints by both farmers and non-farmers. However, the exception to this appears to be that rural estate owners often have less tolerance for disturbances than those living in higher density types of housing. The following table outlines different types of urban development, their associated activities and impacts, and a compatibility rating. The low and moderate compatibility areas are ones where the edge conditions should be addressed to improve compatibility of uses.

Activities Of Urban Edge Development That Can Affect Compatibility

Urban Development Type	Activities	Impacts and Compatibility with Agriculture
Residential – medium to high (e.g., townhouses, apartments)	High numbers of residents; frequent vehicle access; limited green space; often rely on farm land for 'green space'; limited time recreating immediately outdoors (i.e., on resident's property)	Trespass, dogs at large, damage to crops and equipment, litter, theft, livestock harassment, flooding, traffic conflict **Low to moderate compatibility**
Residential – lower density **(e.g., urban single-family)**	Medium numbers of residents; fairly frequent vehicle access; some green space in yards, but also some reliance on farm land for open space; immediate outdoor recreating high	Trespass, dogs at large, damage to crops and equipment, litter, theft, livestock harassment, flooding, traffic conflict **Low to moderate compatibility**
Residential – low density **(e.g., country residential, 0.20 to 0.40 ha lots)**	Low number of residents; some vehicle access; large properties with own green space; less reliance on farm land for green space; immediate outdoor recreating high; high expectations for peaceful setting	Trespass, dogs at large, damage to crops and equipment, litter, theft, livestock harassment **Low to moderate compatibility**
Institutional **(e.g., schools, churches)**	High numbers of people over short time frame; frequent vehicle access; may have significant green space if associated with a school; may have high immediate outdoor recreating if a school	Trespass, damage to crops and equipment, litter, theft, livestock harassment, flooding, traffic conflict **Moderate compatibility**
Recreational **(e.g., playing fields, nature trails, golf courses)**	Low to high numbers of people over short time frame depending on type of recreation; low to medium vehicle access (may be high for specific events); high levels of green space; high immediate outdoor recreating	Trespass, dogs at large, damage to crops and equipment, litter, theft, livestock harassment, fire, spread of weeds, liability **Moderate to high compatibility**
Commercial	High numbers of people usually over short periods; frequent vehicle access; no green space; no reliance on farm land for green space; no outdoor recreating	Trespass, litter, theft, flooding, traffic conflict **Moderate to high compatibility**
Industrial	High numbers of people over short periods; frequent vehicle access; limited green space; no significant reliance on farm land for green space; limited outdoor recreating	Trespass, litter, theft, flooding, traffic conflict **Moderate to high compatibility**

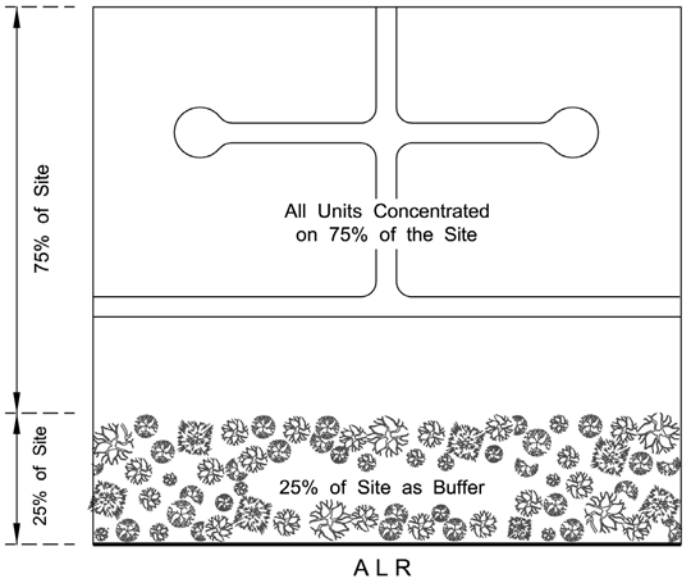
3.3 Subdivision Design: Density, Road, and Lot Patterns

Lay out the development to create separation and a vegetated buffer between the farming, with its noises, dust, odours, and use of chemicals, and the residential, institutional, commercial, industrial uses

3.3.a Gross Density

Use gross density or density bonus, or both, to encourage the creation of open space on the urban side next to the farming area. Gross density is the permitted number of units per hectare, before an area is subdivided and roads, parks, etc. are subtracted from the overall area.

E.g., if a 4 hectare parcel is designated in an OCP for a gross density of 15 units per hectare, the maximum number of units would be 60. If 25% of the land (1 ha) is used for a buffer or open space separation to the farms, all of the unit "entitlement" could go on the remaining 3 ha – or 60 units on 3 ha for a density of 20 units per ha (i.e., medium-sized single-family residential lots).

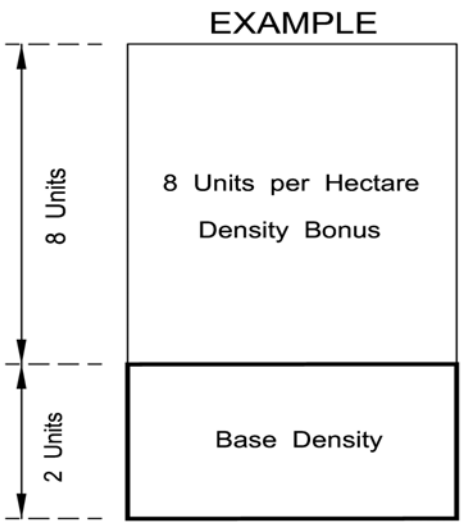


- This tool could be implemented in the OCP by mapping the Edge Planning Area where gross density should be used.
- The zoning and/or the subdivision procedure and servicing bylaws could contain zone(s) which spell out the criteria for this concept.

3.3.b Density Bonus

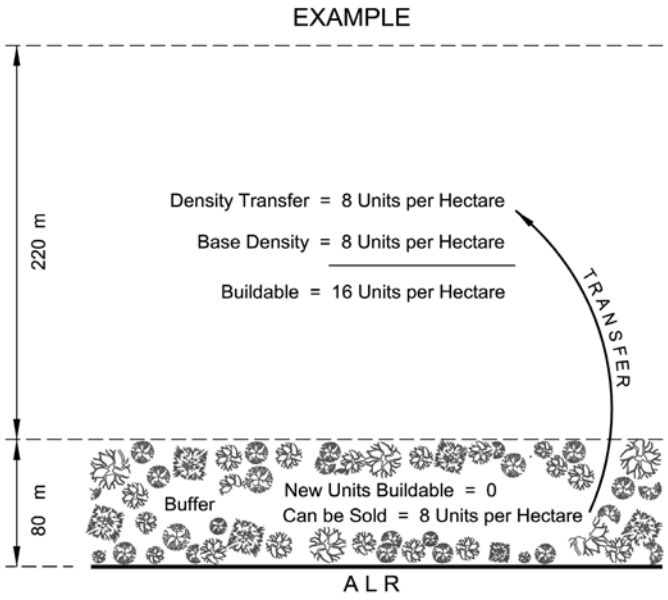
The Edge Planning Area could be zoned to allow an extra "bonus" in density, if open space or buffer were created along the urban side of the farming area boundary.

E.g.,the 'base' density might be 2 units per hectare, but if open space is set aside along the agriculture-urban edge, the 'bonus' could be another 8 units per ha, for a total of 10 units per ha – which could be an attractive total for a developer.



- The OCP could designate where bonuses could apply.
- The zoning bylaw could contain zones that have 'base' and 'bonus' densities.

3.3.c Density Transfer



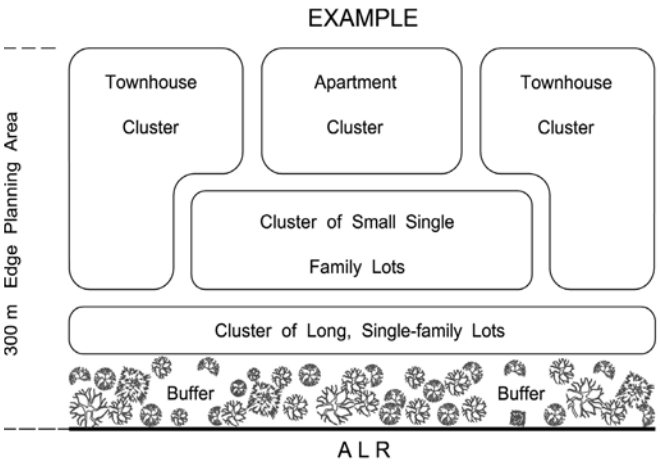
The 300-metre-wide Edge Planning Area (EPA) could have an average allowed density but those areas adjacent to the agriculture-urban edge, on the urban side, could build no more units but could sell all of their 'potential' unit allowance to areas on the outer portion of the EPA.

For example, say the EPA average allowed density is 8 units per hectare, but only 1 unit per ha could be built unless a density transfer occurs. If, within 80 metres along the urban side of the agriculture-urban boundary, no more units could be built, but the full 8 units/ha allowance could be transferred (sold) from this area. Then, within the 220 metres along the outer portion of the EPA, the 'base' density could be expanded from 8 units/ha, to 16 units per ha (8 avg + 8 from adjacent areas = 16) which could all be built, ONLY IF the extra 8 units/ha are purchased (received via transfer) from the landowners along the agriculture-urban edge. [Exact formulae would vary from community to community.]

So, all areas within the EPA would start with the same allowance but units would be transferred from the agriculture-urban edge to the outer edge, away from potential disturbance by farming.

- The OCP should have maps of areas which 'send' density into a transfer and areas which 'receive' the transferred density.
- The OCP or zoning could have text for the 'sending' and 'receiving' areas and zones.

3.3.d Housing Clusters

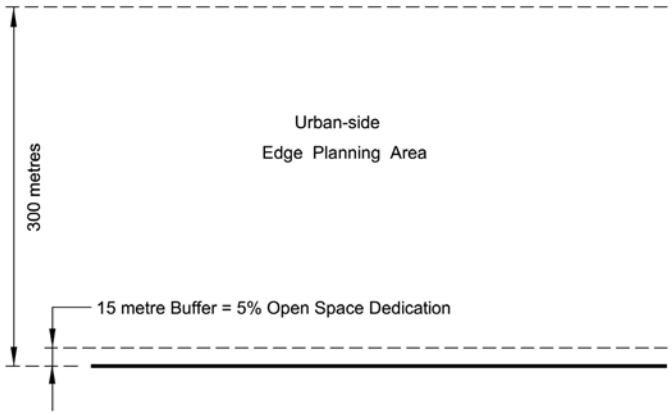


Housing units could be clustered together, away from the agriculture-urban edge, leaving wider open space along the boundary. Clustering could be either a stand-alone concept, or it could be combined with one of the density concepts above. It may mean that not all of the housing is the same type, but there may be a mix – some single-family, some townhouses, and maybe some apartments – and/or some single-family lots might be smaller.

- The OCP could stipulate that the EPA must have clustering in order to create a wider buffer, or separation along the farming edge.
- The zoning could be tailored to each site to match the cluster locations, densities, and housing types.

3.3.e 5% Park Dedication Abutting the Edge

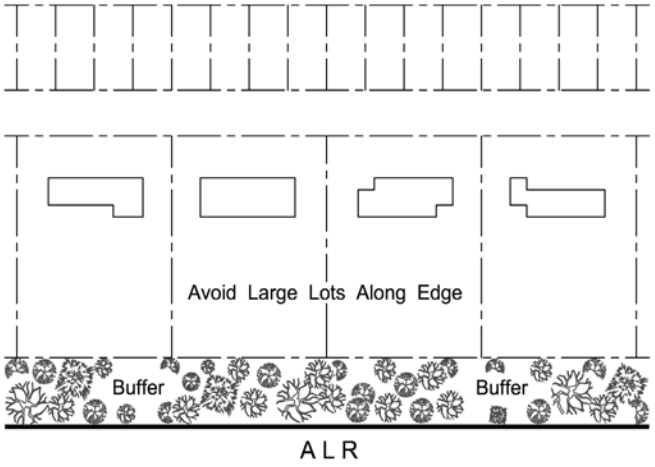
Each subdivision can be required to dedicate 5% of the gross site area for park and open space. For urban sites abutting the farming edge, the 5% should be provided adjacent to the boundary of the ALR or other farming area, to create space for a vegetated buffer. Sites elsewhere within the 300-metre-wide Edge Planning Area could contribute the cash in lieu of the 5% land dedication and the funds could be used to acquire land for the edge buffer in locations where the buffer is missing.



- The parks plans, and zoning and subdivision procedure bylaws could specify these uses of the 5% or cash-in-lieu along the urban side of the agriculture-urban edge.

3.3.f Avoid larger suburban lots along the edge

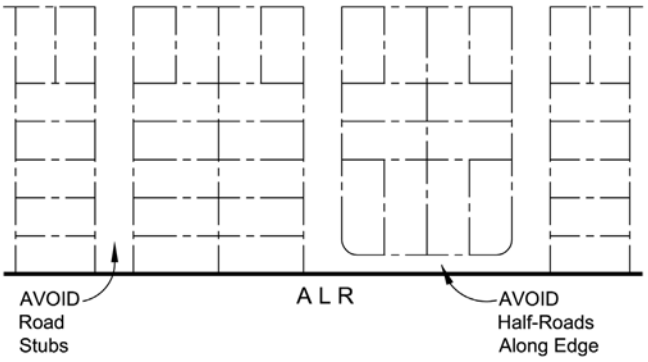
Some local governments have OCP designations and zoning which create larger (say 1 acre or 0.4 ha) lots along the urban side of the ALR edge. While such lower density has the advantage of locating fewer non-farm residents close to the farming, such an approach may backfire. There has been some evidence in Ministry studies of the edge, that more-affluent residents on larger suburban lots adjacent to farms have higher expectations of peace and quiet and are more likely to complain about farm practices.



- Instead of lower density suburban lots along the edge, an OCP should specify the use of other tools in this guide

3.3.g Avoid road stubs and half-roads

Urban-side roads which lead to the agriculture-urban edge and stop create the impression that further urban development of farm land is anticipated. Allowing an urban subdivision to create a half-width road along the farming edge also gives the impression that future subdivision is expected. Both road pattern designs will fuel speculation and drive up farm land prices. Avoid both.



Existing road stubs could be converted to cul-de-sacs or T-ended roads or to mini-parks. Existing half-roads could have dense vegetation planted along the agriculture-urban edge to emphasize "the other half will not be built".

The *Land Title Act* states an approving officer may refuse a subdivision if "the extent or location of highways and highway allowances shown on the plan is such that it would unreasonably or unnecessarily increase access to land in an agricultural land reserve".

Sometimes an approving officer thinks he/she must allow access from the subject lot to land adjacent or beyond within the ALR, but that is not necessary because the ALR should be considered as long-term farm land

not needing any more access.

- Zoning and subdivision procedure bylaws can specify that road stubs and half-roads must be avoided adjacent to farming areas.
- Approving officers should be encouraged to refuse such urban road designs.

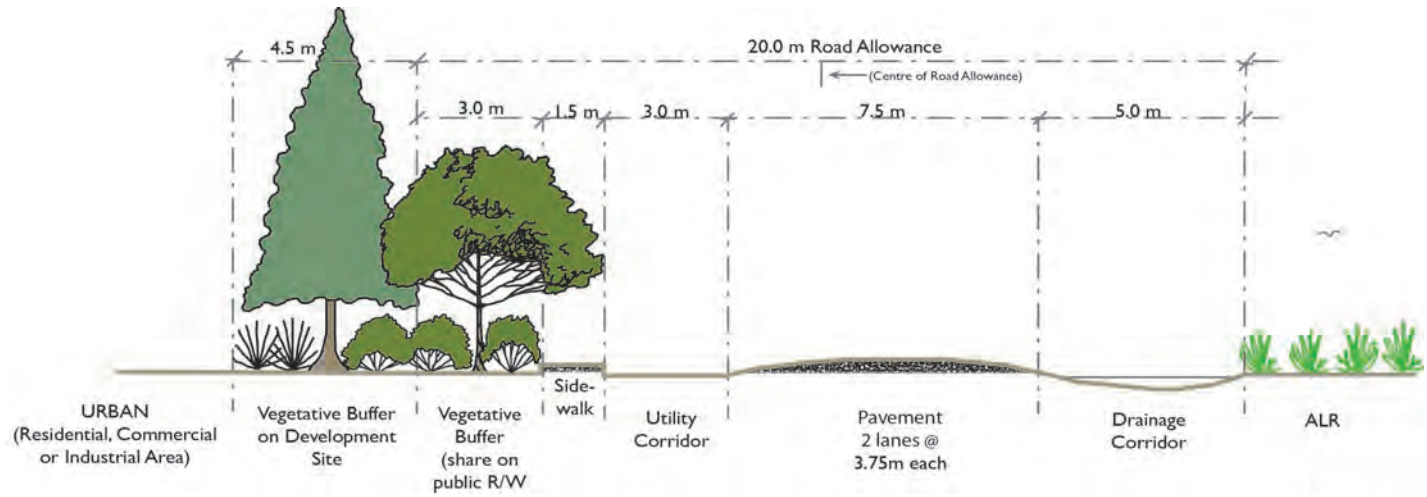
3.3.h Offset Road Along Agriculture-Urban Boundary

Offset pavement toward the agriculture-urban edge, to provide about 1/3 to 1/2 of the buffer on the road allowance.

Avoid new driveways from this road to the urban area, to reduce the openings in the buffer.

Residences should still be sited 30 metres from the boundary – in this case, the setback from the buffer would be 30 – (20+4.5) = 5.5 metres.

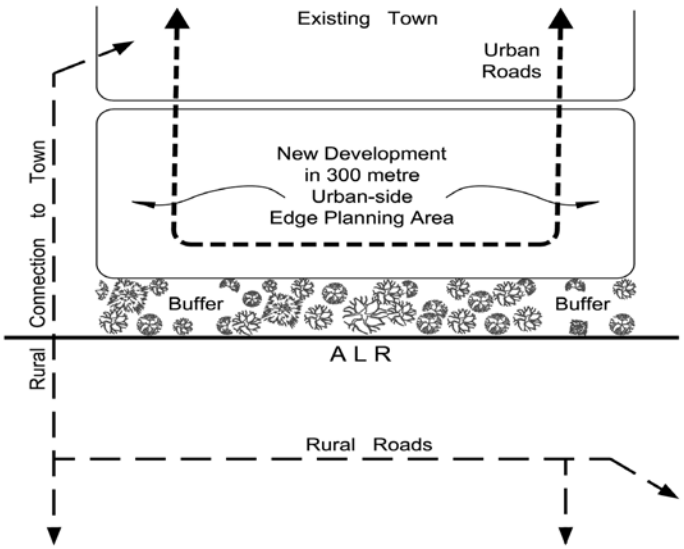
Reduce buffer width to 7.5 metres (from 15 m) to allow for width of road allowance.



3.3.i Direct urban traffic away from farms

Non-farm roads and trails should be linked to collector roads which do not lead the non-farm traffic along routes the farmers use to move their slow, large equipment. By limiting urban access to farm roads, future conflicts between farmers and urbanites can be reduced.

- Transportation and pathway plans in the OCP can allow for such separation of traffic types.



3.3.j Avoid utility extensions into ALR

Like the road patterns, the extension of utilities such as water and sanitary sewer, can fuel speculation of future urban expansion. Either the utility presence creates demand by farm land owners to use the utilities for urban development, or it creates an expectation of urban uses along the lines to pay for them, or both.

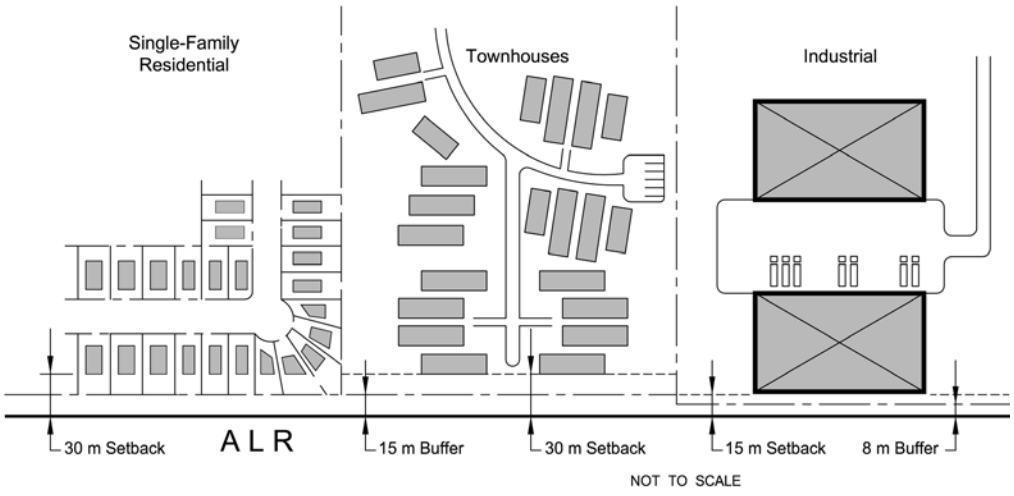
3.4 Site and Building Design and Layout

The setbacks to buildings from the agriculture-urban edge and the design of the buildings themselves can help create the separation between agriculture and urban or industrial uses. They can also decrease the impact of farming activities on the building occupants.

