SCREENING STANDARDS

ADOPTED BY MD COUNCIL BY RESOLUTION # 1554
ON THE 2nd DAY OF DECEMBER, 2010

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EXECUTIVE SUMMARY

In the fall of 2009 Council instructed staff to proceed with the creation of a landscape screening package for the purposes of mitigating the negative visual impact of RV storage lots in the MD. It soon became apparent that a comprehensive screening strategy for industrial and commercial lots should be considered to preserve the natural beauty of the area. Dillon Consulting was chosen to provide assistance with the development of a screening strategy due to their expertise in the field of Landscape Architecture. Their assistance has been invaluable in the creation of this package.

The report identifies the types development in the Municipal District of Foothills that are considered visually obtrusive and would benefit from screening. These “target activities and facilities” include the outdoor storage of vehicles, materials, or any other goods, exterior work or assembly areas, waste and recycling areas, loading areas, mechanical and electrical equipment, as well as parking and sales lots.

Based on the categories of target activities and facilities, Dillon Consulting recommended a system consisting of three (3) different screening levels. In order of highest to lowest level of screening they are: full screening, which approximates 100% screening of the property from adjacent properties, partial screening, around 50% screening, and buffer screening, which should obscure approximately 25% of the development from adjacent roads or properties. A table was developed to assist in determining what level of screening is appropriate for different “target activities and facilities”.

The level of screening, as well as the method of screening is to be proposed by the developer and approved by Council or by one of the Municipal District’s appointed Development Officers. Examples of each of the three levels of screening and a variety of methods to achieve each level are illustrated in this package in addition to some of the pros and cons of each method. These should assist the developer in determining how to achieve the desired results.

In addition, a plant species list is included to aid in selecting species appropriate for the area and to provide guidance on what hardy plant material is to be used. Information is included with respect to the size, moisture needs, climactic zone, salt tolerance and native status of plant material. Some typical pricing is also included to give developers a rough estimate of the costs that may be incurred. Finally, the MD’s expectations regarding maintenance of the screening materials are addressed.

1.0 INTRODUCTION

In recent years there has been increasing concern amongst landowners and the Municipal District regarding the impact that development has on the visual quality of the landscape.

The purpose of the Screening Standards Package is to provide guidance to landowners and developers who are operating or proposing to operate a commercial enterprise anywhere in the MD including the Highway 2A Industrial Corridor, so that they might prevent their business from creating a negative visual impact on surrounding properties.

This package is intended to assist landowners who are planning a new enterprise or developers who are proposing a commercial or industrial project to anticipate if screening might be required at their site, how much screening might be required, how the screening could be achieved, how it should be built, what materials would be acceptable and how much it will cost. It also provides guidance on maintenance that may be required and how sign-off will be achieved.

Section 2 of the document describes the types of activities and facilities that may be subject to screening requirements. The level of screening that may be required can be determined in Section 3 by consulting Table 3.1. Example planting layouts and plant lists along with a discussion of expected costs are provided in Sections 5 through 7.

This document is provided as a guideline to outline potential application submission requirements for a development in the MD. Whether or not landscape screening will be required and if so, what level of screening should be achieved will be determined by Council or by one of the MD's appointed Development Officers,

2.0 TARGET ACTIVITIES AND FACILITIES

The most common question that is asked when a guideline like this is adopted is:

"How do I know if this applies to my business?"

To help answer this question a list of the types of activities and facilities for which screening is generally recommended has been compiled.

The list is not intended to be comprehensive or exhaustive as it will ultimately be up to Council to decide if a proposed development will require screening. The list is solely to provide a general indication of the types of situations where screening is likely to be required.

Until the MD's Land Use Bylaw is revised to provide for a greater range of commercial and industrial land uses, it is not being proposed that screening standards be applied based on land use designation but rather on the likelihood that the activity or facilities proposed will detract from the visual character of the area. It should be noted that these standards are not intended to be utilized to require screening of agricultural operations, structures or equipment on land that is zoned as Agricultural. The purpose of these standards, as mentioned in section 1.0, is to provide guidance to landowners who are operating or proposing to operate a commercial enterprise anywhere in the MD including the Highway 2A Industrial Corridor.

When determining what types of activities and facilities might be subject to the requirement for landscape screening, it was decided that the best place to start was by identifying and categorizing visually obtrusive or unsightly premises that currently exist in the MD. Assuming that what will be encountered in the future will not differ dramatically from what currently exists, the following categories are suggested:

1. **Outdoor storage areas.** This category would include lumber, pipe, tanks, manufactured goods or materials for manufacturing processes. Establishments which sell bulk goods such as lumber yards would also fit under this category.
2. **Vehicle parking and storage areas**. This category would include cars, farm equipment, recreational vehicles, tractor trailers, boats etc... This does not include a typical parking lot, but an area which will store vehicles for a more extended period.
3. **Stockpile areas**. Large stockpiles of materials such as sand or aggregate used for industrial purposes would qualify for this category.
4. **Exterior work areas**. This includes areas for assembly and construction or repair and industrial processing which occur outside.
5. **Garbage or waste areas**. This would include areas for waste disposal, recycling storage or processing. Auto-wrecking and similar activities would be covered here as well.

6. **Loading areas**. This category would cover loading docks and bays or other outdoor loading areas for commercial or industrial buildings.
7. **Mechanical and electrical equipment**. This would typically include large air conditioning units, ventilation units, electrical transformers, small trash receptacles and other such equipment deemed unsightly by the Municipal District.
8. **Parking and sales lots**. This category would include areas which are deemed unsightly, but still have a need to have some clear sight lines maintained. A vehicle sales lot or a supermarket parking lot are good examples of these areas.

The above list provides a general guideline for when screening may be required, it should not be considered to be exhaustive or cover all examples. Council may use their discretion to implement these guidelines whenever an application for land use re-designation, subdivision or development is made.