3.4.a Setbacks of buildings from ALR edge

The urban-side setback from the ALR, or other farming area, edge to housing or other buildings should provide some distance separation to the farms, and it should provide space for a wide, vegetated buffer.

In most cases, it will be the rear lot line which abuts the agricultural area, but for some townhouses, apartments, commercial, industrial, or institutional buildings, it may be a side lot line which abuts the agricultural area.



Recommended setbacks of buildings adjacent to the ALR are:

Residential: 30 metres

Commercial or industrial: 15 metres

Institutional: (to occupied buildings) 90 m.

- These setbacks could be included in zoning bylaws and/or development permit area criteria.

3.4.b Vegetated Buffer Height and Width

A continuous buffer along the urban side of the agriculture-urban edge will serve several functions. It will provide a visual screen of farm buildings and activities, provide a deterrent to trespass onto farms, capture some dust and spray drift, and filter farm odours somewhat.

Recommended height at plant maturity: 6 m.

Recommended MINIMUM buffer width:

Residential: 15 metres

Commercial or industrial: 8 metres

Institutional: 15 metres

On existing lots where available space may be limited: 3 metres

Where a stream abuts the farm interface, the vegetated buffer width can be reduced to (in addition to the stream width):

Residential: 8 metres

Commercial and industrial: 6 m

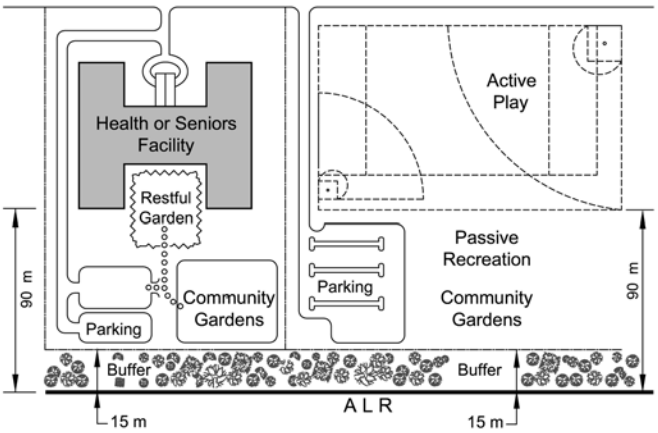
- These buffer widths could be included in a landscape bylaw, in the landscape section of the zoning bylaw, and/or as development permit area criteria.

3.4.c Institutional Site Layouts

Locate large institutional groups of people – playgrounds, schools, churches, health care facilities, seniors' centres, etc. - far from agriculture ("Planning for Agriculture" recommends 90 metres).

Parks situated adjacent to agricultural areas should have active recreation facilities, with larger groups of participants and audience, located farther from farms. Passive recreation facilities and parking areas could be near the agricultural edge.

The buffer design should include extra measures, like a fence or prickly shrubs, to prevent trespass onto farms because adventurous youth at the school or park may seek to explore the farms.



- These design criteria could be in the institutional zones and/or development permit area criteria. They should be shared with architects and other facility planners.

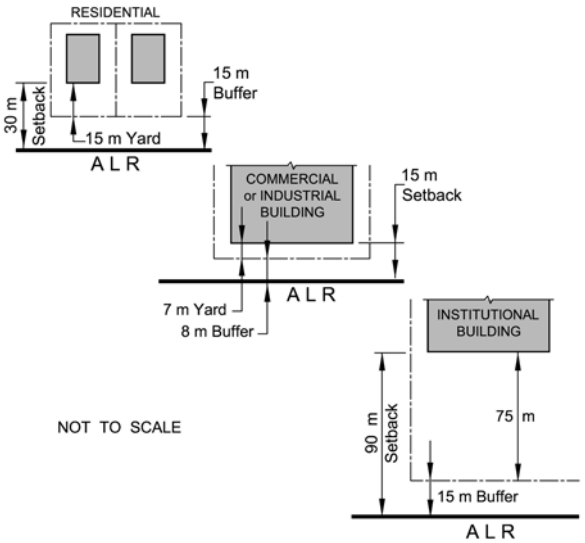
3.4.d Yard Widths Next to ALR or Buffer

In many lot layouts, the vegetated buffer may be included within the setback area. But as recommended below, it would be better for long-term plant maintenance if the buffer area is separate land parcel instead of just an easement. The resulting rear or side yard width abutting the agriculture-urban boundary is recommended to be:

Residential: 15 metres

Commercial or industrial: 7 metres

- These yard widths could be included in the zoning bylaw.

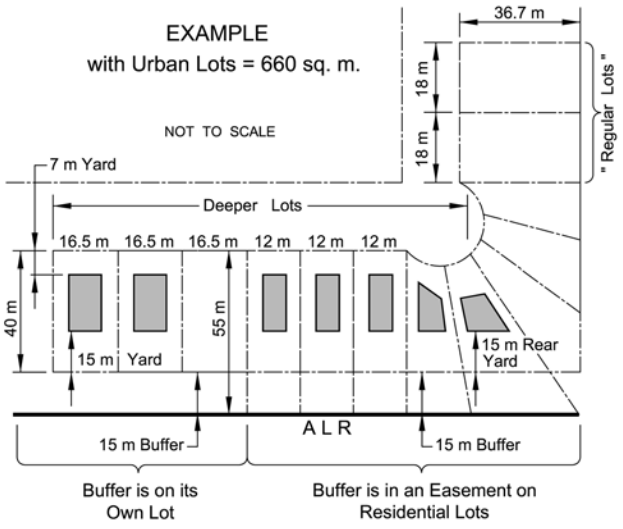


3.4.e Longer or Deeper Lots

To accommodate the longer or deeper yards (in 3.3.d above), the parcels abutting the agriculture-urban boundary should be longer or deeper. They may also have narrower width, if the lots are to have similar areas.

- These criteria could be included in the zoning and/or subdivision procedure bylaw.

NOTE: the lots on the left side of the sketch have standard yards and the buffer is on its own lot.

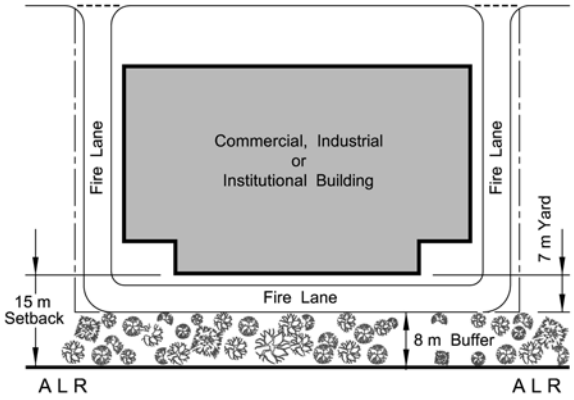


3.4.f Fire Lanes, Other Items in Yards next to Agricultural Areas

Fire department vehicles must be able to have access to all sides of commercial, industrial, and institutional buildings. Along the agricultural edge, such fire lanes could be constructed in the yard area between the vegetated buffer and the building.

Other items which could be included in yards are: parking, stormwater management, and community gardens.

- The zoning and building bylaws and perhaps a development permit area could include these criteria.

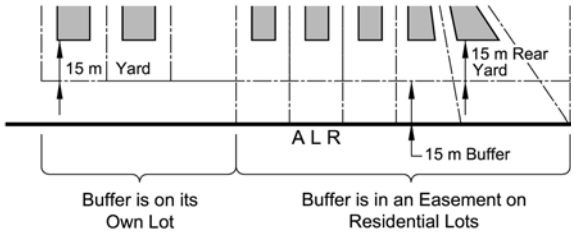


3.5 Open Space and Landscape Design

There are some broad planning and design concepts to be considered in the design of open space and landscape buffers.

3.5.a Buffer in a Separate Dedicated Parcel

Commonly, vegetated buffers have been planted in an easement or covenant area at the end of the (usually rear) yard. Even if the lot owner knows or remembers the easement exists, in the future, he/she may choose to clear or modify the vegetation for his/her own purposes.



A slightly more stable version is within strata titled projects, the buffer area could be made common property. Still, the buffer's continued existence and health depend on the strata members maintaining it.

A much more stable approach that is recommended is to have the vegetated buffer area surveyed into a separate parcel which is turned over to the local government for long-term maintenance.

The measurement of the rear or side yard, and/or setback would be made from this new lot's boundaries.

- This separate-lot approach could be included in development permit area criteria and in the zoning and subdivision procedure bylaws

3.5.b Features of the Buffer Vegetation

- While ensuring farm operations are not affected, maintain and enhance views and natural landscape features – riparian areas, nests, environmentally sensitive areas.
- Retain pertinent existing tree cover in buffer in natural state.
- Locate and choose species in the buffer which will not shade the farm crops.
- Do not plant invasive species.
- Use low-maintenance, drought-tolerant plants.
- Select tree and shrub species which will not harbour insects or diseases harmful to nearby farm crops.
- Select tree and shrub species that will filter dust and spray drift from the agricultural area – see Appendix.

3.6 Storm and Ground Water Management

Urban developments can affect nearby farms by changing the storm water flows and the ground water levels. When development occurs, it usually is converting "soft", natural landscape to "hard", paved areas or roofs. Rainwater that used to soak into the ground often runs off more quickly, either to neighbouring lots or to the municipal storm drainage system of pipes, ditches, and streams.

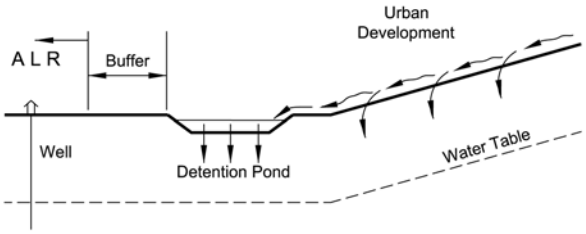
Farms have been affected by the faster runoff flowing on to farm fields making it too soft for farm machines to work, or flooding crops causing loss of value. Developers and local government engineers and planners are considering newer, "green" water management techniques. New drainage management techniques are creating mote infiltration and delaying runoff through retention and detention facilities (over-sized pipes, French drains, ponds). If the pre-development rates of infiltration are decreased considerably, the water table may fall, affecting nearby springs, wells, or ditches that farmers have been using to irrigate their crops.

Some features of storm and ground water management pertinent to edge planning follow.

3.6.a Avoid Changes to Water Cycles Nearby

Post-development surface water flows and stream and ditch runoff rates and volumes should match the pre-development ones. Do not allow flooding of nearby farms. Ground water levels in nearby wells after development should be the same as before development.

On-site storm water detention or retention ponds could be designed next to the buffer area to add to the amount of separation distance between urban uses and farms.



- These concepts could be included in development permit area criteria.
- They could form part of the engineering standards and subdivision procedure bylaw.

3.6.b Possible Water Benefits to Farmers

It may be that nearby farmers could use the extra water at some times of the year. The detention pond could be a holding pond for future farm irrigation. Or, the farmers may be having problems caused by ground wa-

ter levels and would want the water table to be lowered.

The buffer design could break up overland flow and divert water. A ditch along the agriculture-urban interface may catch runoff from uphill but it might also effectively block trespass into farm fields and direct runoff to irrigation systems.

The engineers designing the urban development water systems should consult nearby farmers to see whether the project's water management could also benefit the farmers.

- Co-ordinated design between urban projects and nearby farms could be a requirement in the local government's engineering standards for development.
- It could also be a DPA criterion where the DPA is for the purpose of water conservation.

3.7 Urban-side Buffer Design

Buffers provide a number of benefits for both residents and farmers. Extensive research on buffering has found that complaints about farming practices are often based as much on perception as reality. Seeing the source of the nuisance may heighten the perception of that nuisance (DNR, 1997; BCMAFF, 2000). Thus, establishing a visual barrier between the development and agricultural land can significantly reduce the level of complaints by minimizing both the cause and the perception of a nuisance.

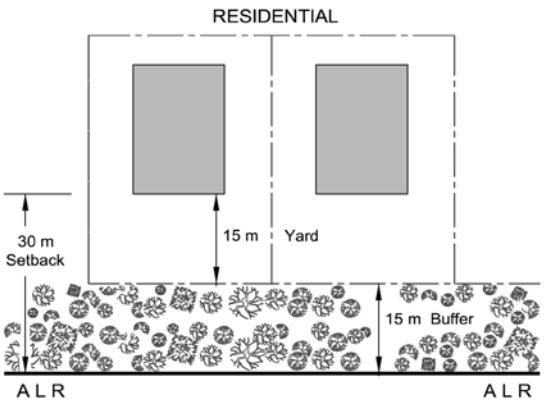
When designed and installed properly, buffers are extremely effective at reducing livestock harassment from dogs, preventing trespass and the associated problems of litter and crop damage. In addition, buffers can mitigate the effects of noise, light, and dust or spray drift.

They can also provide passive, low-intensity recreational and wildlife benefits without negatively impacting adjacent farm operations. A vegetated buffer can:

- protect soils, crops, pastures, and livestock from the effects of damaging winds.
- help reduce soil temperatures and retain moisture
- provide critical food and shelter for a variety of songbirds and small mammals
- provide linear habitat that forms corridors for species to move through
- add an opportunity for agro-forestry sample planting. [Agroforestry is a land management approach that purposefully integrates the growing of trees with crops or livestock.][1]

3.7.a Buffer Design Elements

Research undertaken by the B.C. Ministry of Agriculture indicates that the most effective buffer combines separation of uses, dense vegetation, and fencing. Basic buffer design concepts include:



- **A total minimum separation distance of 30 m** (15 m of which is a vegetative buffer) between a housing unit and agriculture-urban boundary is required to mitigate most effectively the impacts of urban and farming activities.
- A greater separation distance of 50 metres would be optimal based on previous Ministry studies, but limited land availability and current development patterns have lead to a compromise in the spatial setback.

1 http://www.agf.gov.bc.ca/resmgmt/agroforestry/index.html

- By including a barrier (fence), trespass can be prevented.
- **Finished height**: The vegetative buffer must reach a finished height of at least 6 metres to screen effectively the farm operation from its urban neighbours. This height will also capture more dust and spray drift.
- Mixed planting: A mixed deciduous and coniferous planting with foliage from base to crown is required in order to ensure dust and spray drift is captured to the fullest extent possible.
- The **crown density** must be 50-75% - i.e. densely packed hedges are not desirable due to poor air circulation which can lead to ineffective buffering of dust and spray drift and odour.
- A **2-metre separation distance** between the vegetative buffer and agriculture-urban boundary is desirable as it provides space for improved functioning on the agricultural side – less shading, more air circulation and greater manoeuvrability for farm equipment. This two-metre-wide strip could have low-growing vegetation.
- Any pathway or passive recreation along the buffer should be set far away from the farms, with two-thirds of the buffer width, or at least 7 metres of planting between the path and the farm land.

At first glance, it may appear that nothing can be done to enhance this 'built out' urban area adjacent to the ALR for greater compatibility.

But . . . . two actions are possible:

1. **Disclosure statements could be placed on the land titles to indicate to future owners of these homes that they are living near a farming area.**
2. **A buffer could be installed along the road ending that abuts the farm edge.**

3.7.b Buffer Design Plan

- Each application for new development should submit a **buffer design plan** showing:
  - existing and proposed grades
  - extent of the buffer
  - constructed barriers
  - location, spacing, size, and quantity of proposed and existing trees and shrubs
  - list of the tree and shrub species to be planted.
- Another plan should note the subdivision and building design elements that will promote compatibility along the edge (e.g., road layout, location of patios, sound-proofing measures, separation distances, and rainwater management).
- The requirements for these plans could be included in guidelines for a development permit area on the urban side for the protection of farming. See sample wording in Appendix A. The buffer requirements could also be included in the zoning bylaw or servicing standards, or in development procedures bylaws. The approved plans could be included in a restrictive covenant on the land titles.
- Establishing buffer criteria or guidelines should be considered a long-term policy initiative. Where urban uses are already built to the farm land edge, the buffers would be obtained gradually over time as re-development occurs.

3.7.c Buffer Installation and Maintenance

- Ensure the buffer is installed prior to building construction.
- Ensure the buffer is maintained:
- Require a letter of credit for the installation cost, of which a portion would be returned to the landowner or developer after substantial completion of the landscaping construction.
- The remaining portion of the monies should be held for two to three years and returned if the buffer vegetation is deemed to be healthy.
- Irrigation and weeding should be undertaken to ensure survival of the plants.
- If the buffer does not pass inspection, the security can be renewed until the buffer is approved, or the security deposit can be used to undertake the necessary work to complete the landscaping.
- Establish a restrictive covenant on the land title requiring preservation of the buffer and prohibiting the construction of, or addition to, any buildings or structures within the buffer area or a yard adjacent to the buffer.
- It would be best if the buffer was dedicated to the local government, and then public maintenance would be required. OR
- If the buffer is to be maintained by the developer or subsequent owner, a maintenance plan should be prepared and signed off by a registered landscape architect or professional biologist.

Periodic inspections should be conducted to ensure maintenance is being undertaken.

- The requirements for buffer installation and maintenance could be included in development procedures bylaws.

SAMPLE COVENANT WORDING

"The property owner acknowledges that:

1. **the lot is subject to the following restrictions:**
    a. **the vegetated buffer will be maintained;**
    b. **no habitable structures will be built in the rear or side yard abutting the ALR;**
    c. **the walls and windows facing, or at an angle to the ALR, will be constructed with extra sound-proofing and no patios will be built on those sides.**
2. **Because the lot is close to the Agricultural Land Reserve, some or all of the following impacts arising from agricultural practices may occur:**
    a. **noise from farm operations at various times of the day, including propane cannons and other devices used to deter wildlife;**
    b. **farm odours and chemical spray;**
    c. **aesthetic appearance of fields (unkempt fields, storage of materials, etc.);**
    d. **light from greenhouses."**

3.8 Urban-side buffer design specifications

Below are the setback distances for principal buildings and design criteria for installing an urban-side buffer along the agriculture-urban boundary. Four examples of design specifications and layouts follow.

Urban-Side Setback & Buffer Design Criteria for Urban-Agriculture EPAs

	Setback Distance and Buffer Size	Buffer Height	Buffer Design Features
Level 1 Urban-side Residential Setback & Buffer*	**Setback** **30 m** from agricultural area boundary **Buffer Width** **15 m** – buffer is located within the 30 m setback	6 m ** (finished height)	• Mixed planting of fast growing tree and shrub species with foliage from base to crown – long thin foliage desirable. Include at least 60% evergreen conifers to collect dust & spray drift. • No gaps in buffer and no tightly packed hedges; crown density of 50-75%. Design as wedge shaped if odour dilution desired. • Design specifications and layout will be as per urban-side Buffer A or B (p.24); or existing vegetation may be retained as part of buffer (Buffer C, p.26). • Leave 2 m of low growing or no vegetation from agricultural areaboundary. • If paths and passive recreational uses (e.g. picnic areas) are part of the landscaped buffer, the recreational features will not take up more than 1/3 the width of the buffer and they will be located away from the agricultural area boundary. • If community forest/gardens are an included use of the buffer then the uses should be located away from the agricultural area boundary and protected with vegetation.
Level 2 Urban-side Non-Residential Setback & Buffer (e.g. passive recreation, industrial, or commercial)	**Setback** **15 m** from agricultural area boundary **Buffer Width** **8 m** – buffer is located within the 15 m setback	6 m** (finished height) **See Note 2 below	• Either a double row of mixed deciduous/coniferous (with at least 60% evergreen conifers) or just coniferous, and hedging/screening shrub species with foliage from base to crown. • Design specifications and layout will be as per urban-side Buffer D (p.27); or retain existing vegetation (Buffer C, p.26). • Leave 2 m of low growing or no vegetation from ALR boundary.