Following are examples of each category for reference:

Category 1: Outdoor Storage Areas **Figure 2.1**

Category 1: Outdoor Storage Areas **Figure 2.2**

Category 2: Vehicle Parking and Storage Areas **Figure 2.3**

Category 2: Vehicle Parking and Storage Areas **Figure 2.4**

Category 3: Material Stockpile Areas **Figure 2.5**

Category 4: Exterior Work Areas **Figure 2.6**

Category 5: Garbage and Waste Areas **Figure 2.7**

Category 6: Loading Areas **Figure 2.8**

Category 7: Mechanical & Electrical Equipment **Figure 2.9**

Category 8: Parking Lots and Sales Lots **Figure 2.10**

3.0 LEVELS OF SCREENING

Based on the categories of target activities and facilities, Dillon Consulting recommended a system whereby three (3) different levels of screening would be used to address the variety of screening that would be needed. In order of highest to lowest level of screening they are: full screening, which approximates 100% screening of the property from adjacent properties, partial screening, around 50% screening, and buffer screening, which should obscure approximately 25% of the development from adjacent roads or properties. A more detailed description of the three types of screening follows.

FULL SCREENING

Full screening is used to provide a complete visual barrier of a selected area, using fences, walls, berms and/or tightly spaced evergreen plant material.

Full screening may be considered appropriate when the intent is to fully block the view from the adjacent roads or lands. Garbage storage areas and electrical or mechanical equipment locations are examples of areas that may benefit from full screening. There may be circumstances where full screening is used in conjunction with partial or buffer forms of screening on a site.

Closely spaced evergreen trees are one method of providing full screening.

PARTIAL SCREENING

Partial screening is used to when the intent is to visually block approximately 50% of the activity or facility from adjacent properties or roadways. A partial screen provides a sense of visual transparency between portions of the site and adjacent roads/lands. This moderate level of screening is appropriate for a variety sites.

A combination of walls/ fences, coniferous / deciduous plant material and earth berms can be used to create partial screening by blocking approximately 50% of the site from view. Fences may allow for 50% opacity, trees are planted farther apart and earth berms may only be half the height necessary to block the view. A hedge of deciduous shrubs, such as lilacs or caragana provides significant coverage for 50% of the year. A combination of multiple screening elements can be used to create an interesting visual barrier from both inside and outside the site.

A mixed landscape is an appropriate method of providing partial screening.

BUFFER SCREENING

Buffer screening is used to provide a low level of screening or 'landscape softening'. Vehicle sales lots and commercial parking areas are suggested examples of areas that may benefit from buffer screening.

Fences, low walls, earth berms and a mix of deciduous and coniferous trees and shrubs can be used as components of buffer screening.

A landscape buffer screen is one method of providing the 25% screening suggested for buffer screening.

DETERMINING THE SUGGESTED LEVEL OF SCREENING

In Section 2 of this document a number of categories of activities and facilities for which screening may be required were described. Some of these categories would benefit from minimal screening, while for others, a more complete screening would be appropriate. A common question is:

"How do I determine how much screening I will be asked to provide for my proposed development?"

The precise level of screening that will be required of a landowner or developer will be at the discretion of Council or the MD's Development Officers and will be dependant upon such factors

as the visibility of the site as well as adjacent land uses. However, a general idea of what will be required can be determined through use of a table and general check list.

Below is a table which lays out the screening levels that are suggested for the eight categories of activities and facilities for which screening may be required.

Table 3.1 - Screening Levels by Activity or Facility Category

	Suggested Screening Level		
	Full Screening ~ 100%	Partial Screening ~ 50 %	Buffer Screening ~ 25%
1. Outdoor Storage Areas		✓	
2. Vehicle Parking & Storage		✓	
3. Material Stockpile Areas		✓	
4. Exterior Work Areas		✓	
5. Garbage & Waste Areas	✓		
6. Loading Areas		✓	
7. Mechanical & Electrical Equipment *	✓		
8. Parking Lots & Sales Lots			✓

* This item is suited to full screening of selective areas.

Note: The MD of Foothills Council may determine that a property requires a higher level of screening than recommended in the above matrix.

To determine what level of screening is likely to be required:

First, find the category at left that best describes the proposed development and follow along to the checked column. This will give you a preliminary result for the level of screening required.

Next, answer the following questions:

Is the proposed development:

In or adjacent to a hamlet?	If yes, may need to increase level of screening.
Located on a major road or provincial highway?	If yes, may need to increase level of screening.
Located adjacent to residential development?	If yes, may need to increase level of screening.
Located adjacent to a natural area?	If yes, may need to increase level of screening.

Located near a major recreational facility?	If yes, may need to increase level of screening.
On a site that has flat or rolling terrain?	If rolling, may be able to decrease level of screening depending on location of visually obtrusive activity or facility.
On a site that is bare or well treed?	If well treed, may be able to decrease level of screening depending on location of visually obtrusive activity or facility.
Adjacent to similar uses?	If yes, may be able to decrease level of screening at least on sides adjacent to similar use.

Example 1:

There is a proposal for an RV storage facility. Referring to Table 3.1, this would fall under Category 2 - Vehicle parking and storage areas. For Category 2 partial screening is suggested.

However, the proposed facility is located on a flat site with no trees that is both on a major highway and adjacent to a country residential development. As a result, Council may, at their discretion, require full screening.

Example 2:

There is a proposal for a restaurant within a Hamlet. The restaurant will require a large mechanical fan off the kitchen, a used grease collection bin and a garbage dumpster.

According to Table 3.1, the mechanical equipment and the garbage/waste area will likely require full screening. As the proposed site is within a hamlet and located adjacent to residential lots it is likely that Council will adhere to the recommended full screening.

4.0 PROPOSED SCREENING METHODS

Once the level of screening that is likely to be required is determined, a landowner or developer may ask:

"How do I determine what method to use to provide the required screening?"

It is true that determining the level of screening that is likely to be required by the Municipality is only the first step in the process. Next, the landowner should determine how they will fulfill the likely requirements. This will be included in the application as the "Proposed Screening Plan".

STEP 1:

Prepare a detailed site plan approximately to scale. This plan should include:

- Existing and proposed access to the site with adjacent roads labeled
- Existing internal roadways
- Any easements or rights of way existing on the site (e.g. access easements, power lines or utility rights of way)
- All existing buildings
- The location of any significant natural site features, for example areas with significant slope, water courses or wet areas, areas with existing trees or shrubs etc.
- The location of any proposed buildings
- The location of any proposed internal roads
- The location of any proposed parking, loading, storage, refuse and/or exterior work areas

STEP 2:

Determine the suggested level of screening by referring to Table 3.1 and answering the questions in Section 3 of this document. This should result in an idea of the likely screening requirements.

STEP 3:

Referring to Table 4.1 – Screening Methods and the Screening Methods descriptions and examples, determine the most appropriate methods for fulfilling the likely screening requirements.

STEP 4:

Prepare a "Proposed Screening Plan" and submit it as part of the development application. It may be desirable to have a Professional Landscape Architect prepare this plan particularly if the proposed development is likely to require extensive screening.

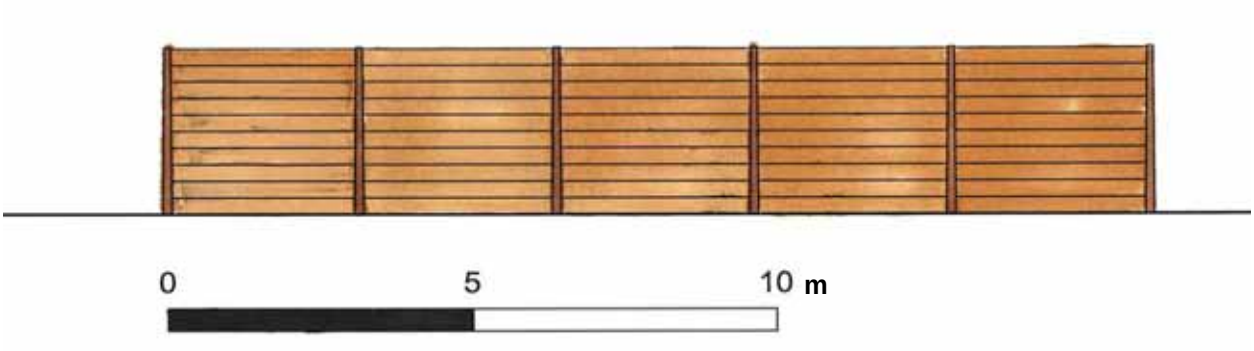
TABLE 4.1 – SCREENING METHODS

Screening Method	Screening Level	Description	Advantages	Disadvantages
Fence or Wall	Full Screening	Solid constructed fence or wall of sufficient height and length to obscure the activity or facility that requires screening. Acceptable Materials Include: Concrete Block, Concrete Panels, Brick, wood, Aluminum, PVC, Stucco **Note: Chain link fences with vinyl inserts are not acceptable.**	Attractive and generally low maintenance requirements.	Relatively large initial expense. Tend to be difficult to build on rolling or densely vegetated areas.
Fence or Wall	Partial Screening	Solid constructed fence or wall of sufficient height and length to obscure approximately 50% of the activity or facility that requires screening. Acceptable Materials: See above	See above	See above
Fence or Wall	Buffer Screening	Sections of fence or wall, may be only partially solid – may have sections of wrought iron or lattice or openings which provide some opportunity for views through. The requirement is that it obscure approximately 25% of the activity or facility that requires screening. Acceptable Materials: See above and add lattice, wrought iron and glass block.	See above	See above
Earth Berm	Full Screening	A mound or bank of earth of sufficient length and height to obscure the activity or facility that requires screening.	Relatively inexpensive. Very low maintenance requirements	Not particularly attractive unless combined with landscaping or hardscaping or both. May need to remove existing vegetation to install.
Earth Berm	Partial Screening	A mound or bank of earth of sufficient length and height to obscure approximately 50% of the activity or facility that requires screening.	See above	See above

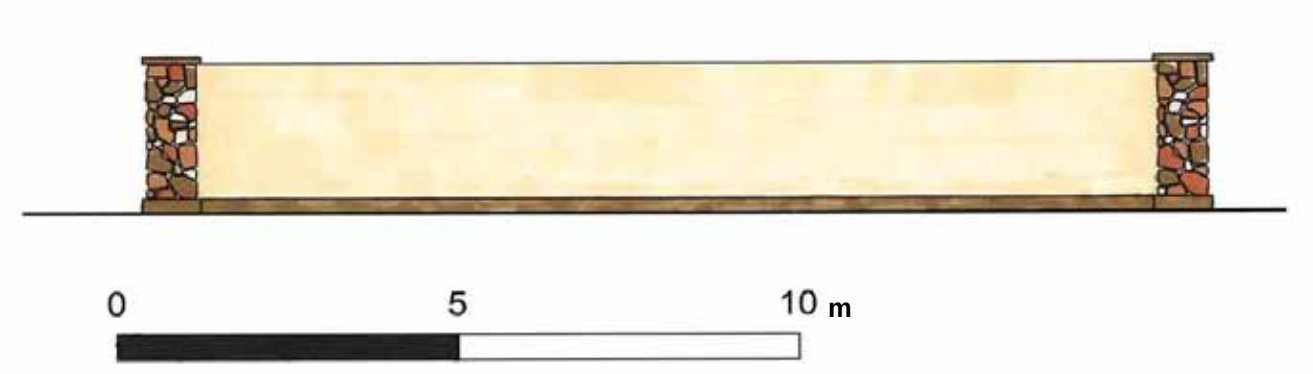
Earth Berm	Buffer Screening	A mound or bank of earth of sufficient length and height to obscure approximately 25% of the activity or facility that requires screening.	See above	See above
Landscaping	Full Screening	Densely planted rows or groupings of evergreen trees of sufficient height and length to completely obscure the activity or facility that requires screening.	Attractive Can be installed on flat or rolling terrain and can work with existing vegetation	Relatively large initial expense. Maintenance requirements Water requirements
Landscaping	Partial Screening	Rows or groupings of trees and shrubs, both evergreen and deciduous of sufficient density to obscure approximately 50% of the activity or facility that requires screening.	See Above	See Above
Landscaping	Buffer Screening	Rows or groupings of trees and shrubs, both evergreen and deciduous of sufficient density to obscure approximately 25% of the activity or facility that requires screening.	See above	See above
Combination	Full Screening	Sections of fencing or walls may be combined with berms or with rows or groupings of trees and shrubs, both evergreen and deciduous of sufficient density to entirely obscure the activity or facility that requires screening.	Has the potential to be the most attractive option.	Can be very expensive Water and maintenance requirements may be significant particularly if landscaping is planted on berms
Combination	Partial Screening	Sections of fencing or walls may be combined with berms or with rows or groupings of trees and shrubs, both evergreen and deciduous of sufficient density to obscure approximately 50% of the activity or facility that requires screening.	See above	See above
Combination	Buffer Screening	Sections of fencing or walls may be combined with berms or with rows or groupings of trees and shrubs, both evergreen and deciduous of sufficient density to obscure approximately 25% of the activity or facility that requires screening.	See above	See above