* Exception to Level 1 Residential Urban-side Buffer requirements:

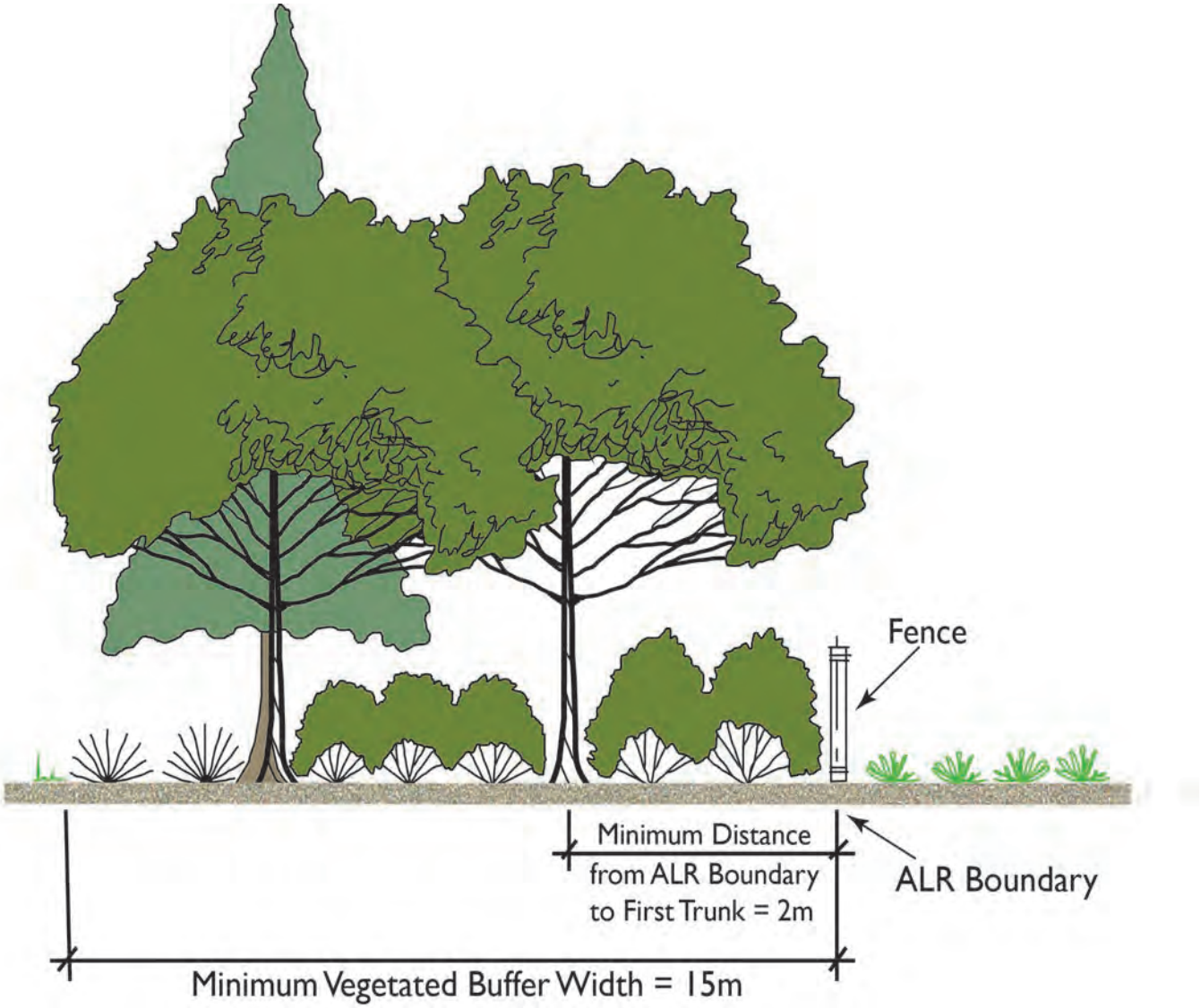
Residential parcels that are separated from the agricultural area by a road allowance can reduce the size of the Level 1 buffer, provided new driveway accesses from these parcels onto the subject road allowance are avoided. The siting of the residence should still be 30 m but the vegetative buffer can be reduced to 7.5 metre width and located as near and parallel to the agricultural area boundary as possible.

** If spray drift is a concern, tree height should be 1.5 times the spray release height or target height, whichever is higher.

3.8.a Urban-Side Buffer A (no berm) – Design Specifications & Layout

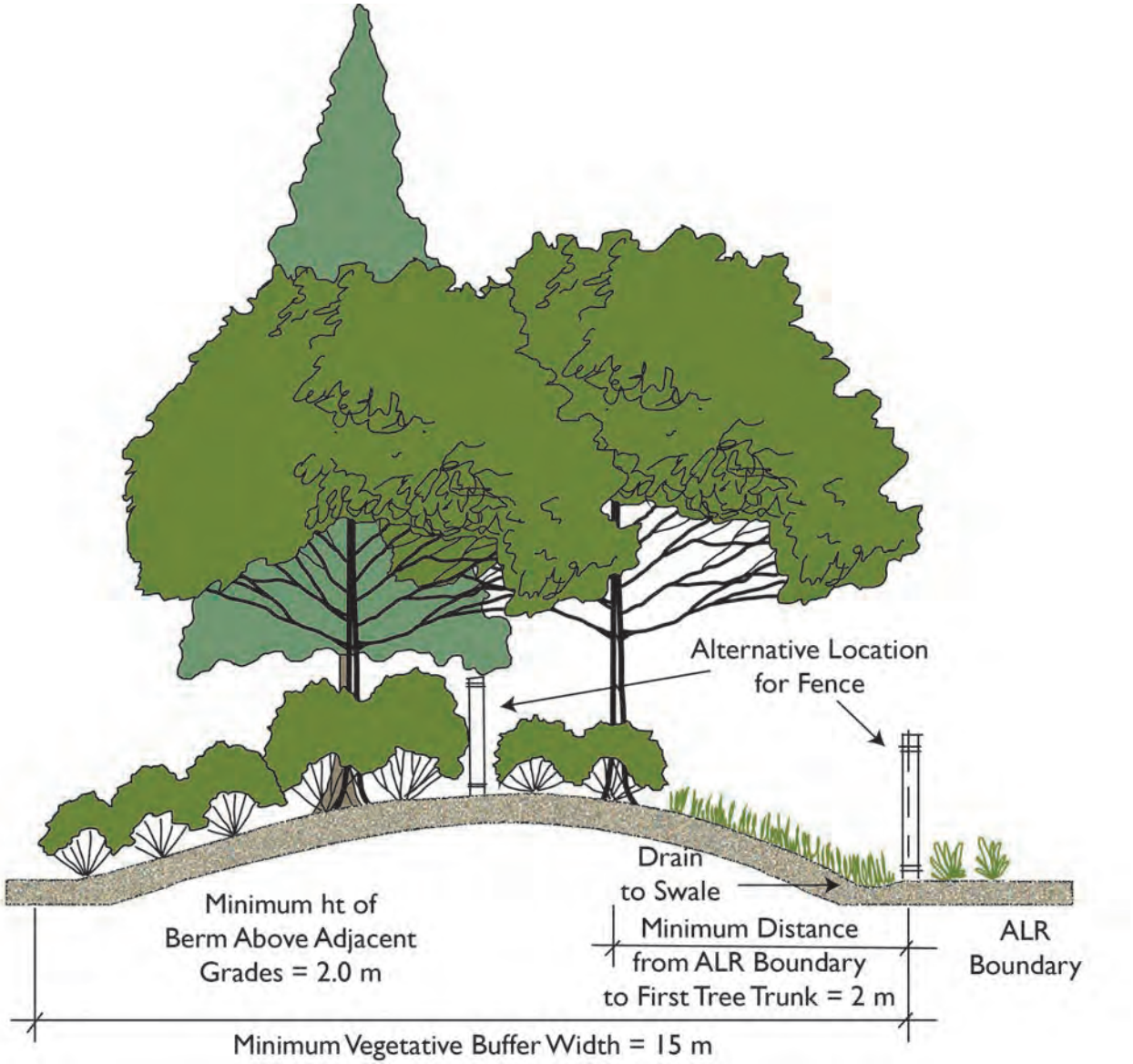
The Urban-side **Buffer A** includes:

- double row deciduous/coniferous trees (see Appendix B for plant list)
- triple row trespass inhibiting shrubs (see Appendix B for plant list)
- double row screening shrubs (see Appendix B for plant list)
- solid wood fence or chain link fence with a height of 6 feet (1.8 metres) and built as per Appendix C or as per the local government's fencing specifications.



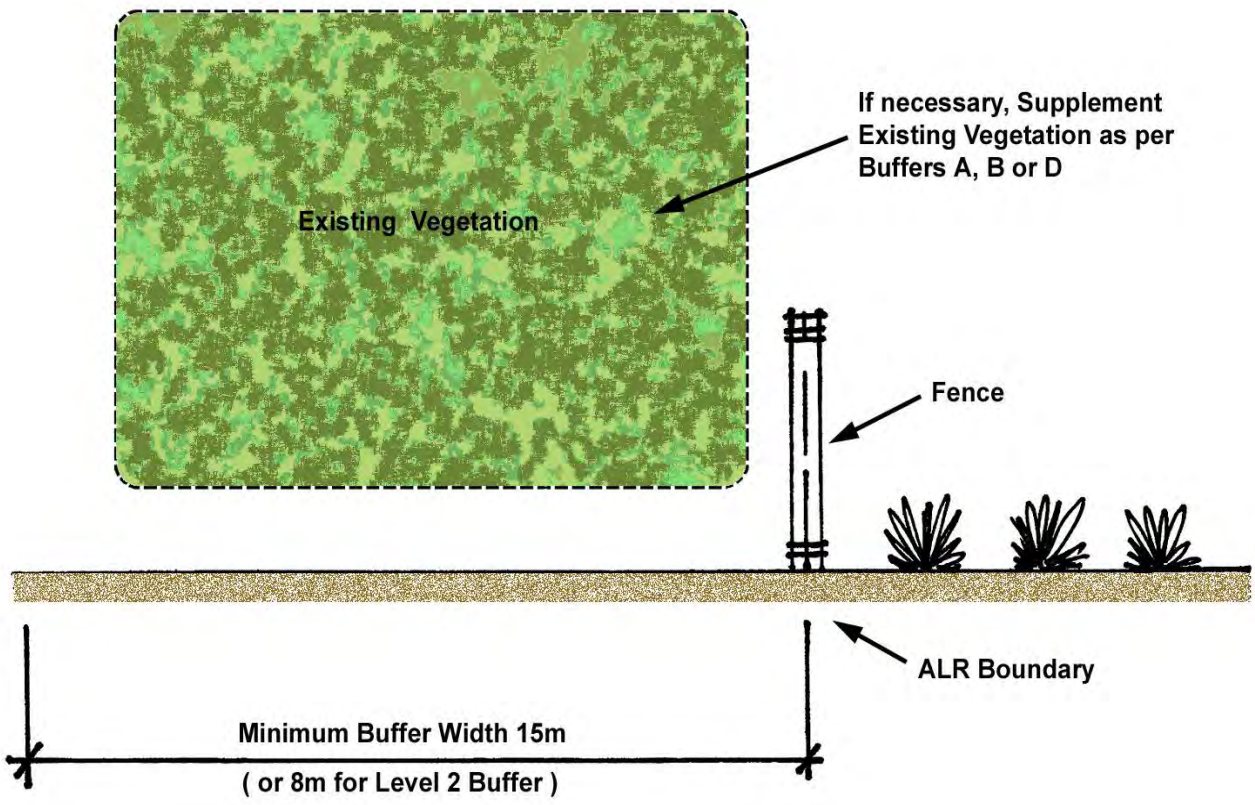
3.8.b Urban-Side Buffer B (with berm) – Design Specifications & Layout

Urban-side **Buffer B** includes all elements of **Buffer A**, as well as a berm with a minimum height of 2 metres above the adjacent grades. There are two alternatives for locating a fence, either at the lowest or highest points of the berm. This choice should be made according to design and use of adjacent properties. The main intent of the berm in this example is to provide increased storm water retention capabilities of the buffer, although a berm may provide more effective noise reduction and visual screening as well.



3.8.c Urban-Side Buffer C (Existing Vegetation) - Design Specifications & Layout

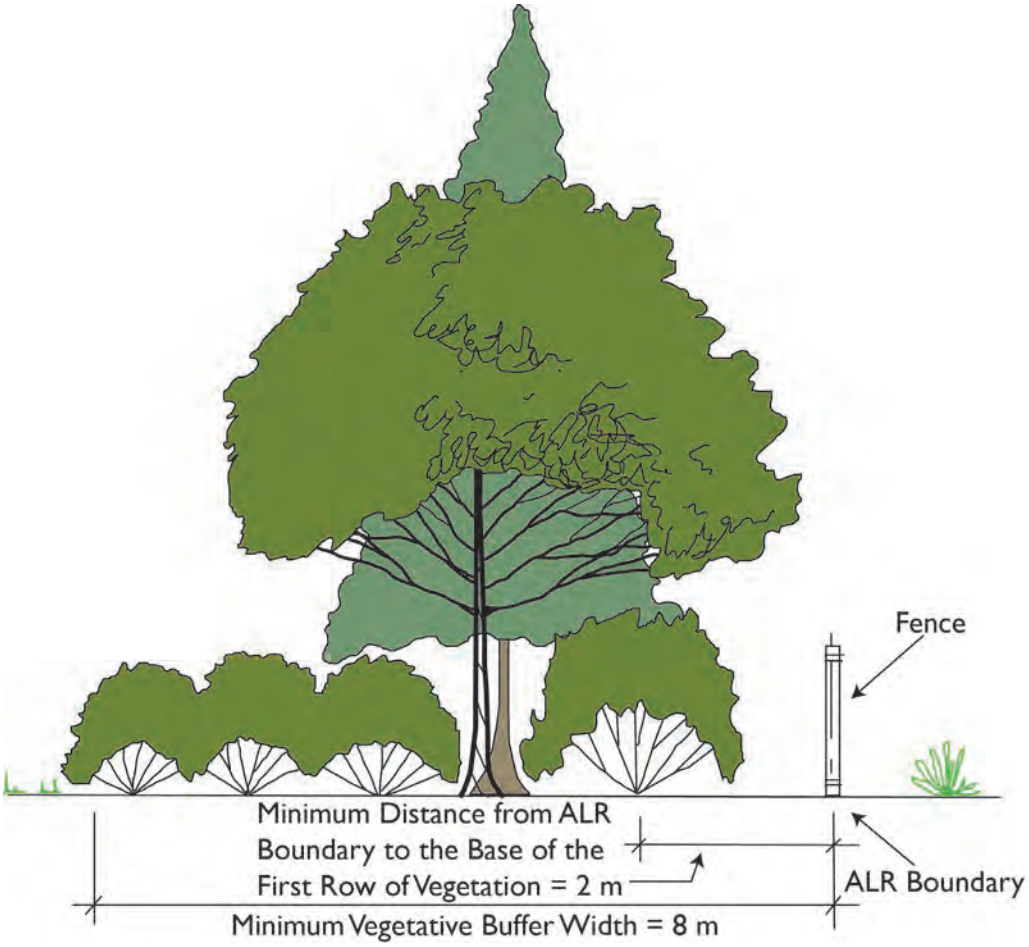
Urban-side **Buffer C** should retain existing vegetation and use either a solid wood or chain-link fence with a height of 6 feet (1.8 metres), built as per Appendix C or as per the local government's fencing specifications.



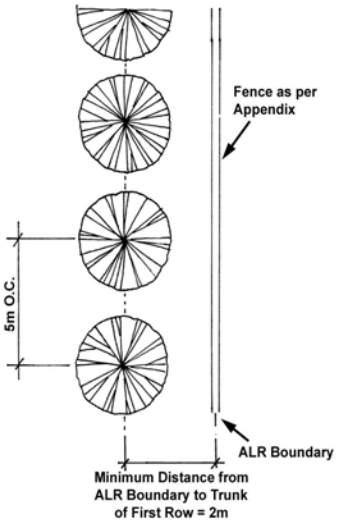
3.8.d Urban-Side Buffer D - Design specifications, layout & spacing

Urban-side **Buffer D** includes:

- single row deciduous or coniferous or just coniferous trees (see Appendix B for plant list)
- triple row trespass inhibiting shrubs (see Appendix B for plant list)
- single row screening shrubs (see Appendix B for plant list)
- solid wood fence or chain link fence with a height of 6 feet (1.8 metres) and built as per Appendix C or as per the local government's fencing specifications.

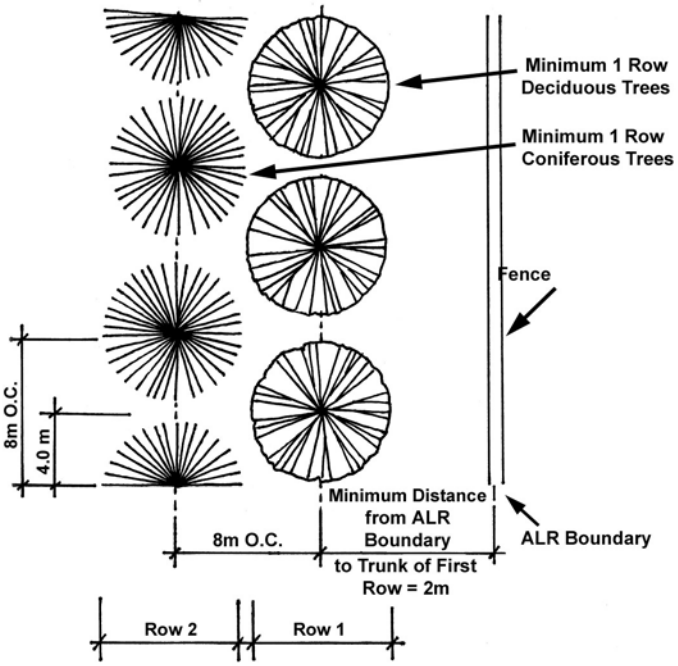


Single row screening shrubs

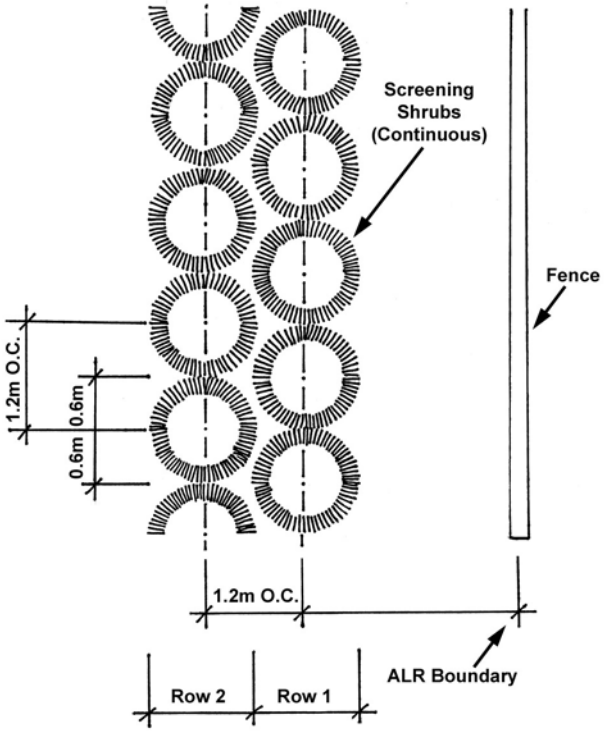


Single Row Deciduous/Coniferous Trees

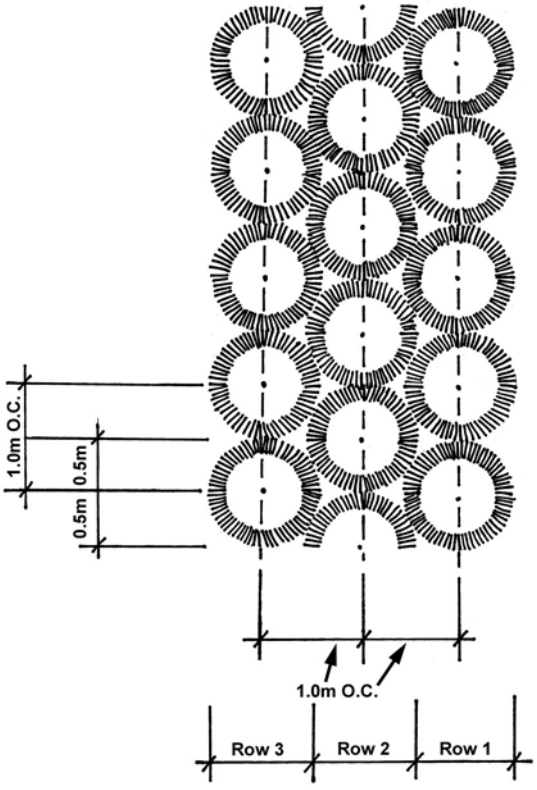
3.8.e Urban-Side Buffer Spacing (Buffers A, B or D)



Double row deciduous/coniferous trees



Double row screening shrubs



Triple row trespass inhibiting shrubs

3.9 Enhancing Agricultural Awareness

Communication tools can be used to enhance compatibility between farming and non-farm uses. Whenever possible, they should be used in conjunction with the other compatibility mechanisms listed in this Guide. These tools can increase the awareness of urban residents living near the farm edge about impacts from normal farm practices that they may experience. The awareness tools can be used even where existing urban development makes it impractical to address subdivision and housing design, or buffering.

Please refer to Appendix A for an example of how the agriculture awareness tools in this section can be applied within Development Permit Area guidelines.

3.9.a Disclosure statements

A disclosure statement, in the form of a restrictive covenant under section 219 of the *Land Title Act* can be a very effective tool. It can inform the prospective land buyer that the property is close to an agricultural area where acceptable farm practices may result in noise, dust, odour &/or other impacts during certain times of the year.

To be accepted by the Registrar of Land Titles, the covenant must have a "restrictive" aspect. Such "restriction" could include other urban-side tools discussed above – e.g., no building in the yards adjacent to the ALR; houses or other habitable buildings must have extra sound-proofing.

If new development occurs in the Edge Planning Area, within 300 metres of the ALR boundary, a covenant could be placed on land titles disclosing the proximity of the agricultural area and the potential implications.

3.9.b Signage

Local governments should consider using signs along the agriculture-urban boundary that inform residents and prospective purchasers of the proximity of farm operations within the immediate area and the possible activities associated with farm operations. Here are two sample buffer signs.