SCREENING METHODS - EXAMPLES

Fence or Wall Screen – Full or Partial Screening



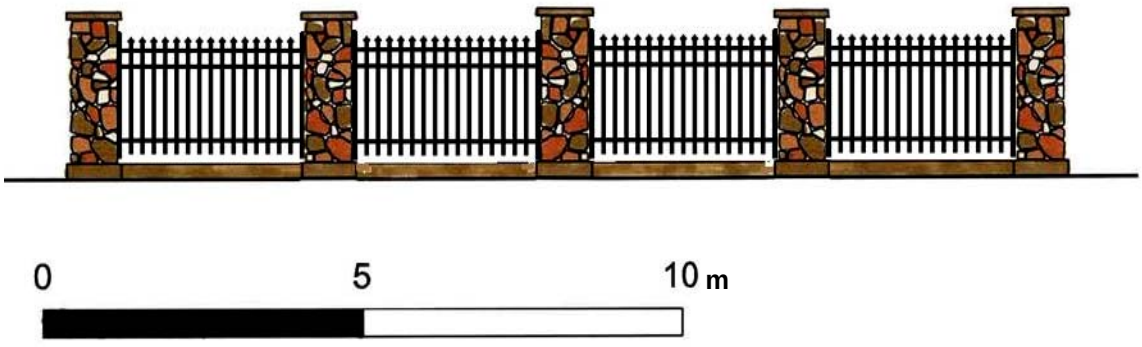
Concrete panel or concrete block fence - Elevation



Stucco wall - Elevation

Note: Decreasing height and/or length can change wall or fence from full to partial screen.

Fence or Wall Screen – Buffer Screening

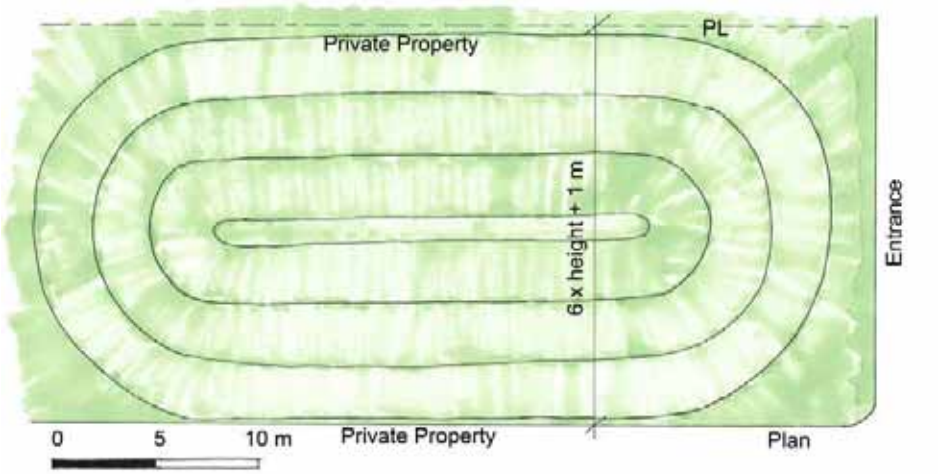


Buffer wall – Elevation

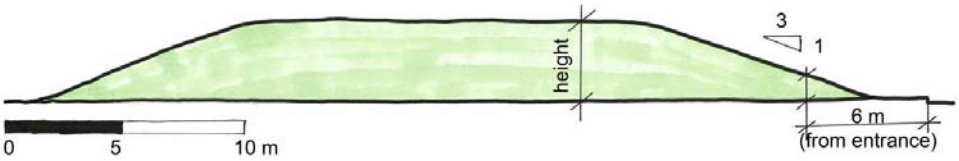
SCREENING METHODS – EXAMPLES (cont)