Farmers in this area sometimes:

- Make noises to keep wildlife away from crops
- Plough fields on dry, dusty days
- Spread manure to fertilize fields
- Spray crops to eliminate weeds or plant disease
- Drive big, slow machines between fields
- Harvest crops day or night when ripe

3.9.c Information Package

One final 'awareness tool' that local governments may wish to develop is an information package for new and/or existing residents located within the Edge Planning Area, 300 metres of the agricultural area boundary. This package could include:

- information on and the benefits of the vegetative buffer (assuming one is installed);
- a brief overview of the Provincial Farm Practices Protection legislation and acceptable farm practices;
- the Ministry of Agriculture booklet *The Countryside and You;*
- contact numbers for the Ministry and the Farm Industry Review Board (which reviews complaints about farm practices).

The information package should ensure local relevance by describing the types of farm operations commonly found in the area and use local references. The Ministry could help local government staff and the local agriculture organization or Agricultural Advisory Committee in preparing the package, if requested. This package will help to establish effective communication between farmers and their non-farm neighbours and ultimately assist in reducing potential conflict.

3.10 Case Studies

3.10.a City of Surrey

Context

The City of Surrey is the second largest municipality in BC, with a population exceeding 400,000. Rapid urbanization in Surrey has occurred alongside a significant farming industry. Approximately one-third of the land base in Surrey (nearly 10,000 hectares) is farmland. As a result, the City has longstanding experience in mitigating conflicts between urban and farming land uses.

Policy

For more than two decades, Surrey has employed a policy requiring buffers between urban and farmland uses. A buffer of 15 metres is required on the urban side, with a fence along the property line, vegetation and a restrictive covenant that requires the property owner to maintain the buffer. Neighbourhood Concept Plans and rezoning trigger the buffering requirements.

In addition to the buffer, maximum densities are established within ¼ mile of farmland. Directly adjacent to the farmland, no more than 2 units per acre are permitted. Farther from the edge, densities can increase to urban levels. Recent changes to the policy require that the buffer landscaping must be installed prior to the issuance of a building permit.

Lessons Learned

In general the City has found that the buffers, when installed and maintained properly, seem to be effective. Problems tend to arise with respect to enforcement and when developers negotiate relaxation of buffer requirements. When a property owner removes the landscape plantings within the buffer, the City has no recourse other than to take the owner to court to enforce the restrictive covenant. The City is currently exploring the introduction of bylaws and fines to increase enforcement abilities.

The City has also discussed the possibility of reversing the density policy, thereby allowing higher density strata projects adjacent to farmland. A strata council would perhaps be more reliable in maintaining the buffer, while residents of multi-family units could be more tolerant of the noise and other aspects of farming as compared to their estate lot counterparts.

Links

http://www.surrey.ca/business-economic-development/1428.aspx

3.10.b Regional District of Nanaimo

Context

The Regional District of Nanaimo has a population of about 140,000, approximately one quarter of whom live in unincorporated areas. Nearly 9% of the region's land base is designated in the Agricultural Land Reserve and rapid growth in some areas of the district has increased the size of the interface between urban and farmland uses.

Policy

The Regional Growth Strategy emphasizes the protection of rural areas and agriculture. As a result, the Official Community Plans for Arrowsmith/Benson, Nanoose Bay and Area G include Development Permit Area (DPA) requirements for farmland protection. In these communities, the concept of buffers to farmland was introduced during the OCP process and supported by the community.

The three farmland protection DPAs are largely similar. A DPA is required for developments within 15 metres or across a road from ALR land. A vegetated buffer is required and fencing can be provided if designed with reference to the ALC publications. A restrictive covenant must be registered on title.

There are a number of exceptions from the DPA requirements. If no building is proposed within the 15 metre buffer area, following DPA guidelines is not required. Most commonly, subdivisions in which the lot depth is 50 metres or more are not required to follow the guidelines in the DPA. As a result, only 7 permits have been issued in over a decade, despite ongoing development in the region.

As well, due to developer criticism, in the most recent set of regulations (Area G), DPA guidelines are not required for subdivisions separated from ALR land by a road.

Lessons Learned

The many exceptions dilute the effectiveness of the requirements, since very few development applications actually trigger a DPA. In addition, the latest DPA guidelines are further diluted, since a roadway is considered to be an adequate buffer. Fortunately, a lack of complaints from farmers and residents indicate that there have not been significant problems to date.

Links

RGS: http://www.rdn.bc.ca/cms/wpattachments/wpID436atID413.pdf

Arrowsmith-Benson OCP: http://www.rdn.bc.ca/cms.asp?wpID=403

Area G OCP: http://www.rdn.bc.ca/cms.asp?wpID=1722

Nanoose Bay OCP: http://www.rdn.bc.ca/cms.asp?wpID=1125

Part 4 – Farm-Side Edge Planning Tools

Application of the tools in Part 4 will require the use of a Farm Bylaw. Therefore, local governments will need to engage the Ministry of Agriculture, as well as their local farmers, early in the process in order to develop and implement the most effective farm-side edge planning tools for their community. Farm Bylaws require the approval ov the Minister of Agriculture, which in the case of edge planning would be expected only when urban-side restrictions are jointly applied.

4.1 Overview of Farm Side Guidelines

This Part contains the farm-side edge planning tools and implementation methods to promote compatibility. When they are applied within the ALR, they are only available to local governments regulated under section 918 of the *Local Government Act*. The farm side tools include the use of BOTH the siting of certain farm structures AND some farm management techniques in the Edge Planning Area (EPA). This combined approach enables agricultural lands at the urban edge to be utilized for farm purposes and not be subject to prohibition of uses.

These tools address four aspects of the farm operation:

1. Scale of farm to which the edge planning criteria will apply
2. Management practices that reduce the potential for nuisance concerns
3. Building setbacks that reduce the potential for nuisance concerns; and
4. Landscaped buffering that relaxes the setback requirements for select buildings.

These tools provide a starting point for local governments to explore their appropriate application. Each community will need to craft a package of tools that best suits their needs while maintaining agricultural options within the EPA.

The farm-side management techniques within the Guide are based on practices used by existing operations that are effective in mitigating land use conflict. These techniques will be subject to review and alteration as needed to account for changes in technology and management techniques. In order to ensure the most appropriate farm management and siting techniques are applied, AGRI staff will work with local governments and their farm community to tailor the requirements for their EPA.

4.2 Application of management and siting guidelines

The application of the farm-side edge planning techniques will vary within the EPA. Using the diagram on the next page as an example:

- Within the first 60 metres of the agricultural area boundary some agricultural structures, like manure storage, would be prohibited.
- Within the first 100 metres from the agricultural area boundary, there would be restrictions on the siting of some structures **combined with** special management requirements directly related to lessening conflict (e.g. fan orientation).
- Beyond 100 metres from the edge, structure standards would be the same as elsewhere in the agricultural area. In addition to the setback requirements from the edge, setbacks from lot lines not facing the agricultural area boundary will apply as per local government regulations. Throughout the entire 300-metre-wide EPA, there would be special management requirements for certain activities (e.g. manure application).

The setback distances and management guidelines in this Part are designed to achieve compatibility with an urban residential land user. If other urban uses exist next to the agricultural area boundary such as industrial, commercial, institutional, or passive recreational, and an EPA is deemed necessary, the setback distances and the level of farm management should be reduced to account for these differing or less-intensive urban land uses. For example, the 60 metre setback distance could be used along with the base set of management requirements (i.e. the management requirements currently associated with the 100 metre setback).

The diagram below shows where some of the tools can apply within the farm-side EPA.

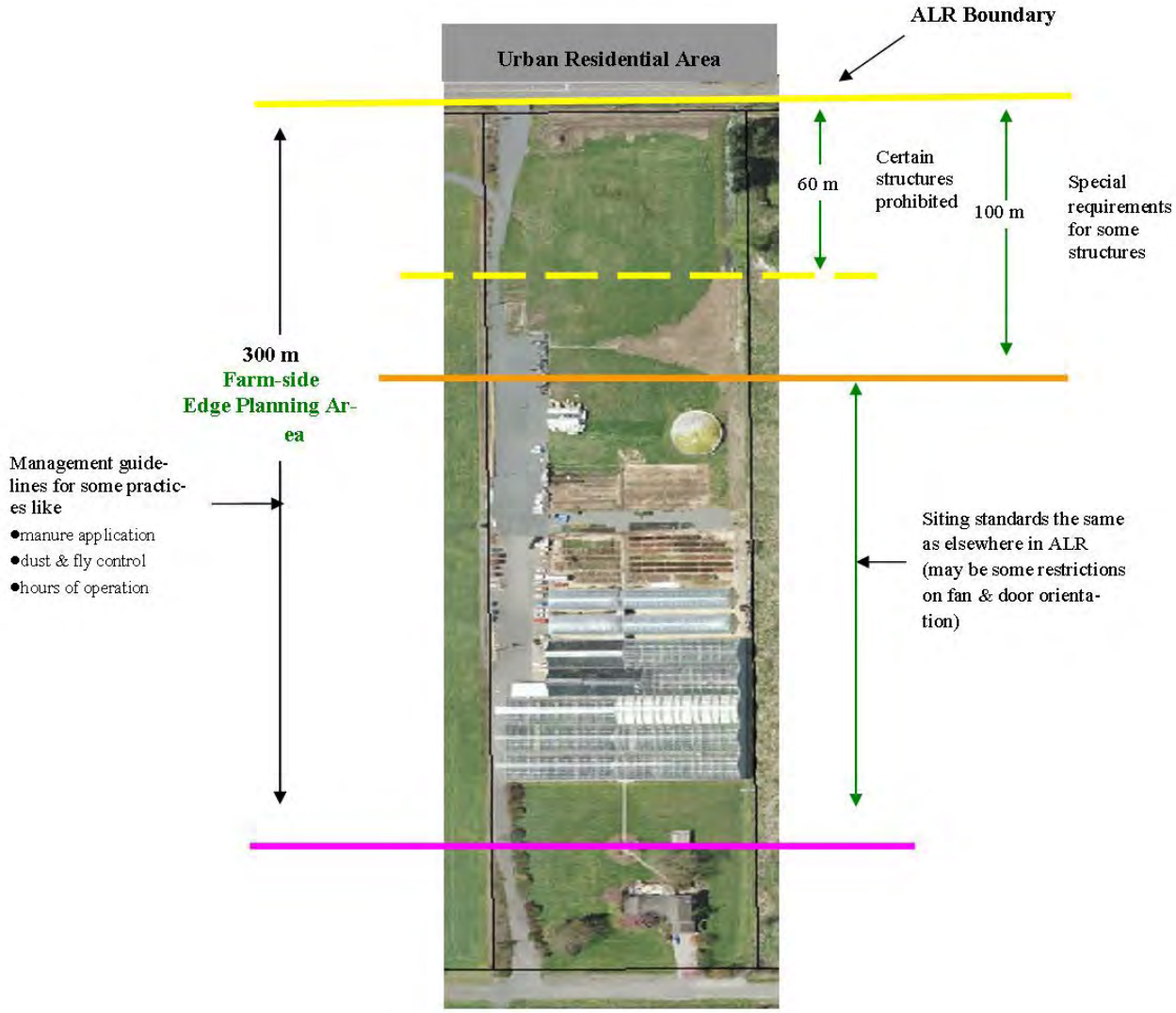


Figure 4: Farm-side Edge Planning Area Example

4.3 Role of the zoning and Farm Bylaws

Because the farm-side guidelines address both the siting of buildings and the management of farming activities, a combination of zoning and farm bylaw powers is required to implement these guidelines within the ALR.

A zoning bylaw regulates the land use and its arrangement on a site. To regulate farm activity, i.e., how a farm is operated, a Farm Bylaw will be needed. Section 917 of the *Local Government Act* establishes Farm Bylaws to address things like conduct of farm operations, types of buildings, machinery and equipment that are a pre-requisite to conducting a farm operation, and the siting of stored materials, waste facilities, and stationary equipment. Before a local government can adopt a Farm Bylaw, it requires approval by the Minister of Agriculture.

It is suggested here that all new farm operations that locate within the EPA should comply with both the siting and management requirements outlined in a 'hybrid' zoning-plus-Farm Bylaw.

Existing farms will need to be treated differently. With regard to setback requirements for farm structures, local governments could consider exempting existing farm structures, for example, those that existed prior to the date of the new bylaw would follow one set of setbacks, so as to not create non-conforming structures. Management requirements could be handled in a similar fashion. The local government may choose to exempt existing farms, in operation before the bylaw date, from complying with all or some of the requirements. A 'phase-in' approach could be taken whereby existing farms would have a certain number of years to come into compliance. Local governments will need to work with their farm communities to develop the most effective approach for their area.

Farms that are exempted could be provided with a generic edge planning brochure that offers ideas and suggestions for enhancing urban-rural compatibility. The farmer can decide whether or not to incorporate these 'good neighbour ideas'. A mechanism could also be put in place that provides farmers with exempted farms the opportunity to discuss with local government or Ministry staff options for mitigating conflict.

4.4 Edge Guidelines Matched to Farm Scale

Whether, and how, to apply edge planning guidelines within the Edge Planning Area (EPA) will depend on the "scale" of the farm operations along the edge. For small farms, it does not make sense to encourage or require them to follow any of these edge farm management and siting guidelines. They could simply follow the setback and coverage standards in the *Guide for Bylaw Development in Farming Areas* (Bylaw Guide).

How is a "small farm" defined? For edge planning purposes, it includes any farm operation which is below the following "minimum thresholds" for each commodity outlined and that various animal commodities total less than 10 agricultural units [2].

4.4.1 Minimum Thresholds

At or above the minimum thresholds listed below, farm operations would follow the EPA guidelines. Below these thresholds, the small farms would simply follow the Bylaw Guide. Included are:

- Greenhouses: 1,000+ square metres of enclosed structure
- All soil-based cropping farm operations
- Animal operations according to the table below[3][4]

2 An "agricultural unit" is defined as the live weight of 455 kg of livestock, poultry, farmed game or fur-bearing animals or any combination of them equalling 455 kg. See Appendix E for more information.

3 Except for free-range hogs - see section 4.6b

4 Except for ostriches, emus and mink - see section 4.8

4.4.2 Scale of Operation Within Various Distances of Agriculture-Urban Boundary

Farm operations within the distance groupings in the table not only would be limited by the maximum number of animals, but must also follow the special farm management requirements everywhere in the Edge Planning Area.

Type of Operation	Minimum Threshold - above which Application of Edge Planning Area Guidelines are applied	Maximum Number of Animals on a Lot at Any One Time; Distances to Agriculture-Urban Boundary	
		Structures Within 60-99 metres	Structures Within 100-300 metres
Special Management requirements	Farm management guidelines in section 4.5	Farm management guidelines in section 4.5 Also, farms in this area must follow other guidelines in sub-section 4.5x	Farm management guidelines in section 4.5
For types of animals not listed below	2 agricultural units	30 agricultural units	50 agricultural units
Beef and Small Ruminants	8+ feeders or 7+ cows (10+ agricultural units)	45 feeders or 43 cows (60 agricultural units) for uncovered confined livestock areas; and 87 feeders or 82 cows (115 agricultural units) for covered confined livestock areas.	120 feeders or 114 cows (160 agricultural units) for uncovered confined livestock areas; and 175 feeders or 160 cows (230 agricultural unis) for covered confined livestock areas
Dairy	lactating animals, 7+ cows (10+ agricultural units)	57 cows (80 agricultural units) for uncovered confined livestock areas; and 175 cows (245 agricultural units) for covered confined livestock areas	114 cows (160 agricultural units) for uncovered confined livestock areas; and 250 cows (350 agricultural units) for covered confined livestock areas.
Fur	50+ animals	250 animals	500 animals
Hog	36+ grower/finishers; 10+ sows (farrow to wean); 4+ sows (farrow to finish)	55 grower/finishers; 22 sows (farrow to wean operation); or 6 sows (farrow to finish operation); or Any combination totalling 12.5 agricultural units.	220 grower/finishers; 90 sows (with piglets in a farrow to wean operation); or 25 sows (with piglets in a farrow to finish operation); or Any combination totalling 50 agricultural units.
Horses	9+ horses (10+ agricultural units)	25 horses (30 agricultural units)	50 horses (60 agricultural units) for uncovered confined livestock areas.

Type of Operation	Minimum Threshold - above which Application of Edge Planning Area Guidelines are applied	Maximum Number of Animals on a Lot at Any One Time; Distances to Agriculture-Urban Boundary	
		Structures Within 60-99 metres	Structures Within 100-300 metres
Poultry (unless otherwise indicated, numbers pertain to animals contained indoors)	250+ broilers, meat chickens, layers or layer breeders (1+ agricultural unit) 200+ broiler breeders (1+ agricultural units) 100+ ducks (0.8+ agricultural units) 300+ free range birds (1.26+ agricultural units of layers or meat chickens; 6+ agricultural units of turkeys) 150+ pheasants (1+ agricultural units) 200+ pigeons (0.5+ agricultural units) 350+ quail (0.25+ agricultural units) 200+ silkie chickens (0.5+ agricultural units) 200+ turkeys (4+ agricultural units) 100+ turkey breeders (4+ agricultural units)	Chickens (Meat): 30,000 broiler equivalents (130 agricultural units); Chickens (Broiler Breeders): 15,000 birds (61 agricultural units/50 agricultural units); Ducks: 2500 birds (19 agricultural units) Emus contained outdoors: 100 birds (10 agricultural units) Ostriches contained outdoors: 50 birds (17 agricultural units); Pheasant: 9250 birds (28 agricultural units); Pigeons: 1800 birds (4 agricultural units) Quail: 46000 birds (30 agricultural units) Silkie chickens: 15,000 birds (35 agricultural units) Turkeys: 25000 birds (500 agricultural units); Turkey breeders: 10000 birds (220 agricultural units) Free range bird density must not be higher than 1 agricultural unit per 100m^2	Chickens (Broiler Breeders): 60,000 birds (400 agricultural units) Chickens (Layers): 118,000 birds (490 agricultural units) Chickens (Layer Breeders): 30000 birds (140 agricultural units) Chickens (Meat): 225000 broiler equivalents (950 agricultural units) Ducks: 5000 ducks (38 agricultural units) and the density for ducks should not exceed: Meat Ducks - 2.5 square feet (0.23m^2) per bird Developing Duck Breeders - 2.7 square feet (.25m^2) per bird Layers/Breeders - 3 square feet (0.24 m^2) per bird Emus contained outdoors: 200 birds (20 agricultural units) Ostriches contained outdoors: 100 birds (35 agricultural units) Pheasant: 65000 birds (200 agricultural units) Pigeons: 8000 birds (18 agricultural units) Quail: 350000 birds (230 agricultural units) Silkie chickens: 130000 birds (270 agricultural units) Turkeys: 50000 birds (1000 agricultural units); Turkey Breeders: 20000 birds (670 agricultural units) Free Range bird density must not be greater than 1 agricultural unit per 100m^2

4.5 Manure Handling

Special management guidelines that apply throughout the designated EPA have been established for manure storage and application. The guidelines for manure storage were developed with the assistance of the BC Ministry of Agriculture resource management specialists. By addressing the type of manure, how it is stored, and how it is applied to land, the impacts of odour will be mitigated effectively.

4.5.1 Manure Storage

- Only *solid manure* storage is permitted for all commodities, except lactating dairy which can have either *solid manure* storage or *enclosed liquid manure storage*.
- Cover manure in areas with more than 600 mm precipitation during the months of October and April as per Section 9 of the Code of Agricultural Practice for Waste Management.
- Beef - clean feedlot loafing areas at least once every 9 months and dispose of manure.
- Horse - remove manure from paddocks/turn out pens at least once a week and clean out the manure storage area at least once every 6 months and dispose of manure.
- Fur, Hog & Poultry - maintain moisture content of manure in barns at 35% or less.
- Fur – remove manure from pens at least once a week (this requirement can be relaxed during whelping season from April 20th to July 1st).

4.5.2 Solid Manure Application

- Beef, Hog & Poultry - for bare soil application of *solid manure*, incorporate manure within 48 hours of applying to the soil.
- Fur - for bare soil application of *solid manure*, incorporate manure within 4 hours of applying to the soil.

4.5.3 Liquid Manure Application

- No aerial application of *liquid manure*
- No liquid chicken or hog manure application
- Application on bare soil:
  - injection method or
  - surface application method if incorporated within 4 hours of application
- Application on crops (this includes pasture/grassland):
  - *sub-canopy manure deposition method* with a 5-10 year phase in period for existing farms

4.6 On-farm Composting

Special management guidelines that apply throughout the designated EPA have been established for on-farm composting. These guidelines are separated into two categories - mushroom operations and all other farm operations. By addressing how the compost is handled, the types of waste composted, and the volume of production, the impacts of odour will be mitigated effectively.

4.6.1 On-farm Composting for Mushroom Operations

- Use impermeable surfaces for all composting activities and compost storage.

- Cover composting materials (except straw) and compost between October 1 and April 1 in areas with more than 600 mm average precipitation during those months.
- Blending, grinding and mixing of raw materials can occur in an uncovered area but should be transferred to an enclosed composting facility in the same calendar day.
- House the *on-farm composting* process in an enclosed building.
- Maintain *aerobic decomposition* through design, mechanical turning or porous ventilation.
- Collect and treat the exhaust generated through the composting process with a wet scrubber and bio-filter designed by a professional, BC licensed engineer; the wet scrubber and bio-filter should remove a minimum of 90% of the odours.
- Provide an air quality monitoring program developed by a BC licensed professional engineer. This program should provide easy verification that the system, including the bio-filter, is operating as designed; monitor and submit reports annually and include a description of the composting facility and the treatment works, a statement as to whether the composting facility is operating as designed, and the annual compost production in cubic metres at the actual moisture content.
- No *liquid manure* may be composted.
- Manage *solid manure* used for composting according to the commodity-specific EPA guidelines.
- Waste to be composted that is not generated on the farm unit is limited to *solid agricultural waste*.
- The volume of compost produced, including unfinished and finished, is limited to 300 m^3 per week.
- Manage storm water and waste water per the Bylaw Guide.

4.6.2 On-farm Composting for all Farm Operations, except Mushroom

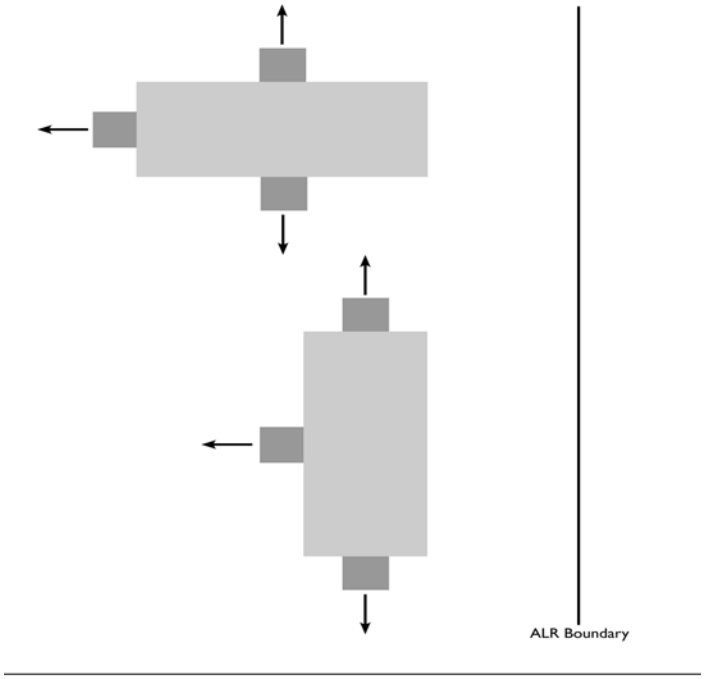
- Use impermeable surfaces for all composting activities and storage.
- Cover composting materials and compost between October 1 and April 1 in areas with more than 600 mm average precipitation during those months.
- Maintain *aerobic decomposition* through design, mechanical turning or porous ventilation.
- No liquid hog or poultry manure may be composted.
- Manage *solid manure* used for composting according to the commodity-specific EPA guidelines .
- Agricultural waste to be composted that is not generated on the farm is limited to *agricultural solid waste*, excluding mortalities. Lawn clippings and branches may be composted if done in accordance with the *Environmental Management Act* or the Organic Matter Recycling Regulation (BC Reg 18/2002).
- The maximum total volume of compost production on site, including mixed and finished compost, is limited to 100 cubic metres at any one time.

4.7 Noise, Odour and Dust Management

Special management guidelines that apply throughout the designated EPA have been established to deal with noise, odour, and dust management. These guidelines are separated into two categories – general and commodity specific. By addressing management of specific farm activities, the impacts of noise, odour, and dust will be mitigated effectively.

4.7.a General – Noise, Odour and Dust Management

- The following activities are limited to being conducted between 6 am and 10 pm:
  - loading and unloading of hogs and beef;
  - feed milling; and
  - all input deliveries (e.g. feed, woodwaste, mushroom compost).
- Cover or enclose *woodwaste* storage.
- Locate on-farm feed mills on the opposite side of the farm building to the agriculture-urban boundary.
- Provide hoods for all fans 36 inches or less.
- Orient fans parallel to or away from the agriculture-urban boundary.
- Fur farms must orient fans on the side of the building furthest away from the agriculture-urban boundary.



Fan orientation for:

- Beef farms
- Dairy Farms
- Greenhouses
- Mushroom Farms
- Soil-based crops

4.7.b Commodity Specific – Noise, Odour and Dust Management

The following management requirements are categorized according to the commodity and must be employed in addition to the general management requirements.

Beef, Small Ruminant and Dairy Farm Operations

- No *Category A noise scare devices* should be located within 300 metres from the agriculture-urban boundary; and *Category B noise scare devices* should be located 200 m or more from the agriculture-urban boundary.
- Feed bunks and water troughs should have a minimum 2.5 metre concrete aprons that are sloped away to facilitate drainage.

- Collect contaminated runoff from *confined livestock areas* and store with manure.
- Collect & store silage effluent with manure.

Fur Farm Operations

- Contain all feed storage, mixing, thawing, barrel and utensil cleaning in a room with concrete floors sloped to a drain, then to a tank and field tile for final disposal. The room should be fly proof, rat proof, and contain smooth walls to a height of 2 metres to facilitate adequate cleaning.

Hog Farm Operations

- No free range hogs within 60 metres of the agriculture-urban boundary

Horse Farm Operations

- Minimize dust generation in outdoor riding arenas by watering.
- For outdoor riding arenas or exercise tracks that are less than 30 m from the agriculture-urban boundary, install a vegetative buffer between the arena or track and the agriculture-urban boundary to minimize dust drift as per buffer requirements in Section 12, page 43.

Poultry Farm Operations

- 6 am – 10 pm for:
  - Hatching egg pick up (Breeder Birds); egg pick up (Layers); poultry stock delivery
  - Clean-out and sanitization of buildings
- Turn off truck engines for adult bird loading; use of truck engine brakes is prohibited.
- Use nipple drinkers for ducks.
- No free range ducks within 60 metres of the agriculture-urban boundary.
- Remove mortalities from barn daily and dispose of in sealed containers, incinerate, or compost.
- Broken eggs must either be stored in sealed containers and disposed of off-farm or applied to the land and incorporated into the soil within the same calendar day (Layers and Breeder Birds).
- Ensure all new or expanding production buildings have concrete floors.

Mushroom Farm Operations

- For mushroom buildings located between 30–100 m from the agriculture-urban boundary install a vegetative buffer between the mushroom building and the agricultural area boundary.

Soil-based Crop Farm Operations

- Operate *Category A* and *Category B noise scare devices* so they are consistent with BC Ministry of Agriculture's Farm Practices Wildlife Damage Control guidelines, notably a 300 metre setback from the ALR boundary for Category A devices and 200 metres setback for Category B devices.

4.8 Light Management

Special management guidelines that apply throughout the designated EPA have been established to deal with lighting from greenhouses. In addition, all greenhouses that are located within 15 to 100 metres of the agriculture-urban boundary need to install a vegetative buffer.

Greenhouse Operations

- Night lighting designed to exceed 5,000 lux must be set back at least 100 m from the ALR/Urban bound-

ary;

- and either
  - ensure there is a minimum of 4 hours of continuous darkness starting at 6 pm or
  - install interior or exterior opaque screening of side walls to prevent horizontal light emissions of 25 lux (street lamp intensity) measured at the agriculture-urban boundary.
- Already established greenhouses with currently existing night lighting must adapt to 100 m setback restrictions within 10 years.
- For greenhouses located 15-100 m from the agriculture-urban boundary install a vegetative buffer between the greenhouse and the agriculture-urban boundary as per buffer requirements outlined in Section 4.12.

4.9 Safety and Security Measures

Special management guidelines that apply throughout the designated EPA have been established to address safety issues associated with ostriches and emus, which have a potenitally harmful kick, and mink, which can be damaging to native wildlife.

Ostriches and Emus

- Install a vegetative buffer (farm-side Buffer A or B) and a 2 metre high chain link or solid wood fence along the agriculture-urban boundary or install double fencing comprised of 2 metre-high chain link or solid fence along the agriculture-urban boundary and a second security fence inside the agricultural area with a minimum distance of 2 metres between the fences.

Mink

- Establish a security fence to contain animal escapes.

4.10 Setback Distances

The following setback distances apply to buildings and structures located within designated EPAs. Setback distances are measured from the ALR/Urban boundary on the farm side.

15 metres for:

- Greenhouses
- Crop storage

30 metres for:

- Mushroom barns
- Spent compost storage

50 metres for:

- Boilers
- Open loading areas
- Refrigeration units

100 metres for:

- Agricultural solid waste storage
- Composting and finished compost storage

- Confined livestock areas (except horse paddocks, which can be set back 15 m)*
- Feed mill and feed storage*
- Incinerators
- Livestock and poultry housing*
- Manure storage*
- Milking facilities*
- Silage Storage*
- Medical Marihuana Production Facilities.

* The setback for these buildings and structures can be reduced to **60 metres** (horse paddocks can be set back 7 metres) provided the additional management requirements in section 4.11 are met.

4.11 Additional Management Requirements for Buildings and Structures (60-99 metres)

For buildings and structures located 60-99 metres from the Agriculture-Urban Boundary, the 100 m setback requirement can be reduced to 60 m for certain buildings and structures provided the *additional* management requirements listed below are met, the maximum number of animals in the table in Section 4.4 are followed, and a vegetative buffer is installed as per the guidelines in Section 4.12.

4.11.1 Extra Manure, Noise, Odour and Dust Management

- Beef and Dairy - cover confined livestock areas in areas with more than 600 mm of precipitation during October to April.
- Dairy - handle and store manure as a solid only.
- Beef & Dairy - orient fans parallel to or away from the agriculture-urban boundary.
- Fur, Hog and Poultry - locate load out doors so they do not face the agriculture-urban boundary.
- Hog and Poultry - orient fans on the side of the building furthest away from the agriculture-urban boundary.

4.12 Farm-Side Buffers

There is opportunity to reduce the setback for certain buildings and structures from the agriculture-urban boundary to 60 metres if certain management requirements are met, animal numbers are reduced, and a vegetative buffer is installed. The following guidelines outline the design criteria for farm-side setbacks and vegetative buffers.

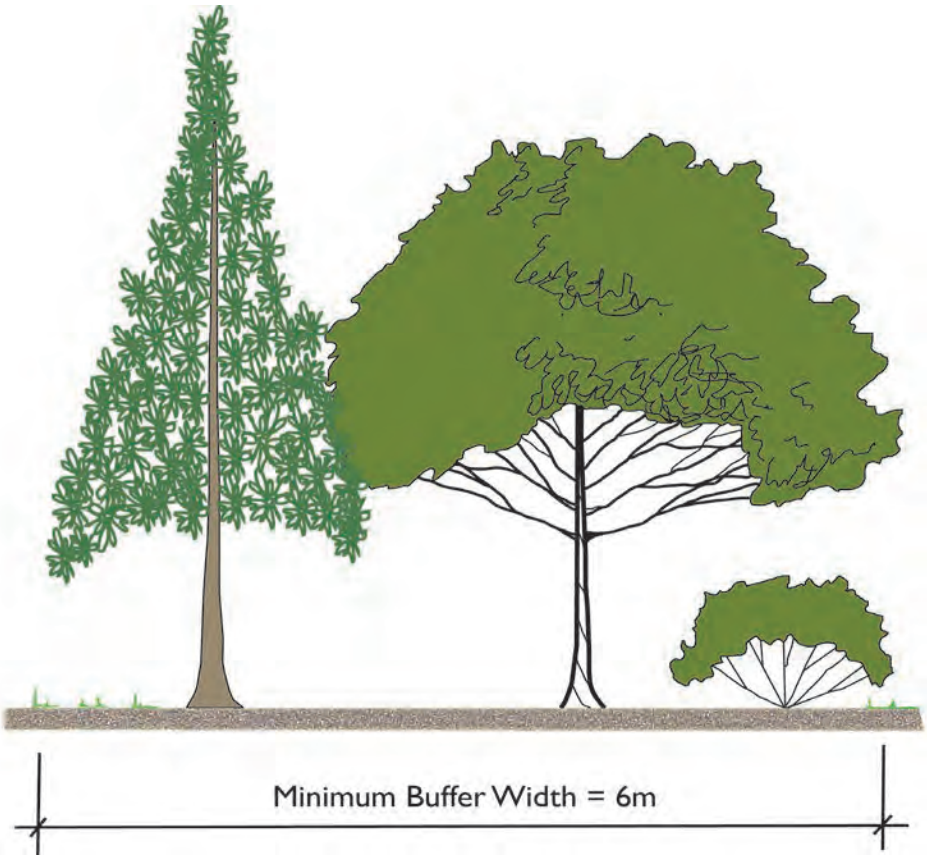
Farm-Side Setback & Buffer Design Criteria			
	Setback Distance and Buffer Size	Buffer Height	Buffer Design Features
Farm-side Set-back and Buffer	**Setback** **60 m** from the agriculture-urban boundary (except horse paddocks = **7 m**) **Buffer Width** **6 m -** buffer is located within the 60 m setback **Exception for Greenhouses**: Buffer applies to greenhouses located **15-100 m** from the agriculture-urban boundary	**6 m** (finished height)	➤ The length of the vegetative buffer should be established within 15 m of the farm building or structure and extend a minimum of 5 m beyond the length of the wall facing the agriculture-urban boundary. ➤ Plant either a double row of evergreen conifers or mixed planting of deciduous/coniferous tree and hedging/ screening shrub species with foliage from base to crown – minimum of 60% evergreen conifers. ➤ A berm with hedging/screening shrubs is also acceptable provided the target farm structures are screened. ➤ Crown density of approximately 50-75%. ➤ Design specifications and layout will be as per Farm-side Buffer A or B.

In addition to helping mitigate conflicts with urban neighbours, buffers can provide additional benefits and even economic opportunities for farm operations.

4.12.1 Farm-Side Buffer A (no berm) – Design specifications and layout

The Farm-side **Buffer A** shall include:

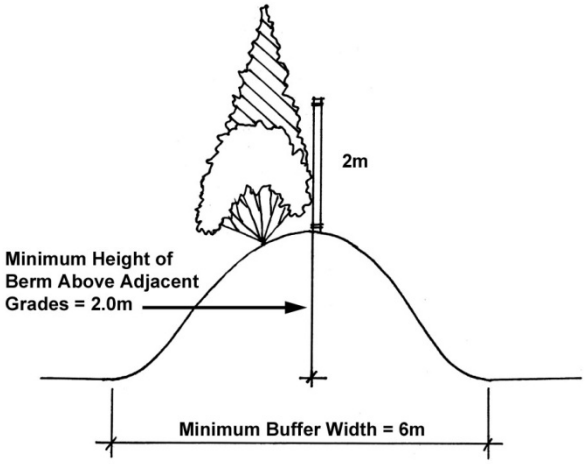
- double row coniferous or mixed deciduous/coniferous trees (See Appendix B for plant list)
- single row hedging/screening shrubs (See Appendix B for plant list)



4.12.2 Farm-Side Buffer B (with berm) – Design specifications & layout

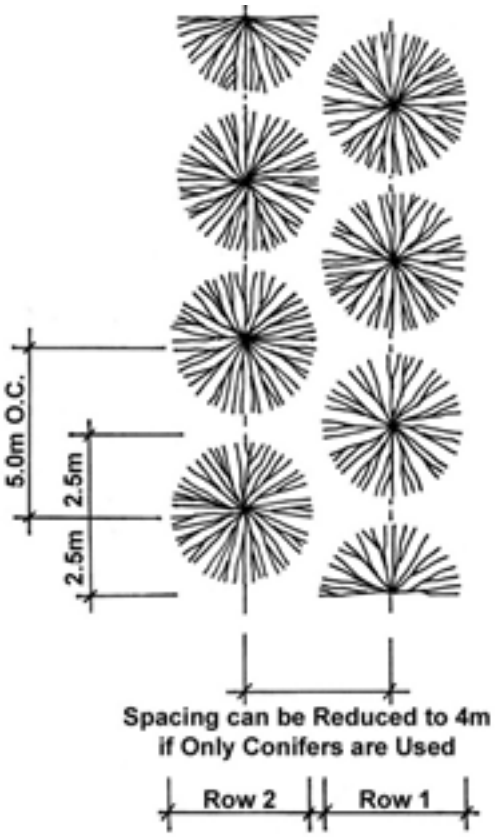
The Farm-side **Buffer B** shall include:

- single row hedging/screening shrubs (See Appendix B for plant list)
- berm with minimum height 2 m above adjacent grades
- for ostriches and emus, install solid wood fence or chain link fence with a height of 6 feet (1.8 metres) and build as per the fencing specifications outlined in Appendix C.



4.12.3 Farm-side Buffer A or B – Spacing

Single row hedging/screening shrubs



Double row coniferous or mixed trees

List of Appendices

Appendix A - Development Permit Areas and Guidelines to Protect Farming

Appendix A provides an example of development permit area (DPA) provisions that can be applied in identified edge planning areas on the urban side to protect farming and promote urban-rural compatibility. This example is not exhaustive, but is a sample of objectives and guidelines and should be adapted to meet the specific needs of each community[5].

Annotated Sample DPA for the Protection of Farming

Designation:

The Farmland Protection Development Permit Area is shown on Map __ and includes all land within 300m of the urban side boundary of the Agricultural Land Reserve (ALR).

Research has shown that impacts from farming such as noise, dust, odour and spray drift, etc. can be experienced up to 300 m on the urban side.

Authority:

The Farmland Protection Development Permit Area is designated a development permit area pursuant to Section 919.1(1)(c) of the *Local Government Act* for the protection of farming.

Justification:

This Development Permit Area is adjacent to land that is within the ALR. The BC Agricultural Land Commission (ALC) and the BC Ministry of Agriculture (BCMA) have acknowledged that the development of lands adjoining or reasonably adjacent to farmlands may compromise the agricultural use of ALR lands. These lands therefore require protection in order to ensure long-term agricultural use.

Fifteen metre vegetated buffers and 30 metre setbacks are effective at preventing trespass, litter, crop damage, and harassment of livestock, as well as mitigating the effects of noise, light and dust or spray drift, and odour. The incorporation of vegetated buffers and setbacks between developed lands and agricultural lands that meet the specifications of the BCMA's Guide to Edge Planning will promote greater compatibility between the uses while protecting the agricultural uses from urban impacts. Addressing subdivision layout, building design and stormwater management, employing disclosure statements and signage, and incorporating landscaped and siting buffers between new subdivisions and ALR lands will protect the agricultural use of the ALR lands and minimize complaints for the benefit of both farm and urban residents.

It may be tempting to compromise and reduce the setbacks and vegetated buffer width to acheive acceptance of the DPA, but the research does not support anything less than 15 m vegetated buffers and 30 m setbacks as being effective at mitigating the full suite of potential impacts.

Objectives:

1. To plan and regulate new development in a manner that protects the long-term agricultural potential of adjoining or reasonably adjacent

5 Development Permit Areas and guidelines are not the only ways to establish urban-side buffers. A local government may wish to take a more regulatory approach by including the buffer requirements in screening and landscaping provisions of a zoning bylaw. Another possibility is to secure the buffer through park dedication at time of subdivision.

agricultural lands.

2. To minimize the impacts of urban development on agricultural lands.
3. To protect farmland by mitigating conflict between agriculture and residential, commercial, industrial and institutional uses.
4. To provide greater definition of the boundary of the ALR.
5. To develop effective vegetated buffers along the boundary of the ALR.
6. To visually screen farmland from adjoining or reasonably adjacent urban development.
7. To mitigate adverse effects of agricultural operations such as noise, dust and odour on nearby urban residents and users.
8. To increase the compatibility of adjacent land uses with farm uses.
9. To protect agricultural water supplies from non-agricultural uses and development of the landscape.

Development Approval Information:

This Development Permit Area is designated as an area for which development approval information (DAI) may be required in accordance with Section 920.01(1)(c) of the *Local Government Act*, and the [local government]'s Development [Application Procedures/Approval Information] Bylaw No. ___. The designation of this area as an area for which DAI may be required is based on the special conditions or objectives supporting the designation of the DPA and the [local government] may require applicants to provide reports, studies or information on the anticipated impacts of the proposed activity or development and appropriate mitigation measures.

Designating the DPA as a DAI area allows the local government to ask for reports and studies as required.

Applicability:

All development in this Development Permit Area is exempted from the requirement to obtain a Development Permit, except:

1. Subdivision of land that adjoins agricultural land or that drains into agricultural land;
2. Construction of new residential dwellings and residential accessory buildings within the DPA or additions to existing residential dwellings located partially or wholly within 30m of the ALR boundary;
3. Construction of buildings or structures located within 30 m of the ALR boundary.
4. Construction of a building or structure that would result in more than ___ m2 of new impervious surfaces, or alteration of the existing drainage regime on properties that adjoin or drain into agricultural land

Prior to commencing any of these activities, the owner must obtain a development permit in accordance with the Farmland Protection Development Permit Area Design Guidelines

The reverse wording shown here works in situations where the focus of the DPA is quite narrow as it clarifies that most minor development occuring within the 300 m DPA is exempt from having to obtain a DP but is required for those types of development that are of most concern. For instance, new subdivisions that are within 300m that have the potential to have drainage and stormwater impacts on farms would be required to get a DP, whereas someone building a minor addition to an existing residence that is greater than 30m from the ALR boundary would not. Impervious surface area has been left blank for local governments to fill in based on local topography and soils.