Earth Berm Screen – Full or Partial Screening

Constructed Berm with Turf



Constructed berm with turf - Plan

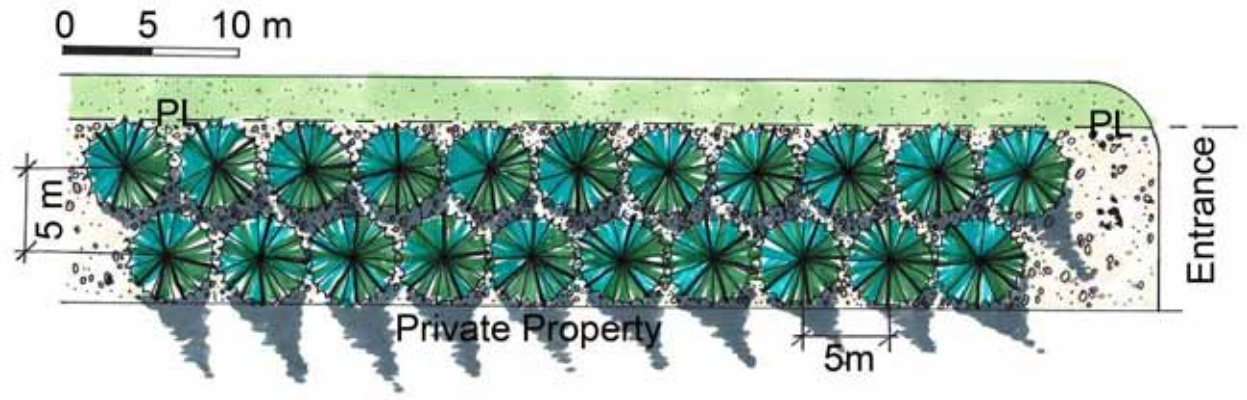


Constructed berm with turf - Elevation

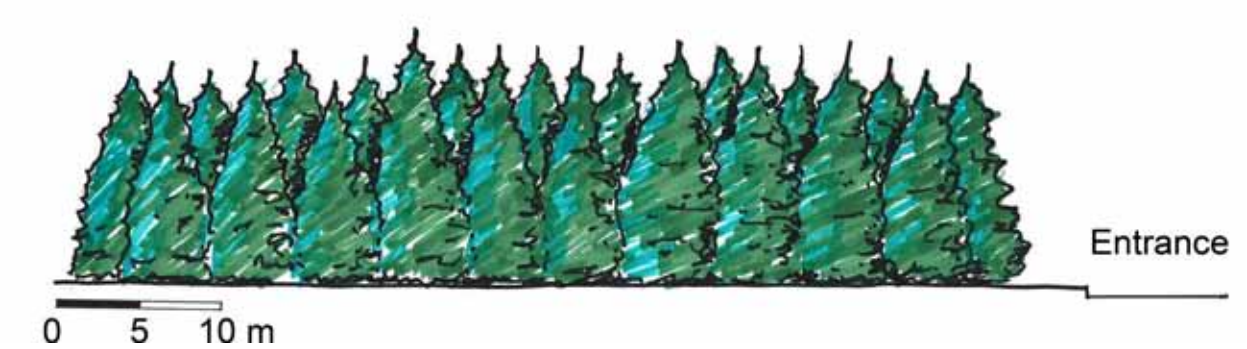
Note: Decreasing height and/or length can change berm from full to partial screen.

SCREENING METHODS – EXAMPLES (cont)

Landscaping Screen – Full Screen
Evergreen Screen



Evergreen Screen - Plan

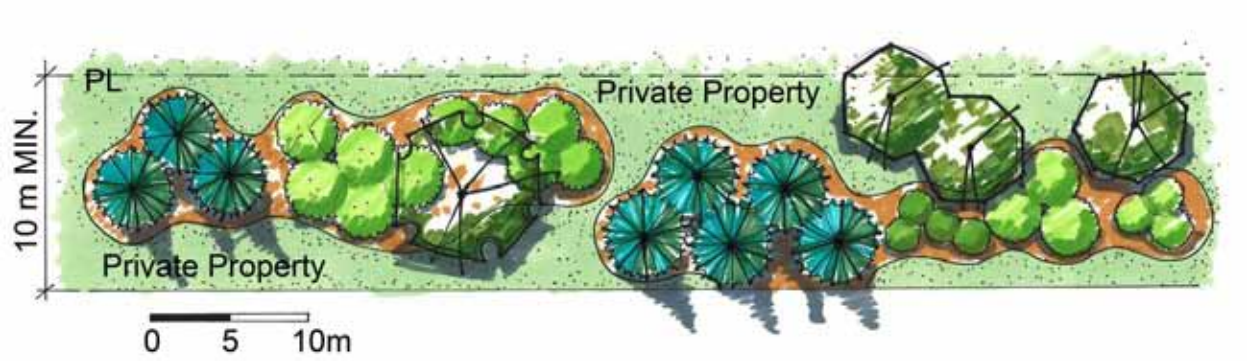


Evergreen Screen - Elevation

SCREENING METHODS – EXAMPLES (cont)

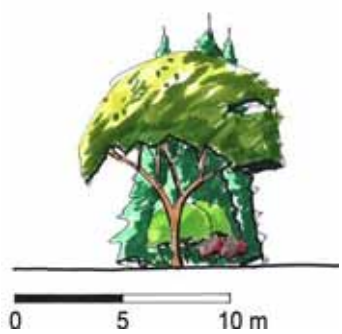
Landscaping Screen – Partial Screen

Mixed Landscape Screen



Mixed Landscape - Plan

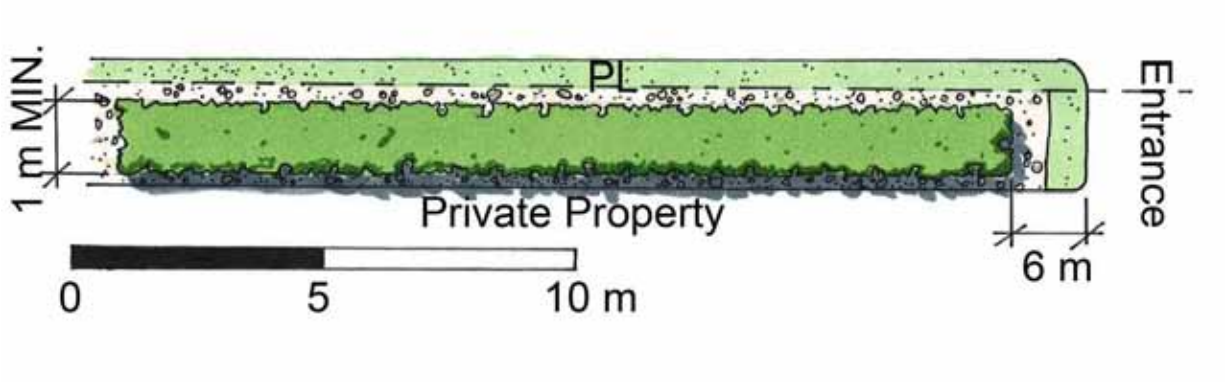
Mixed Landscape - Elevation



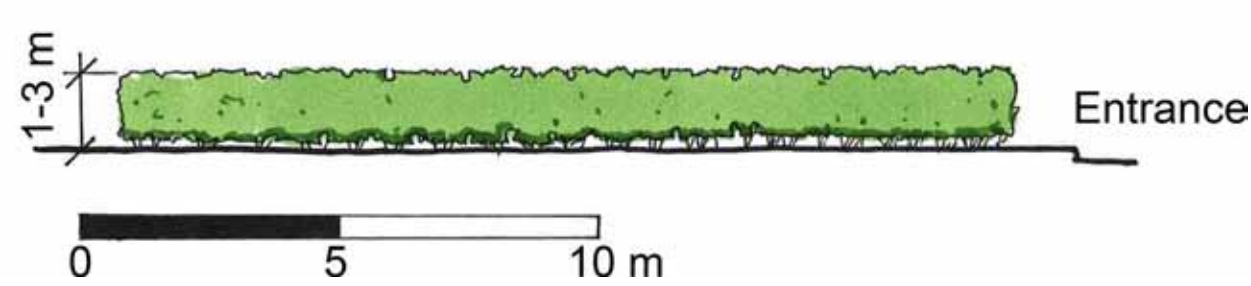
Mixed Landscape - Section

SCREENING METHODS – EXAMPLES (cont)