Exemptions:

For clarity, the following activities are also exempt from any requirement for a development permit:

1. Any construction occurring outside of the Development Permit Area.
2. The placement of impermanent structures such as benches, tables and garden ornaments, provided they are not located within a required vegetated buffer area.
3. Repair, maintenance, alteration or reconstruction of existing legal buildings, structures or utilities, including those that are legal non-conforming, providing there is no expansion of the footprint.
4. Farm operations as defined in the *Farm Practices Protection (Right to Farm) Act* and farm uses as defined in Section 2(2), (3), (4) and (5) of the Agricultural Land Reserve Use, Subdivision, and Procedure Regulation.
5. Construction, repair, maintainance or alteration of a residential fence that is located further than 15m from the boundary of the ALR.
6. Construction, repair, maintainance or alteration of a non-residential fence that is located further than 8m from the boundary of the ALR.
7. Construction, repair, maintanance or alteration of a residential or non-residential fence within 15m or 8m respectively of the boundary of the ALR, so long as the disturbance of vegetation is restricted to 0.5 metres on either side of the fence.
8. The construction of a small residential accessory building such as a pump house, gazebo, garden shed or play house provided:
   - The building is located a minimum of 15 metres from the ALR boundary
   - No shrubs or trees are removed; and
   - The total floor area of the accessory building is less than 10 m2.
9. subdivision of land for public utility, nature reserve, or park uses.

In cases where reverse applicability wording is used, this section can be used to further clarify which minor activities are exempt, otherwise this section can be used as is typical.

Guidelines:

Development permits issued in this area shall be in accordance with the guidelines set out below:

General Guidelines:

1. A disclosure statement in the form of a restrictive covenant under section 219 of the *Land Title Act* must be placed on title of all newly created lots located partially or wholly within the DPA. This covenant must specify that the lot is located near a farming area, that the following impacts can be expected:
   - Noise from farm operations at various times of the day, including propane cannons and other devices used to deter wildlife
   - Farm odours and chemical spray
   - Unappealing aesthetic appearance of fields (unkempt, storage of materials, etc.)

Impacts from farming may be experienced as much as 300m from the Urban-ALR edge. As such, the covenant should be registered on all lots in the DPA. For some developments that are not immediately adjacent to the edge, this may be the only requirement of the permit.

- Light from greenhouses

and that the following restrictions apply:

- Vegetated buffers are to be maintained
- No habitable structures shall be built within 30m of the boundary of the ALR

2. The [Local government] may consider variances to subdivision or building and structure siting or size regulations to enable developments to meet the objectives of this DPA.

Subdivision Design:

Local governments can do much to reduce speculation (which increases development pressure and the cost of farmland) by asking for farm-friendly subdivision designs.

1. Subdivision design must minimize potential negative impacts that may occur between farm and non-farm land users. Subdivision design and construction must minimize erosion. Ground water quality and levels shall be maintained through an integrated stormwater management plan prepared by a professional engineer or qualified professional.
2. Subdivisions must be designed to allow for clustering of lots, buildings and structures away from agricultural land.
3. Where a subdivision will require 5% parkland dedication as stipulated in section 941 of the *Local Government Act*, the dedication should be located next to the ALR boundary and include the required landscape buffer.
4. New single family residential lots larger than 0.10 ha must not be located along the boundary of the ALR.
5. Road endings or stubs which point directly into the ALR are not permitted except where required for access by farm vehicles.
6. Half roads and half cul-de-sacs along the boundary of the ALR shall not be permitted.
7. The road pattern must be designed in such a way to direct urban traffic away from routes used by farmers to move equipment.
8. Extensions of utilities such as water and sewer lines into the ALR are not permitted.
9. Public and strata open spaces should be located next to the boundary of the ALR, with the required landscape buffer forming part of the open space. Open spaces should be designed for water retention capacity and stormwater attenuation.

Large single family lots tend to generate more farm practices complaints than smaller lots or townhouse or apartment developments.

Stormwater Management;

The amount of impervious surface is left blank for local governments to fill in based on their local topography and soils.

1. Applications for development that create more than ___m2 of impervious surface must include an integrated stormwater management plan and/or drainage plan prepared by a Professional Engineer or other Qualified Professional. This plan must outline any expected changes to the drainage regime that will result from the proposed development, and identify any conditions that should be incorporated into the development permit to protect property from flooding, erosion or from other undesirable impacts as a result of changes to stormwater runoff. Particular attention should be paid to ensuring that drainage changes will not result in detrimental impacts such as

flooding or reduced groundwater availability on agricultural lands. Whereever possible, the plan should include stormwater detention and slow release into the system, and/or rainwater harvesting for on-site needs (such as landscaping).

2. Open spaces with landscaped buffers that are designed with water retention capacity or adequate rainwater/storm drainage system shall be located along the ALR edge.
3. Alteration of natural drainage systems that disrupt the natural hydrological cycle shall not be permitted.
4. Development must not result in the pollution of surface or groundwater supplies.

Building Location:

1. No residential building shall be located within 30m of the boundary of the ALR.
2. No commercial and industrial building shall be located within 15m of the boundary of the ALR.
3. Parks and nature reserves situated adjacent to the ALR should be designed to locate active recreation facilities, such as playing fields, as far as possible from the boundary of the ALR.
4. Passive recreation and parking facilities with permeable surfaces could be located near the boundary of the ALR provided there is a vegetated buffer that will inhibit trespass along the boundary.
5. Applications to locate any of the above noted buildings, structures or recreational facilities closer than stipulated above shall be accompanied by an assessment completed by a qualified professional outlining how the objectives of the DPA will still be met.
6. Buildings and structures must be clustered away from the boundary of the ALR.

15m vegetated buffers are effective at mitigating the impact of noise, and intercepting dust and chemical sprays, as well as preventing tresspass (with appropriate plant selection) and providing a visual screen. 8m vegetated buffers will mitigate the impacts to a level acceptable in non-residential areas, but will not mitigate the full suite of impacts.

Landscaping:

1. For parcels located immediately adjacent to the ALR, a vegetated buffer must be provided and maintained parallel to and along the urban side of the ALR boundary in accordance with the following criteria:
   - All vegetated buffers intended to screen residential development from ALR lands must be continuous and be a minimum 15m in width as measured as a perpendicular distance from the ALR boundary.
   - All vegetated buffers intended to screen commercial or industrial uses from ALR lands must be continuous and be a minimum 8m in width as measured as a perpendicular distance from the ALR boundary.
   - All vegetated buffers must be designed, established and maintained in accordance with the British Columbia Ministry of Agriculture (BCMA) Guide to Edge Planning, Section 3.6, Urban-side Buffers - Urban-side Buffer Design Criteria (http://www.agf.gov.bc.ca/resmgmt/sf/publications/823100-2_Guide_to_Edge_Planning.pdf).

- All buffer areas must be landscaped using materials set out in Appendix B of the BCMA Guide to Edge Planning. If appropriate vegetation already exists on the site it must be retained as part of the buffer. Existing vegetation may serve as the entire buffer, provided a registered landscape architect has provided a report stating that it will meet the objectives of this development permit area.
- Plant layout, spacing and support must be in accordance with the BCMA Guide to Edge Planning, Section 3.6 Urban-side Buffers - Design Specifications and Layout.
- The design and construction of the landscaped buffer must be to the standard of the BC Society of Landscape Architects/BC Nursery Trades Association publication BC Landscape Standards, most recent edition.
- Irrigation must be provided during the first 2 years after planting and permanent irrigation must installed where the landscape architect indicates it is necessary to ensure long term plant survival.
- Vegetated buffers shall be installed prior to final subdivision registration or the issuance of any building permit. A letter of credit should be deposited with the [local government] in an amount equal to 150% of the cost of the work to be completed.
- Paths and/or passive recreational uses should typically not be part of the vegetated buffer. Paths and/or passive recreational uses that are necessary to complete a trail network or that form part of a parks or trail plan may be included as part of a vegetated buffer; however, they must not take up more than one-third the width of the buffer and must be located away from the ALR boundary. The remaining two-thirds of the buffer must be designed with special attention to inhibiting trespass onto ALR land and a registered landscape architect must certify that the overall effectiveness of the buffer will be the same as if the entire width were vegetated and that it will meet the objectives of the development permit area.
- If adequate fencing does not currently exist, fencing must be constructed where a subdivision adjoins the ALR boundary. Fencing must be constructed in accordance with local government standards or the BCMA Guide to Edge Planning, Appendix C;
- Provide landscaping with trees, including coniferous trees, as a major landscaping component, as well as dense vegetation, within the required landscaped buffer. Wherever possible, double rows of trees should be planted. Any existing mature trees within the buffer area are to be preserved. A majority of the plant material selected should include low maintenance, indigenous vegetation and should be able to survive with little or no fertilizers.
- For added effectiveness of the buffer, consider provision of a low landscaped berm as part of the buffer. In the absence of a natural barrier such as an existing watercourse or ravine next to the agricultural area, a continuous fence along the edge of the agricultural area should be installed and maintained. A transparent fence (e.g. a split rail or picket fence) in combination with a dense and continuous evergreen hedge is preferred. A chain link fence may be

The letter of credit is to ensure that the landscaping is completed by the developer or that the local government will have funds to plant the buffer should the developer be unable to complete it for whatever reason..

provided only if it is combined with dense landscaping or a hedge on the outside.

- Where possible, existing landscaping or native vegetation that meets the intent of these guidelines should be retained. Landscape plans should:
  - Integrate and augment any existing landscape; and
  - Retain existing trees and integrate them into the proposed site and landscape design.

2. A buffer maintenance plan must be developed and signed off by a registered landscape architect or registered professional biologist with experience in developing landscaping maintenance plans.
3. A section 219 covenant as per the *Land Title Act* for the buffer specified in the Farmland Protection Development Protection Area Design Guidelines must be registered on title. This covenant shall prohibit the removal of vegetation and the construction of, or addition to, any buildings or structures within the buffer area other than fencing in accordance with local government standards or the BCMA Guide to Edge Planning. Under section 22 of the Agricultural Land Commission Act, this covenant may require the Commission's approval, prior to registration.
4. All landscaping should meet the British Columbia Landscape Standard published by the British Columbia Society of Landscape Architects and the British Columbia Nursery Trades Association and should be covered by a performance bond for a period of two years from the date of final installation, in order to ensure survival or replacement of plantings. All landscaping should be maintained in perpetuity.
5. Surface parking or roads abutting agricultural lands require a minimum 7.5 metre (24.6 feet) wide landscaped buffer to separate the paved surface from the agricultural area. Buildings or structures should not be built within the buffer area.

Appendix B – Buffer Plant List

The plants in this list have been chosen for their fast growth, disease resistance, and hardiness. The 'Notes' column highlights special traits of certain species to aid in selecting the appropriate plant for a particular buffer. Species highlighted in yellow have leaf and form characteristics that make them good spray drift barriers. Species that are native are identified in the Notes column. Plant materials not included in this list may also be considered. Retention of existing vegetation when compatible with adjacent farm operations is encouraged. Ultimately, the selection of plants will depend on the site specific conditions.

General Requirements

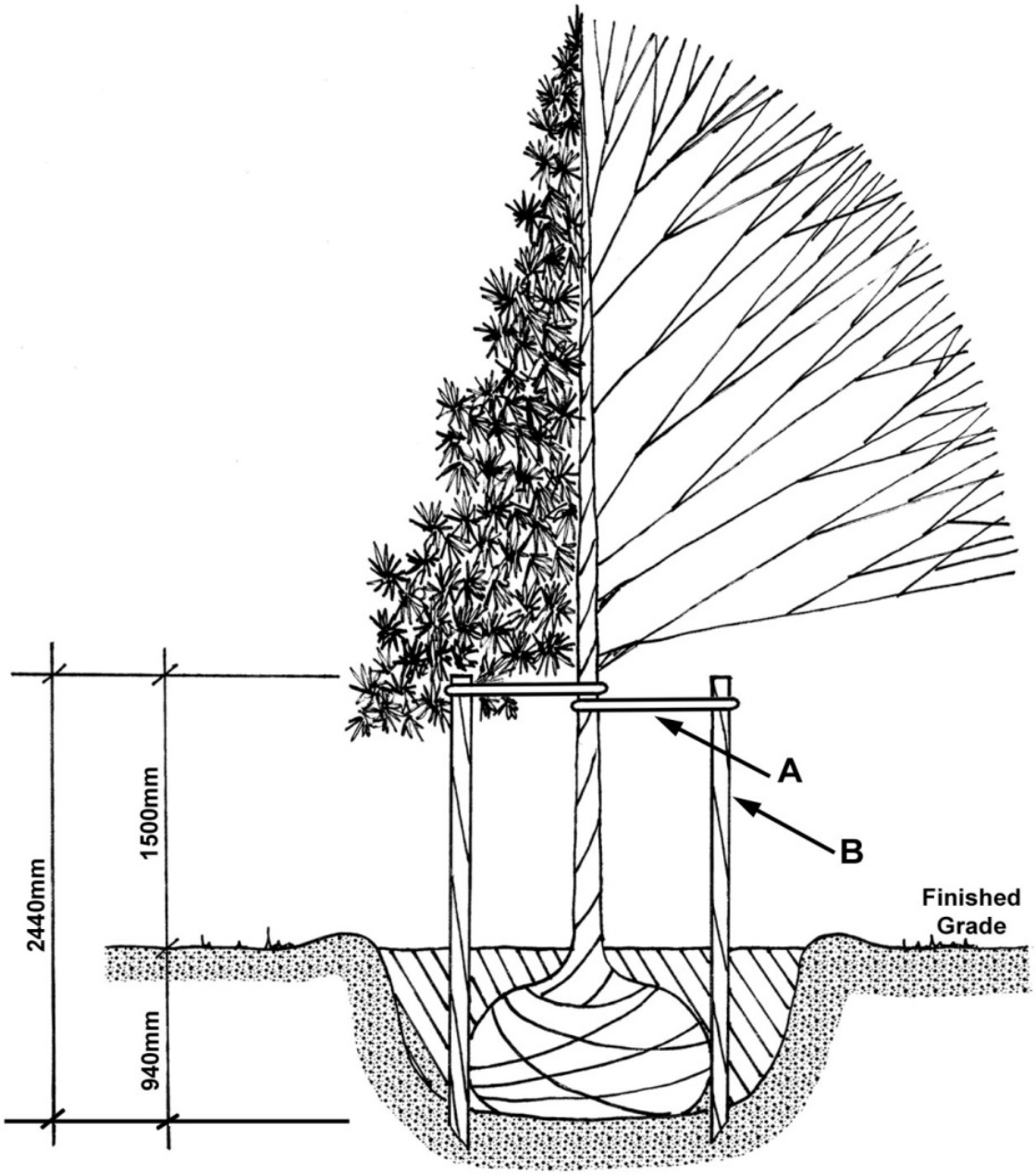
1. The following plant list indicates the minimum acceptable size for each species/variety at the time of planting. Where shortages occur, smaller size plant material may be considered.
2. All plants must be true to name, type and form. Plants must be compact and properly proportioned.
3. All plants must be healthy with vigorous root systems and free of defects, decay, disfigured roots, sun scald injuries, abrasions of the bark, plant diseases and insect pests.
4. Trees must have straight stems unless that is uncharacteristic and must be well branched for the species/ variety.
5. Root balls and soil in containers must be free from noxious weeds.
6. Immediately following planting of trees, all trees shall be braced in an upright position, using stakes with ties as shown on the following page. Tree stakes and straps shall be removed once the trees are stable. Tree stakes and straps should remain for a maximum of two years.
7. A maintenance plan must be developed and procedures must be undertaken for all buffer plantings on a regular basis during the growing season.
8. Weeds in the planted areas must be prevented from becoming a problem; weed removal at least once per month during the growing season is recommended.
9. Pests and diseases that have the potential to damage or kill the trees or shrubs must be controlled.
10. If the area receives limited rainfall during the growing season, some form of irrigation must be used.

Staking for Deciduous / Coniferous Trees

Applies to deciduous trees with <6 cm caliper; coniferous trees <2.5 m height

1. All support stakes shall be equally spaced about each tree, shall be pressure treated, be standard 50-70 mm round, and a minimum of 2440 mm in length.
2. Support stake shall be driven vertically into the ground a minimum of 940 mm and support at least 1500 mm of the tree stem.
3. Soft Strapping shall be used to connect each support stake to the tree trunk.

A	25 mm soft strapping
B	50-70 mm round pressure treated stakes



Deciduous Trees – Tall (>15 m)				
Botanical Name	**Common Name**	**Hardiness**	**Planting Size**	**Notes**
Acer platanoides 'Crimson King'	Norway Maple	to zone 3-4	7 cm. calliper	Fast growth, full sun
'Emerald Queen'	"	"	"	"
'Summershade'	"	"	"	"
A. pseudoplantanus	Sycamore Maple	to zone 5	"	Adaptable, full to partial sun
A. rubrum 'Armstrong'	Red Maple	to zone 3	7 cm. calliper	Fast growth, full sun
'October Glory'	"	"	"	"
'Schlesingeri'	"	"	"	"
'Shade King'	"	"	"	"
A. saccharum	Sugar Maple	to zone 3	7 cm. calliper	Full to partial sun
Aesculus x carnea 'briotii'	Red Horsechestnut	to zone 4	"	Drought tolerant, full sun
Betula papyrifera	Paper Birch	to zone 2	2 m ht.	Full to partial sun, **Native,** tolerates moist soil
Cercidiphyllum japonicum	Katsura Tree	"	"	Full sun
Davidia involucrata	Handkerchief or Dove Tree	to zone 6	"	Full to partial sun
Fagus sylvatica	European Beech	to zone 4	7 cm. calliper	Slow growth, full sun
'Laciniata'	Cutleaf Beech	"	"	"
'Purpurea'	Purple Beech	"	"	"
'Riversii'	Copper Beech	"	"	"
Fraxinus pennsylvanica	Green Ash or Red Ash	to zone 2	"	Full sun
Larix kaempferi	Japanese Larch	to zone 4	2.0 m ht.	"
L. occidentalis	Western Larch or Tamarack	to zone 4-5	"	Fast growth, full sun
Liquidambar styraciflua 'Palo Alto'	American Sweet Gum	to zone 5	7 cm calliper	Fast growth; roots may damage sidewalks and drainage systems, full sun
Magnolia kobus	Magnolia	"	"	Full to partial sun
Metasequoia glyptostroboides	Dawn Redwood	"	2.0 m ht.	Fast growth, takes up much space, full sun
Plantanus x acerifolia	London Planetree	"	"	Hardy, full sun

Deciduous Trees – Tall (>15 m)				
Botanical Name	**Common Name**	**Hardiness**	**Planting Size**	**Notes**
Populus tremuloides	Quaking Aspen	to zone 1	"	Fast growth. Has aggressive water-seeking roots - set well back from drainage systems, full sun, **Native**
Prunus sargentii	Sargent Cherry	to zone 4	"	Hardy, full sun
Quercus palustris	Pin Oak	"	7 cm. calliper	2' a yr growth, full sun
Q. rubra	Red Oak	to zone 3	"	2' a yr growth, full sun
Robinia pseudoacacia 'frisia'	Black Locust or Frisia Black Locust	"	"	Fast growth, very hardy. Has aggressive water-seeking roots - set well back from drainage systems

Deciduous Trees – Small to Medium (<15 m)

Botanical Name	Common Name	Hardiness	Planting Size	Notes
Acer campestre	Field or Hedge Maple	to zone 5	5 cm cal.	Full to partial sun
A. circinatum	Vine Maple	to zone 4	2.0 m ht.	Full to partial shade, **Native**
A. davidii	David's Maple	to zone 5"	"	Full to part sun
A. ginnala	Amur Maple	to zone 2	"	"
A. glabrum var. douglasii	Douglas Maple	to zone 3	"	Part shade to full sun, tolerates dry conditions, **Native**
A. negundo	Boxelder	to zone 2	"	Fast growth: 15 - 20' in 4-6 yrs. Shade tolerant
Amelanchier laevis	Shadbush	to zone 4	"	Full sun
Betula jacquemontii	Whitebarked Himalayan Birch	to zone 1	5 cm cal.	Rapid suckering, full sun
Carpinus betulus	European Horn-beam	to zone 4	"	Good screening as a hedge, full to partial sun
Cercis canadensis	Eastern Redbud	to zone 5	"	Requires good drainage, full to partial sun
Cornus mas	Cornelian Cherry	to zone 4	"	Good screening as a hedge, full to partial sun
C. nuttallii 'White Wonder'	Pacific Dogwood	"	"	Full or partial sun, **Native**
Fagus sylvatica	European Beech	to zone 4	5 cm cal.	Trim as hedge to retain leaves through winter, full sun
'Dawyckii'	Dawyck Beech	"	"	"
'Zlatia'	Golden Beech	"	"	"
Halesia monticola	Mountain Silver-bell	to zone 5	"	Full to partial sun
Maackia amurensis	Amur maackia	to zone 4	2.0 m ht.	Full sun, wet soil
Magnolia dawsoniana	Dawson Mag-nolia	to zone 7	2.0 m ht.	Full sun or full shade
M. sieboldii	Oyama Magnolia	"	"	Shade tolerant
Oxydendron arboreum	Sorrel Tree or Sourwood	to zone 5	2.0 m ht.	Full to partial sun
Prunus emarginata	Bitter Cherry		6 cm cal.	Full sun, moist soil, **Native**
Prunus padus	European Bird Cherry	to zone 3	6 cm cal.	Full sun, do not plant in tree fruit production areas
P. subhirtella	Higan Cherry	"	6 cm cal.	Full sun, do not plant in tree fruit production areas