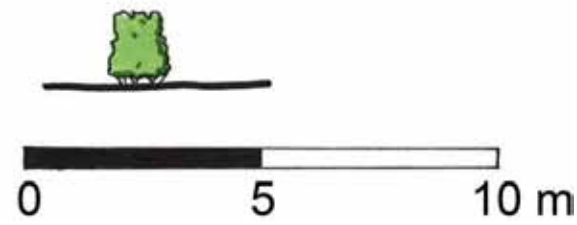
Landscaping Screen – Partial Screen
Deciduous Hedge Screen



Deciduous Hedge – Plan



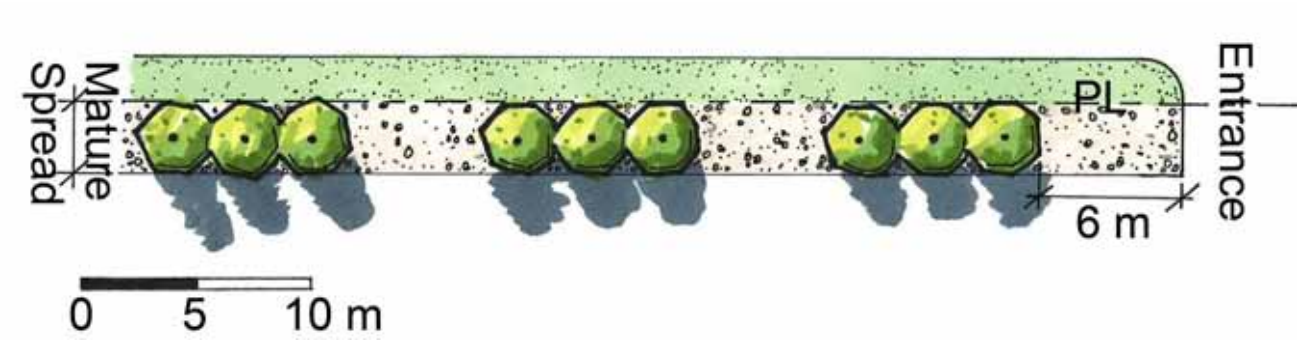
Deciduous Hedge – Elevation



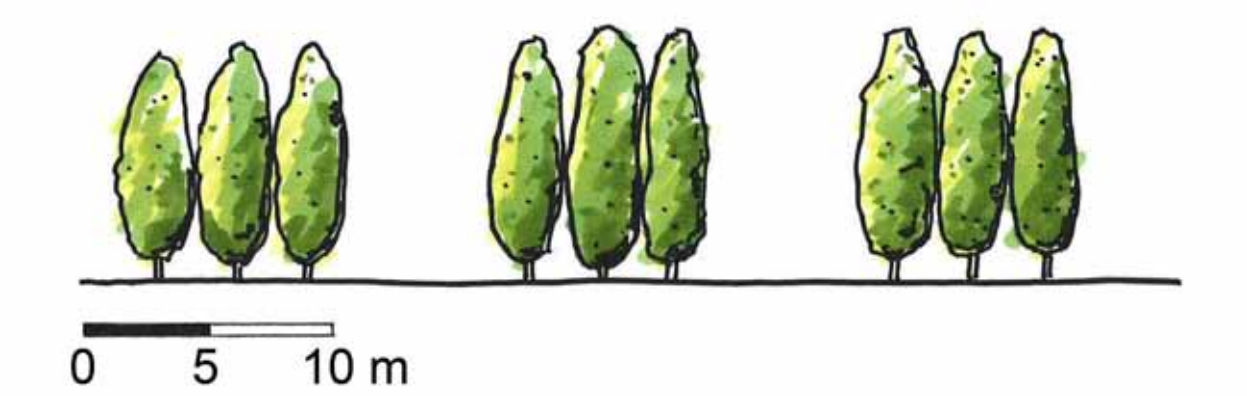
Deciduous Hedge - Section

SCREENING METHODS – EXAMPLES (cont)

Landscaping Screen – Partial Screen
Columnar Tree Screen



Columnar Tree Screen - Plan



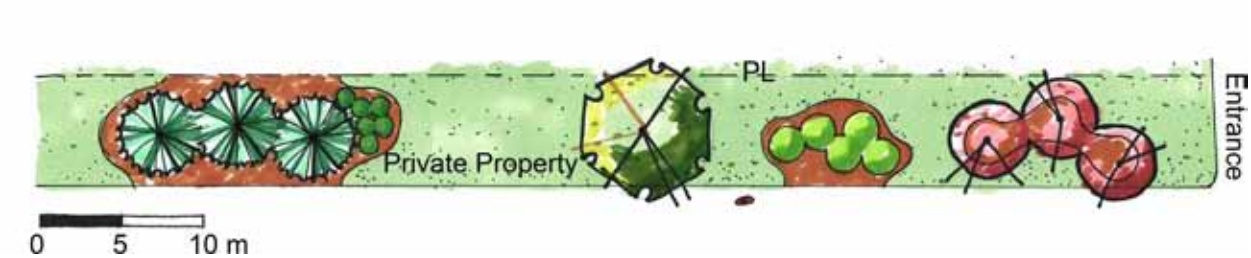
Columnar Tree Screen - Elevation

Note: The above columnar screen qualifies as partial screening if evergreens are used, However, would require more trees if deciduous trees are used.