Deciduous Trees – Small to Medium (<15 m)

Botanical Name	Common Name	Hardiness	Planting Size	Notes
P. x yedoensis 'Akebono'	Daybreak Cherry or Akebono Yoshino Cherry	to zone 6	"	"
Rhamnus purshiana	Cascara Buckthorn	to zone 7	1 m ht.	Shade, drought tolerant, **Native**
Salix discolor	Pussy Willow	to zone 4	1.5-2 m ht.	Fast growth, dry to moist sites, full to partial sun
Salix glauca	Gray Willow	to zone 4	1 m ht.	Full sun, moist soil, salt and compaction tolerant, **Native**
Salix lucida	Pacific Willow	to zone 5	"	Full to partial sun, moist soil, **Native**
Salix scouleriana	Scouler's Willow	to zone 6	"	Full to partial sun, moist soil, **Native**
Salix sitchensis	Sitka Willow	to zone 4	"	Full to partial sun, moist soil, **Native**
Sophora japonica 'Regent'	Regent Pagoda Tree or Japanese Pagoda Tree	to zone 4	5 cm cal.	Fast growth: 10 - 12' in 5 yrs. Hardy, full sun
Sorbus aucuparia 'Rosedale'	European Mountain Ash	to zone 3	"	Full sun, do not plant in tree fruit production areas
Stewartia pseudocamellia	Japanese Stewartia	to zone 5	"	Partial sun
Styrax japonicus	Japanese Snowdrop or Snowbell	"	"	Fast growth: 10' in 7 yrs, full to partial sun.
Tilia x euchlora	Crimean Linden	to zone 4	"	Full to partial sun

Coniferous Trees – Tall (>15 m)				
Botanical Name	**Common Name**	**Hardiness**	**Planting Size**	**Notes**
A. concolor	Colorado White Fir	to zone 4	"	Full sun
A. pinsapo	Spanish Fir	to zone 6	"	"
A. grandis	Grand Fir	to zone 6	2.0 m ht.	Full to partial sun, moist soil, **Native**
Calocedrus decurrens	Incense Cedar	"	2.0 m ht.	Full to partial sun
Cedrus atlantica	Atlas Cedar	"	2.0 m ht.	"
C. deodara	Deodar Cedar	"	"	Full sun
Chamaecyparis nootka-tensis	Nootka Cypress or Alaska Yellow Cedar	to zone 4	"	Full sun, **Native**
'Lutea'	Yellow Cypress	"	"	Full sun
Cryptomeria japonica	Japanese Crypto-meria or Japa-nese Cedar	to zone 6	"	"
Picea abies	Norway Spruce	to zone 2	2.0 m ht.	Fast growth, full sun
P. glauca	White Spruce	to zone 1	"	Hardy, full sun, **Native**
P. pungens	Colorado Spruce	to zone 2	2.0 m ht.	Hardy; somewhat drought tolerant, full sun
P. stitchensis	Sitka Spruce	to zone 7	"	Full to partial sun, **Native**
Pinus contorta	Lodgepole Pine or Shore Pine	to zone 4	2.0 m ht.	Full sun, not suitable for coastal areas, **Native**
P. nigra	Austrian Pine	"	"	Hardy, full sun
P. ponderosa	Ponderosa Pine	to zone 3	"	Full sun, **Native**
P. strobus	White Pine or Eastern White Pine	"	2.0 m ht.	Fast growth, full sun, use blister rust resistant stock
P. sylvestris	Scotch Pine	to zone 2	"	Full sun
P. thunbergii	Japanese Black Pine	to zone 5	"	Good wind break. Tolerates poor sandy soils; drought tolerant
Pseudotsuga menziesii	Douglas Fir	Rocky Mtn type to zone 4; Pacific type to zone 6	"	Full sun, very dry to moist montane sites, **Native**
Sequoia sempervirens	Coast Redwood	to zone 7	"	Full sun
Sequoiadendron giganteum	Giant Redwood or Sierra Red-wood	to zone 6	"	"

Coniferous Trees – Tall (>15 m)				
Botanical Name	**Common Name**	**Hardiness**	**Planting Size**	**Notes**
Thuja plicata	Western Red Cedar	to zone 5	"	Few diseases and insects, **Native**
Tsuga heterophylla	Western Hemlock	"	"	Full sun, **Native**
T. mertensiana	Mountain Hemlock	to zone 4	2.0 m ht.	Full sun, **Native**
Tilia x euchlora	Crimean Linden	to zone 4	"	Full sun

Hedging / Screening Shrubs (Deciduous)

Botanical Name	Common Name	Hardiness	Planting Size	Notes
Amelanchier florida	Saskatoon Berry	to zone 4	#2 pot	Prefers well drained sites, **Native**
Buddleia davidii	Butterfly Bush	to zone 5	"	Fast growth, full sun
Caragana arborescens	Siberian Peashrub	to zone 2	#5 pot	Hardy, full sun
Clethra alnifolia	Sweet Bush	to zone 4	#2 pot	Good shade plant
Cornus alba	Tartarian Dog-wood	to zone 2	"	Fast growth, full to partial sun
C. sanguinea	Tartarian Dog-wood	to zone 4	"	Full to partial sun
C. stolonifera	Red Osier Dog-wood	to zone 2	"	Fast growth, full sun, **Native**
Corylus cornuta var. calif	Beaked Hazelnut	to zone 4	"	Full to partial sun, **Native**
Cotinus coggygria 'Royal Purple'	Smokebush	to zone 5	#5 pot	Drought resistant, full sun
Cotoneaster acutifolius	Peking Coto-neaster	to zone 2	#1 pot	Full to partial sun, do not plant in tree fruit production areas
C. lucidus	Hedge Coto-neaster	"	#1 pot	"
Elaegnus commutata	Silverberry	"	#5 pot	Fast growth; suckers, full sun
Euonymus alata	Winged Burning Bush	to zone 3	"	Can be invasive, full to partial sun
Forsythia x intermedia	Border Forsythia	to zones 4-6	#2 pot	Fast growth, full to partial sun
Hamamelis virginiana	Common Witch-hazel	to zone 3	#5 pot	Full to partial sun
Holodiscus discolor	Creambush	to zone 5	#2 pot	Full to partial sun, dry to moist sites, **Native**
Hydrangea paniculata 'grandiflora'	PeeGee Hydrangea	to zone 3	"	Fast growth, full to partial sun
Kolkwitzia amabilis	Beauty Bush	to zone 4	"	Full to partial sun
Lonicera korolkowii 'zabellii'	Zabel's Honey-suckle	to zone 2	#2 pot	"
L. maackii	Amur Honey-suckle	to zone 2	#2 pot	Full to partial sun
L. tartarica 'Rosea'	Tartarian Honey-suckle	"	"	Vigorous, full to partial sun
Oemleria cerasiformis	Indian Plum	to zone 6	"	Full sun , dry to moist soil, **Native**
Philadelphus x virginalis	Mock Orange	to zone 4	"	Full to partial sun

Hedging / Screening Shrubs (Deciduous)

Botanical Name	Common Name	Hardiness	Planting Size	Notes
Physocarpus capitatus	Pacific Ninebark	to zone 5	#5 pot	Tolerates drought on coast but prefers moist soil, full to partial sun, **Native**
Prunus tomentosa	Manchu Cherry	to zone 2	"	Full sun
P. triloba 'Multiplex'	Chin. Flwring Almnd	to zone 3	"	Full to partial sun
Ribes alpinum	Alpine Current	to zone 2	#2 pot	Very hardy, full to partial sun
R. sanguineum	Flowering Current	to zone 5	"	Full sun, drought tolerant, **Native**
Rubus parviflorus	Thimbleberry	to zone 3	"	Full sun, **Native**
Rubus spectabilis	Salmonberry	to zone 5	"	Full to partial sun, moist soil, **Native**
Salix hookeriana	Hooker Willow	to zone 6	#5 pot	Full sun, moist soil
Sambucus canadensis	American Elderberry	to zone 3	"	Fast growth, full or partial sun
S. racemosa	Red Elderberry	"	"	Full sun, wet soil, **Native**
Symphoricarpos albus	Snowberry	"	"	Full to partial sun, moist soil, **Native**
Sorbaria sorbifolia	Ural False Spirea	to zone 2	"	Fast growth, full to partial sun
Spiraea douglasii	Pacific Hardhack	to zone 5	#2 pot	Full to partial sun, moist to dry soil
Symphoricarpos albus	Common Snowberry	to zone 3	#2 pot	Full sun to full shade, moist to dry soil
Syringa vulgaris (cult.)	Common Lilac	to zone 3	#5 pot	Full sun
Viburnum x burkwoodii	Burkwood Viburnum	to zone 4	"	Full or partial sun
V. cassinoides	Witherod	to zone 2	"	"
V. dentatum	Arrowwood	to zone 3	"	"
V. opulus 'Roseum'	Snowball Bush	to zone 2	"	Easy to grow, full to partial sun
V. trilobum	Amricn Crnbry Bush	"	"	
Weigelia x 'Centennial'	Weigelia	to zone 4	"	Tolerates air pollution, full sun

Hedging / Screening Shrubs – (Conifers & Broadleaf Evergreens)

Botanical Name	Common Name	Hardiness	Planting Size	Notes
Arbutus unedo	Strawberry Tree	to zone 8	#5 pot	Full sun
Camellia japonica (var.)	Japanese Camellia	"	"	Full or partial sun
Ceanothus velutinus	Snowbrush	to zone 5	"	Full sun, dry to moist soil, **Native**
Chamaecyparis lawsoniana 'Ellwoodii'	Ellwood cypress	to zone 5	#5 pot	Excellent hedge, even in exposed or shady positions
Cotoneaster salicifolius	Willowleaf Cotoneaster	to zone 6	"	Full to partial sun, do not plant in tree fruit production areas
Cryptomeria japonica 'Elegans'	Plume Cryptomeria or Plume Cedar	to zone 6	"	Vigorous, full to partial sun
Cupressus macrocarpa	Monterey Cypress	to zone 7	"	Full sun
Elaeagnus x ebbingei	Silverberry or Ebbinge's Silverberry	to zone 7	"	Ideal shelter belt; large leaves, full to partial sun
E. pungens 'Maculata'	Thorny Elaeagnus or Silverberry	to zone 6	"	Fast growth; drought tolerant, full to partial sun
Escallonia rubra	Escallonia	to zone 8	"	Full to partial sun
Juniperus virginiana	Eastern Red Cedar	to zone 2	"	Should not be used near orchards due to susceptibility to cedar-apple rust, full sun
Ligustrum japonicum	Japanese Privet	to zone 8	#2 pot	Fast growth, full to partial sun
Ligustrum ovalifolium	California Privet or Golden Privet	to zone 7	"	Loses leaves in cold areas, full sun
Lonicera tartarica 'Rosea'	Tartarian Honeysuckle	to zone 2	"	Vigorous, full to partial sun
Osmanthus armatus	Chinese Osmanthus	to zone 7	"	Dense habit, spiny teeth, full sun
Photinia x fraseri	Photinia	"	"	Fast growing, full sun
Pieris japonica	Japanese Andromeda or Japanese Pieris	to zone 5	"	Full or partial sun
Prunus laurocerasus	Cherry Laurel or English Laurel	"	"	Vigorous, full to partial sun
'Reynvaanii'	Russian Laurel	"	"	"
Rhododendron varieties with mature height > 1.5 m	Rhododendron	most to zone 4	#7 pot	Can make good understory planting, partial sun
Syringa vulgaris	Common Lilac	to zone 2	#5 pot	Suckers freely, full sun
Taxus x media 'Hatfieldii'	Hatfield Yew	to zone 4	1.5 m ht.	Tolerates shade
'Hicksii'	Hick's Yew	"	"	"
Thuja occidentalis 'Aureospicata'	White Cedar or American Arborvitae	to zone 2	"	Thrives in almost any well-drained soil, full sun
'Brandon'	"	"	"	"

Hedging / Screening Shrubs – (Conifers & Broadleaf Evergreens)

Botanical Name	Common Name	Hardiness	Planting Size	Notes
'Fastigiata'	Pyramidal Cedar	"	"	"
Tsuga canadensis	Canada Hemlock or Eastern Hemlock	to zone 3	1.5 m ht.	Shade tolerant
Vaccinium ovatum	Evergreen Huckleberry	to zone 7	#2	Full to partial sun, **Native**
Viburnum tinus 'Robustum'	Laurustinus	to zone 8	#5 pot	Full to partial sun

Trespass Inhibiting Shrubs

Botanical Name	Common Name	Hardiness	Planting Size	Notes
Berberis x 'Chenaultii'	Chenault Barberry	to zone 4	#5 pot	Dense habit, full to partial sun, can be host to wheat stem rust
B. darwinii	Darwin's Barberry	to zone 7	"	Full to partial sun, can be host to wheat stem rust
B. julianae	Wintergreen Barberry	to zone 6	"	Evergreen, full or partial sun, can be host to wheat stem rust
B. x mentorensis	Mentor Barberry	to zone 5	"	Fast growth; no fruit, full to partial sun, can be host to wheat stem rust
Chaenomeles speciosa	Flowering Quince	to zone 4	#5 pot	Full to partial sun, do not plant in tree fruit production areas
Elaeagnus pungens 'Maculata'	Thorny Elaeagnus or Silverberry	to zone 7	"	Evergreen. Fast growth; drought resistant, full to partial sun
Mahonia aquifolium	Oregon Grape	to zone 5	"	Evergreen, partial sun, can be host to wheat stem rust, **Native**
M. x 'Charity'	Oregon Grape	"	"	"
Osmanthus armatus	Chinese Osmanthus	to zone 7	"	Evergreen, full to partial sun
O. heterphyllus	Holly-Leaf Osmanthus	"	"	Full to partial sun
Pyracantha coccinea 'Kasan'	Scarlet Firethorn	to zone 6	"	Full to partial sun, do not plant in tree fruit production areas
P. fortuneana 'Cherri Berri'	"	"	"	"
P. x 'Mohave'	"	"	"	"
P. x 'O. Glow'	"	"	"	"
Rosa acicularis	Prickly Rose	to zone 1	#2 pot	Full sun, **Native**
Rosa gymnocarpa	Baldhip Rose	to zone 4	"	Full sun to full shade, dry to moist soils, **Native**
Rosa nutkana	Nootka Rose	"	"	Full to partial sun, **Native**
Rosa spp.	Shrub roses	to zones 2-4	"	Fast growers, full sun, do not plant in tree stone fruit production areas
Yucca filamentosa	Adam's Needle	to zone 4	#5 pot	Full to partial sun
Y. glauca	Soapweed	to zone 3	"	Full sun

Appendix C – Fencing Specifications

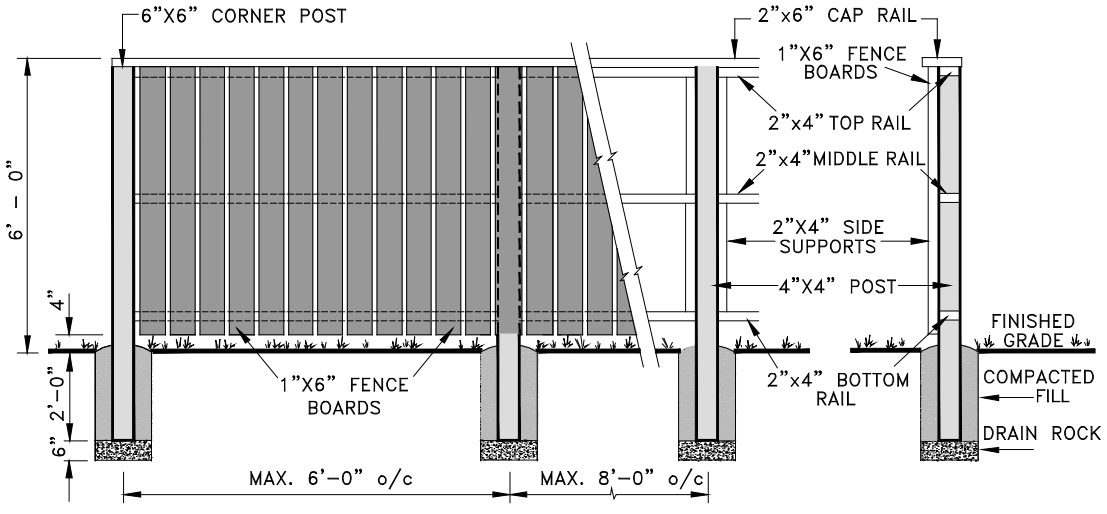
1: Solid Wood Fence

The following specifications are recommendations. A local government can use its own specifications if they meet or exceed the following specifications.

1. All posts and rails shall be rough sawn of "No. 1 Structural" grade, pressure treated with a wood preservative non-toxic to surrounding plant material, in accordance with CSA Standard 080.2 and compatible with staining requirements below.
2. All fence boards and planks shall be rough sawn of "Quality Fencing" grade, finished with penetrating stain with preservative, conforming to CGSB Standards 1-GP145M and 204M, applied to all surfaces prior to installation and on any cuts thereafter.
3. Line posts shall be minimum 8.0 ft. in length and at least (standard) 4"x 4".
4. Corner posts shall be minimum 8.0 ft. in length and at least (standard) 6"x 6".
5. Fence rails (min. 3) shall be maximum 7.5 ft. in length and at least (standard) 2"x 4".
6. Cap rails shall be at least (standard) 2"x 6". Cant to drain.
7. The finished height of opaque fencing shall be at least 6.0 ft.
8. All nails used in fence construction shall meet the following specifications:

8.1	Minimum gauge of nails used - #9, common in post/rail connections
8.2	Minimum gauge of nails used - #11.5,common in rail/fence board connections
8.3	Galvanized - CSA G164

9. Line posts shall be placed no more than 8.0 ft. O.C. and be firmly anchored in the soil to a depth of not less than 2.0 ft.
10. The fence shall be constructed in accordance with these specifications and details provided in the drawings which forms part of these specifications.



2: Wire Fabric Fence with Two Strands Barbed Wire

1. All posts and brace poles shall be pressure treated in accordance with CSA Standard 080.5, using a wood preservative non-toxic to surrounding plant material.
2. Line posts shall be 8.0 ft. in length and 4” - 5” in diameter.
3. Corner and brace posts shall be 8.0 ft. in length and 5” - 6” in diameter.
4. Bracing poles shall be 3” - 4” in diameter.
5. All line and corner posts shall be machine pointed to permit driving of posts.
6. The wire mesh fencing material shall meet the following specifications:

6.1	Minimum wire gauge - 12.5 A.W.G.
6.2	Overall Height - 48”
6.3	Min. number of horizontal strands - 9
6.4	Max. spacing between horizontal strands - 8”
6.5	Max. spacing between vertical stays - 16”
6.6	Wire intersections of non-slip design
6.7	Galvanized - CSA G164

7. The barbed wire fencing material shall meet the following specifications:

7.1	Number of strands - 2
7.2	Minimum wire gauge - 12.5 A.W.G.
7.3	Maximum spacing between barbs - 6”
7.4	Number of points per barb - 4
7.5	Galvanized - CSA G164

8. Brace wire shall meet the following specifications:

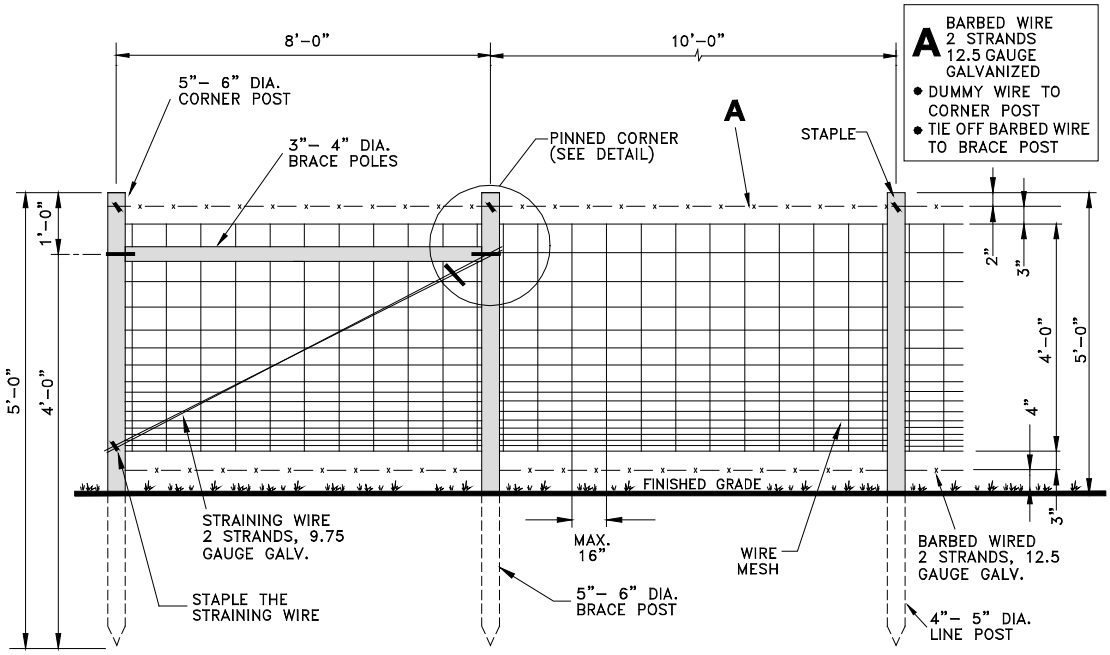
8.1	Number of strands - 2
8.2	Minimum wire gauge - 12.5 A.W.G.
8.3	Galvanized - CSA G164

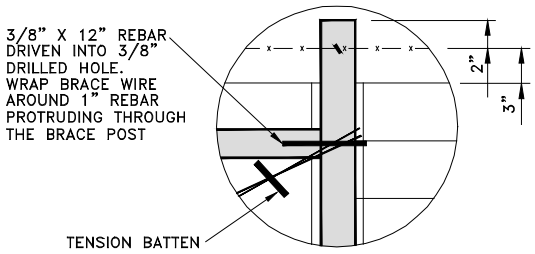
9. The staples used in fence construction shall meet the following specifications:

9.1	Minimum wire gauge - 9.0 A.W.G.
9.2	Minimum length - 1.75”
9.3	Galvanized - CSA G164

10. Line posts shall be placed no more than 10.0 ft. apart and be firmly anchored in the soil to a depth not less than 30”.
11. Corner brace assemblies shall be constructed as indicated in the drawings.
12. An intermediate brace assembly shall be constructed as shown in the drawings and spaced as required by terrain or every 660.0 ft.
13. Barbed wire shall be pre-stretched prior to tieing off. Tension wire to 600 lbs., relax to 250 lbs., then staple securely to brace assemblies. Securely staple barbed wire to line posts allowing for wire movement.
14. Wire mesh shall be stretched and securely attached by staples at each wire intersection with the brace assembly posts. At line posts, wire mesh shall be attached by staples at alternate wire intersections with posts. Securely staple to line posts allowing for wire movement.
15. Wire mesh and barbed wire shall be spaced as shown in the drawings.