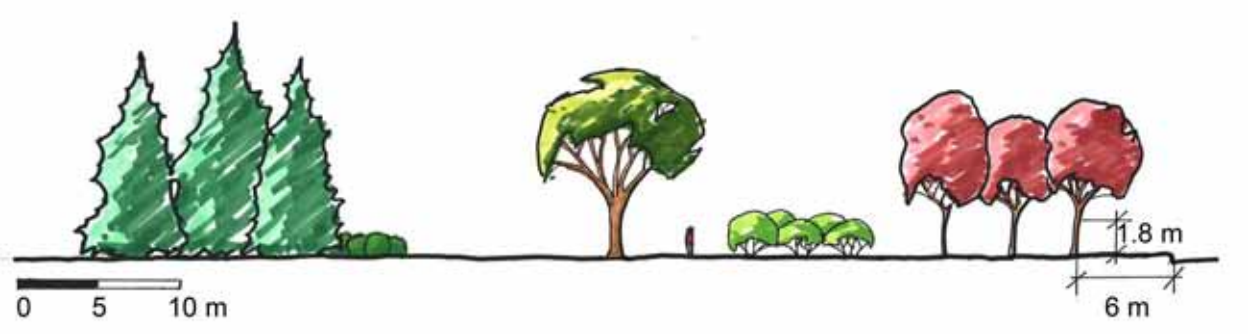
- For full screening space 2/3 of mature height from next tree
- Width varies, use width equal to mature spread
- Plant last tree 6 m + 1/2 mature spread from roadway entrance.

SCREENING METHODS – EXAMPLES (cont)

Landscaping Screen – Buffer Screen



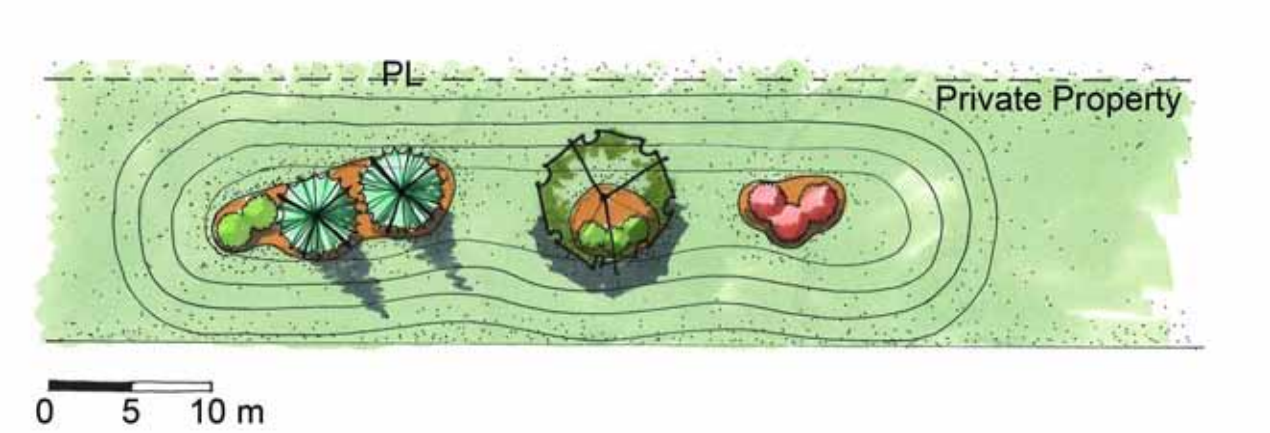
Mixed Planted Landscape - Plan



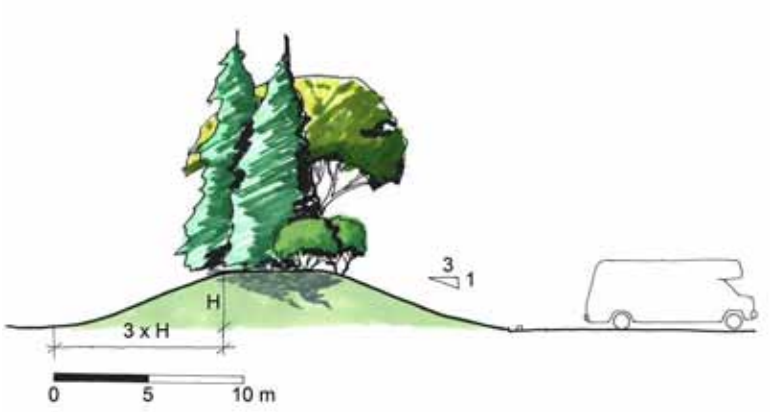
Mixed Planted Landscape - Elevation

SCREENING METHODS – EXAMPLES (cont)

Combination Screen – Full Screening
Berm with Plants on top



Berm with Plants on Top - Plan

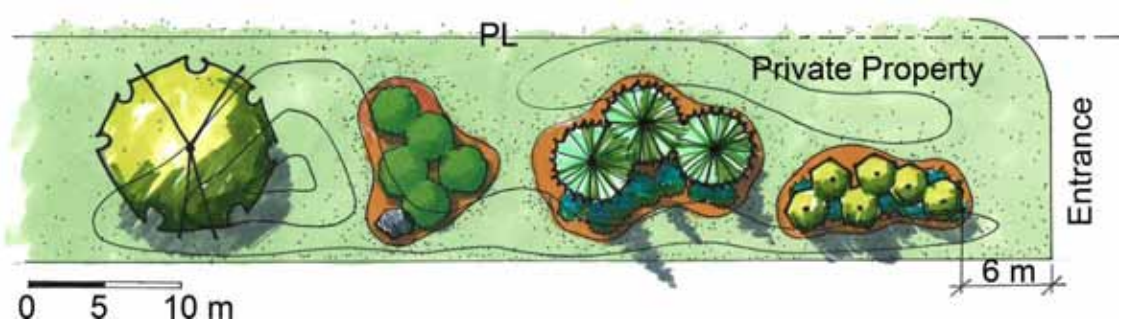


Berm with Plants on Top - Elevation

Note: This option is not recommended unless provisions can be made for irrigation using non-potable or recycled water.