16. The fence shall be constructed in accordance with these specifications and details provided in the drawings which forms part of these specifications.





PINNED CORNER

3: Chain Link Fence

1. Line posts shall be constructed from 2" (50 mm) standard galvanized steel pipe (0.125" wall thickness), 8.5 ft. (2.5 m) in length. Galvanized to CSA G164 standard.
2. Corner and straining posts shall be constructed from 2.5" (64 mm) standard galvanized steel pipe (0.125" wall thickness), 10 ft. (3 m) in length. Galvanized to CSA G 164 standard.
3. Diagonal corner bracing shall be constructed from 1.25" (32 mm) standard galvanized steel pipe. Galvanized to CSA G164 standard.
4. Posts shall be securely anchored in the soil using 2,500 PSI concrete extending from the soil surface to 6" (15 cm) below the bottom of the post. Posts shall be spaced no more than 8.0 ft. (2.5 m) O.C.
5. The chain link fencing material shall meet the following specifications:

   5.1 Minimum height: 5' 8" (1.8 m)

   5.2 Minimum wire gauge: 11.0 AWG

   5.3 Maximum mesh size: 2" (50 mm x 50 mm)

5.4 Be galvanized (to CSA G164) or plastic coated

6. If barbed wire is deemed necessary, the material shall meet the following specifications:

   6.1 Number of strands: 2

   6.2 Minimum wire gauge: 12.5 AWG

   6.3 Maximum spacing between barbs: 6" (15 cm)

   6.4 Number of points per barb: 4

   6.5 Galvanized: CSA G164

7. All accessory materials shall meet the following specifications:

   7.1 Post caps and extension arms: of pressed steel or cast or malleable iron and galvanized to CSA G164 standard.

   7.2 Tension wire: bottom and top wires 6.0 gauge (5 mm) medium tensile galvanized wire.

   7.3 Tie wire: 9.0 gauge aluminum wire for mesh fixing to line posts.

   7.4 Hog ring clips: 9.0 gauge galvanized steel wire clips for mesh fixing to top and bottom tension.

   7.5 Tension bar: minimum ¼" x ¾" (6.25 mm x 19 mm) galvanized mild steel flat bar.

   7.6 Tension bands: 1/8" x ¾" (3 mm x 19 mm) galvanized formed mild steel flatbars with galvanized bolts and nuts for all tension bar fixing.

8. All terminal posts (posts at ends, corners or intersections), all line posts and any intermediate tensioning posts shall be set plumb into concrete footings in augured or dug holes to the depths and regular spacing.

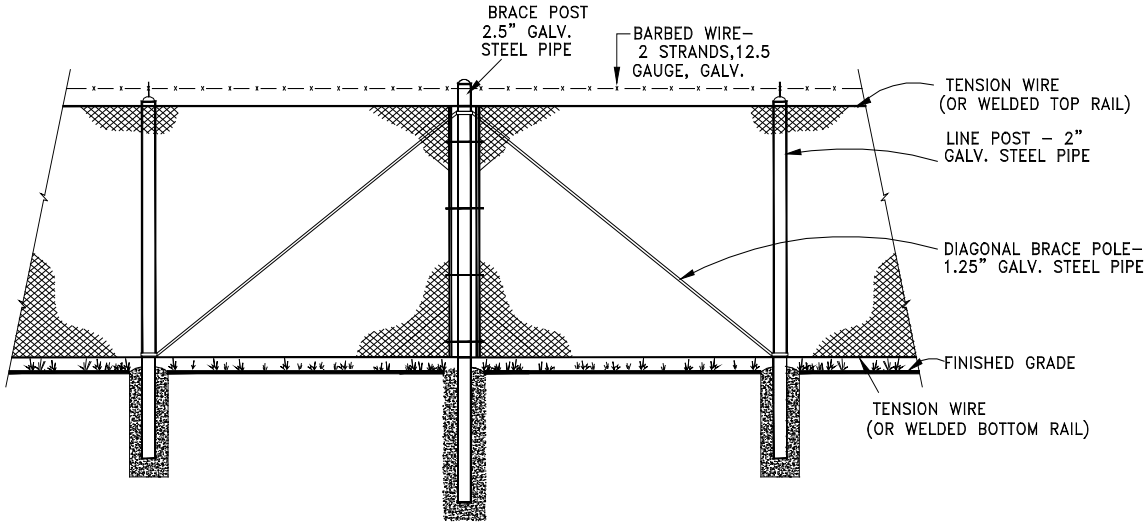
9. All posts shall be securely fitted with the appropriate weather-tight caps and extension arms.

10. If top and bottom welded rails are not used, top and bottom tension wires shall be securely fixed taut and sag-free to terminal posts and any intermediate tensioning posts. Top tension wire shall pass through line post tops.

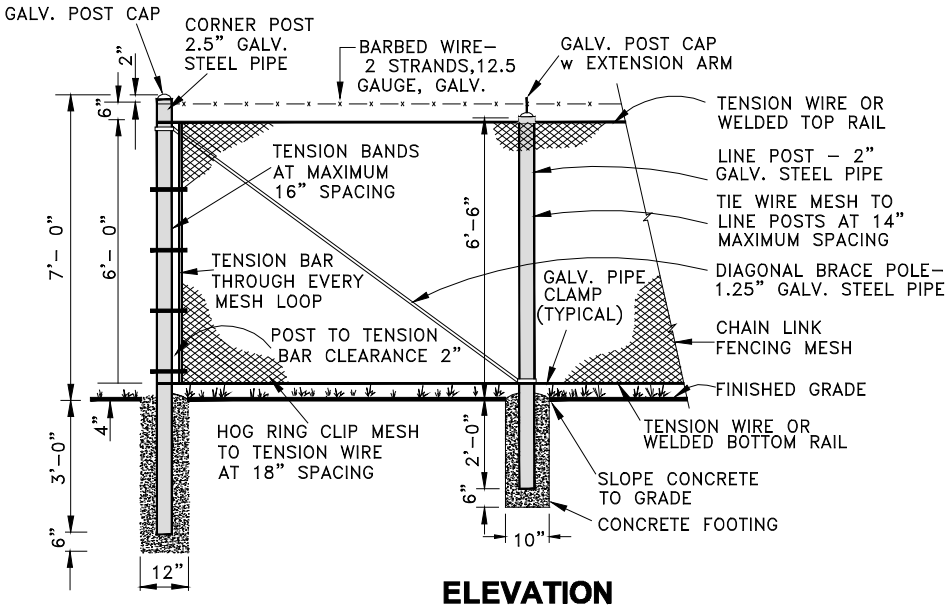
11. Intermediate tensioning assemblies shall be provided where terminal posts are more than 500.0 ft. (150 m) apart, and at any subsequent 500.0 ft (150 m) spacing to consist of a straining post with diagonal pipe braces to adjoining line posts each way.

12. Chain link fencing mesh shall be stretched between terminal posts and any intermediate tensioning posts using proper equipment, and secured with tension bars and bands, tie wire and clips. Joins in the length of wire mesh shall be made by weaving the mesh together with a single wire picket to form a neat continuous mesh.

13. If deemed necessary, barbed wire shall be installed in the slots of all extension arms and secured to extension arms at terminal and intermediate tensioning posts taut and free of sags.



ELEVATION



ELEVATION

Appendix D – Definitions for Farm-side Edge Planning Area Guidelines

Aerobic Decomposition	means the microbiological conversion of organic matter in the presence of oxygen.
Agricultural Solid Waste	means a by-product of agriculture and includes manure, used mushroom medium and agricultural vegetation waste.
Agricultural Unit	means live weight of 455 kg (1000 lbs) of livestock, poultry, farmed game or fur-bearing animals or any combination of them equaling 455 kg, defined under the Code of Agricultural Practice for Waste Management, *Environmental Management Act*.
Agricultural Waste Water	means water which contains any unwanted or unused products or by-products of agriculture such as milk, fertilizers, pesticides, detergents, acids, phosphates, chlorine, and manures.
Broiler Equivalents	means 1.929 kg of live weight of chicken.
Category 'A' Noise Scare Device	means a device used to protect crops and feed that creates an impulse sound generated from impacts or explosions and includes propane-fueled cannons. Firearms and shell launchers such as orchard pistols are not included.
Category 'B' Noise Scare Device	means any stationary device used to protect crops and feed, not in Category 'A', which generates sounds to scare or disturb animals. Devices that broadcast animal calls or other sounds through loudspeakers are included in Category 'B'. Firearms and shell launchers such as orchard pistols are not included.
Confined Livestock Area	means an outdoor, non-grazing area where livestock, poultry, or farmed game is confined by fences, other structures or topography, and includes feedlots, paddocks, corrals, exercise yards, and holding areas, but does not include seasonal feeding areas, free range poultry at a density of less than 1 agricultural unit per 100 m^2, horse riding rings, or exercise yards.
Enclosed Liquid Manure Storage	means a liquid manure storage facility that excludes precipitation and is physically protected from wind.
Feed Lot	means a fenced area where livestock, poultry or farmed game are confined solely for the purpose of growing or finishing, and are sustained by means other than grazing.
Feed Mill	means a facility for processing and/or mixing animal feed inputs.
Free Range Layers	means birds housed the same as free run layers and have access to a contained outdoor environment.
Free Run Layers	means birds housed on the floor inside a barn with all litter or partial litter and total or partial raised wire or slatted flooring.
Game Birds	means the following birds: guinea fowl, pheasant, partridge, pigeon, quail, silkies, squab, and tinamou.
Grazing Area	means a pasture or rangeland where livestock, poultry or farmed game is primarily sustained by direct consumption of feed growing in the area.
Greenhouse	means a structure covered with translucent material, used for the purpose of growing plants, and is of sufficient size for persons to work within the structure.
Manure	means waste material excreted from animals including livestock, poultry, farmed game and fur bearing animals; and may include some *agricultural waste water* and/or associated bedding.
Manure, Liquid	means manure that has a moisture content of 80% or higher.
Manure, Solid	means manure that has a moisture content of less than 80%.
Meat Chickens	means broiler, cornish and roaster birds.

Milk House	means a farm building or farm structure used to cool or store milk or farm separated cream and to clean, sanitize, and store milking equipment used in the production and storage of milk or farm separated cream.
Milking Facilities	means farm buildings or structures used on a dairy farm, including milking barns, milking rooms, milking parlours and milk houses.
Mushroom Medium	means a composted mixture that is used for growing mushrooms.
On-farm Composting	means composting of agricultural waste or raw materials, which may include manure, straw, vegetative waste, woodwaste, ground paper, other sources of carbon and nitrogen, and bulking agents, to generate finished compost but does not include production of mushroom medium.
Poultry	means domesticated birds kept for eggs, meat, feathers, hide or cosmetic or medicinal purposes, and includes broilers, cornish, layers, breeding stock, replacement pullets, roasters, ducks, geese, turkeys, ostriches, emus and game birds.
Propane Fueled Cannons	means automatic exploders powered by a gas, such as propane or butane, that produce sounds similar to shotgun blasts, used to scare birds and other wildlife.
Seasonal Feeding Area	means an area a) used for forage or other crop production and b) used seasonally for feeding livestock, poultry or farmed game that is primarily sustained by supplemental feed, but does not include a confined livestock area or grazing area.
Shell Launchers	means guns or orchard pistols that launch bird scaring shells instead of bullets to scare b0rds and other wildlife.
Small Ruminants	includes llamas, alpacas, sheep and goats.
Soil Based Crops	includes berry crops, vegetable crops, fruit trees, vineyards, forage crops, turf, specialty wood crops, nursery crops including nursery mat0erial grown in pots and excludes mushrooms and greenhouse crops.
Specialty Wood Crops	means salix and populus species as prescribed by the Minister of Agriculture.
Sub-canopy Manure Deposition System	means a method to apply liquid manure beneath the canopy of a growing crop and includes deep injection, shallow injection, and manure banding with or without soil aeration.
Wood waste	means wood materials including hog fuel, mill ends, wood chips, bark, and sawdust, but excluding demolition waste, construction waste, tree stumps, branches, logs and log ends

Appendix E – Agricultural Units* Conversion Table

		Typical Top Weight			
Livestock	**Sub Type**	**Information**	**(lb's)**	**(kg's)**	**Agricultural Unit**
Alpaca			110	50.0	0.11
Beef Cattle	Calf	0 to 8 months	506	230	0.51
	Feeder	9 mo to slaughter	1,320	600	1.32
	Cow		1,397	635	1.40
	Bull		3,300	1,500	3.30
Dairy Cattle	Calf	0 to 6 mo	359	163	0.36
	Heifer	7 to 26 mo	1,173	533	1.17
	Cow	over 26 mo	1,397	635	1.40
Emu			94.6	43.0	0.095
Game Birds					
Pheasant			3.00	1.40	0.003
Pigeon			2.20	1.0	0.002
Quail			0.66	0.30	0.00065
Silkie Chicken			1.98	0.90	0.002
Goat	Buck		130	59.0	0.13
	Doe		100	45.0	0.10
	Kid		50	23.0	0.05
Hog	Piglet	0 to 21 day	11	5.0	0.011
	Nursery (wean)	22 to 56 days	45	20.5	0.045
	Wean to Finish	57 to 165 days	45-140/140-240	20-64 / 64-109	0.23
	Sow		451	205	0.45
Horse			1200	545	1.20
	Foal		120	54.0	.12
Llama			400	182	0.40
Mink			5	2.3	0.005
Ostrich			350	160	0.35
Poultry					
Broiler			4.244	1.92	0.0042
Broiler Breeder	Pullet	0 to 23 wk	5.45	2.48	0.0054
	Layer	24 to 60 wk	9.34	4.24	0.0093
Layer	Pullet	0 to 18 wk	2.977	1.35	0.0030
	Layer	over 18 wk	4.180	1.90	0.0042
Duck	Pullet		7.24	3.29	0.0072
	Layer		7.55	3.43	0.0075
	Broiler		7.94	3.61	0.0079
Turkey			19.80	9.00	0.020
Breeder	Female		24.50	11.00	0.024
	Male		62.50	28.00	0.062

		Typical Top Weight			
Livestock	Sub Type	Information	(lb's)	(kg's)	Agricultural Unit
Sheep	Ewe		200	91.0	0.20
	Lamb	Spring	50	25	0.05
		Market	100	45	0.10

* 1 agricultural unit = 455 kg

Appendix F – Reference List – Building the Guide to Edge Planning

The consideration to develop ways to improve planning along the agriculture/urban edge began in 1997. Chapter 8 'Planning Along Agriculture's Edge' in "Planning for Agriculture" laid the initial groundwork for development of the edge planning tools and techniques found in this Guide. Below is a complete list of the literature and studies that helped to form the basis for the "Guide to Edge Planning". Of particular note:

- Relevant federal and provincial legislation was reviewed to ensure that the guidelines and definitions were developed in a manner consistent with existing legislation;
- The ALC Landscaped Buffer Specifications formed the basis of the Guide to Edge Planning buffer specifications; and
- Extensive discussion and consultations was undertaken with BCMA staff when developing the farm-side management guidelines.

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NOTICE TO APPLICANT

BY CAUSING AN IRREVOCABLE LETTER OF CREDIT TO BE DELIVERED AS SECURITY, YOU IRREVOCABLY AUTHORIZE THE AGRICULTURAL LAND COMMISSION AND/OR HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA AS REPRESENTED BY THE MINISTER OF FINANCE, IN ITS OR THEIR SOLE DISCRETION, TO DRAW SOME OR ALL OF THE AMOUNT UNDER THE IRREVOCABLE LETTER OF CREDIT AT ANY TIME, ANY NUMBER OF TIMES AND FOR ANY REASON AND TO HOLD SUCH DRAWN AMOUNT(S) AS SECURITY FOR THE PERFORMANCE OF YOUR OBLIGATIONS IN CASH AND THAT YOU WILL NOT BE ENTITLED TO ANY INTEREST ON ANY AMOUNTS SO CONVERTED TO CASH.

IRREVOCABLE LETTER OF CREDIT

Schedule D

ISSUER:
[Name of Bank]
[Address of Bank]

APPLICANT:
[Name of Company]
[Address of Company]

DATE OF ISSUE:

INITIAL EXPIRY DATE:

LETTER OF CREDIT NUMBER:

AMOUNT:

BENEFICIARY:
Her Majesty the Queen in Right of the Province of British Columbia
as represented by the Minister of Finance
c/o [Address of Province office]

In reference to the requirement for an Irrevocable Letter of Credit set out in_____, at the request of the Applicant, we, the Issuer, do hereby issue this Irrevocable Letter of Credit to guarantee payment on demand to the Beneficiary on the following terms and conditions:

1) This Irrevocable Letter of Credit becomes effective immediately and shall remain in effect until at least noon on the Initial Expiry Date.

2) This Irrevocable Letter of Credit shall be automatically renewed without amendment for successive and consecutive periods of one year from the Initial Expiry Date, or any future expiry date, until one of the following occurs:
   a) the Issuer receives written direction from the Beneficiary permitting the Issuer to cancel and release this Irrevocable Letter of Credit; or
   b) the Issuer provides notice of non-renewal ("Notice of Non-Renewal") to the Beneficiary in accordance with the terms of this Irrevocable Letter of Credit provided that, should the Issuer have not received written acknowledgment from the Beneficiary that it has reviewed such Notice of Non-Renewal at least ten (10) calendar days before such non-renewal date, the Issuer will payout the entire Amount remaining under this Irrevocable Letter of the Credit and deliver such amount to the Beneficiary before such non-renewal date.

3) To have effect, any notice of release or Notice of Non-Renewal shall be provided between the Issuer and the Beneficiary in writing by registered mail or courier at least 60 days prior to the next effective expiration date of this Irrevocable Letter of Credit.

4) Presentation of sight drafts or letters of demand for payment to be made against this Irrevocable Letter of Credit shall be at the discretion of the Beneficiary without requirement of further documentation, notice or prejudice to the rights of any party.

5) The Issuer shall honour any demand(s) for payment signed by the Beneficiary's authorized representative without inquiring as to whether the Beneficiary has the right as between the Beneficiary and the Applicant to make such a demand and without recognizing any claim(s) of the Applicant or any other party.

6) Presentation for payment may be made at the Issuer's offices located at_____ in the municipality of_____in the Province of British Columbia.

7) Partial and multiple drawings are permitted under this Letter of Credit. Payment(s) shall be paid to the Beneficiary in the amount(s) specified in a demand for payment, but shall not exceed, in the aggregate, the Amount.

This Letter of Credit is subject to the International Standby Practices 1998 ("ISP98"). All matters not covered by ISP98 will be governed by the laws applicable in the Province of British Columbia. The parties hereby irrevocably attorn to the non-exclusive jurisdiction of the courts of British Columbia. The Letter of Credit Number must be quoted on all documents required hereby.

Executed this_____day of_____, 20_____.

_____
Authorized signatory for the Issuer

_____
Authorized counter-signatory for the Issuer

_____
Name and Title of signatory for the Issuer

_____
Name and Title of the counter-signatory for the Issuer