SCREENING METHODS – EXAMPLES (cont)

Combination Screen – Full or Partial Screening
Earth Berms and Mixed Planted Landscaping



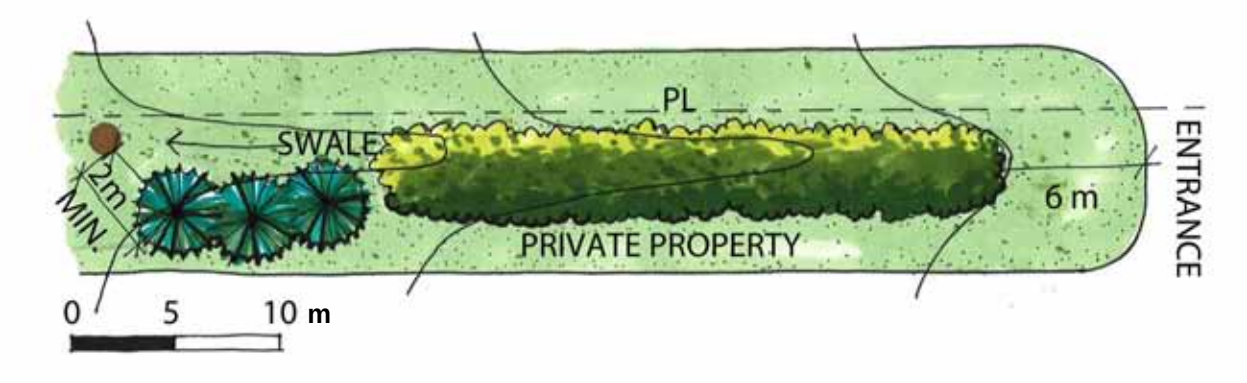
Berms & Mixed Planted Landscape - Plan

Berms & Mixed Planted Landscape - Elevation

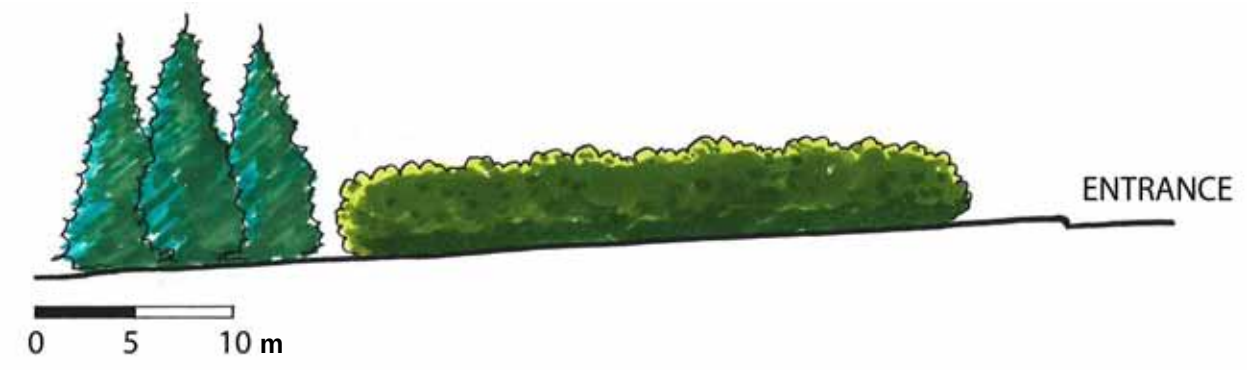
SCREENING METHODS – EXAMPLES (cont)

Combination Screen – Partial Screen

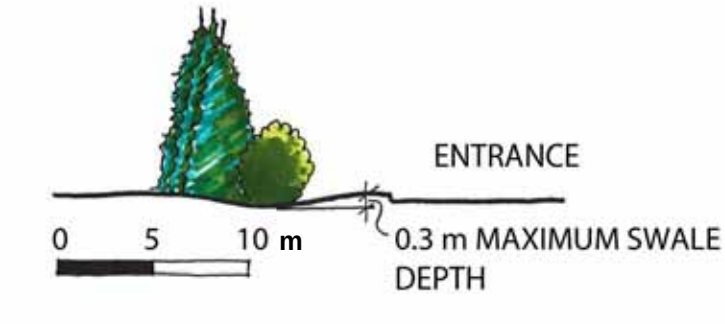
Planted Swale Screen



Swale Planting - Plan



Swale Planting - Elevation



Swale Planting - Section

NOTE: - Width varies, use width equal to mature spread of shrubs plus 1 m

- Keep screen out of 6 m from roadway entrance (deciduous trees can have branches removed below 1.8 m)
- Use only moisture tolerant species at the bottom of swale (dryer species can be located higher up)
- Swale must have outlet to some drainage or depression must drain water within 72 hours.

5.0 DEVELOPING THE SCREENING PLAN

As mentioned in Section 4.0, a complete application for a proposed development that is likely to require screening should include the proposed screening plan.

The proposed screening plan will include a scaled drawing of the site including proposed access, any rights of way or easements, setbacks that apply from roads or right of ways, all buildings, parking areas, and other proposed site improvements. It will clearly indicate which areas are likely to require screening and the type of screening proposed (full, partial or buffer screening), and the methods that will be used to achieve the screening.

It should also include a schedule that describes how the screening will be constructed and what plants, if any, will be utilized. The MD of Foothills has provided a list of specifications, a plant list and some planting details that should assist landowners or prospective developers in answering the question:

"How do I construct my landscape screen?"

The MD of Foothills has developed a set of specifications for landscape screening that will assist applicants with the preparation of their proposed screening plan. These specifications can be found in **Appendix A** of this document.

A list of plant material that is suitable for the Municipal District of Foothills is also provided, in **Appendix B**. This list includes the hardiness (by zone) to assist with plant selection for specific sites. More exposed areas will tend to require hardier plants more suited to colder zones than sheltered locations. The use of native plant material is usually preferred, however, the native plant palette is quite limited and many foreign species have been successfully used in Alberta for decades. Moisture need and salt tolerance should also be considered in choosing plant material. When planting in swales or in lower lying areas, or with irrigation drought tolerance is not as critical, but if the screening plan calls for landscaping on berms then drought tolerance is critical. Where salt spray or runoff from de-icing salts coming in contact with plant material is unavoidable, then selecting salt tolerant species will be beneficial. The mature size of the plant material is given, but these are average sizes only. Some plants will grow to surpass these sizes, while some will not achieve the average sizes. The more favourable the growing conditions are the more likely the plants will achieve or surpass average sizes.

6.0 LANDSCAPE CONSTRUCTION APPROVAL REQUIREMENTS

In accordance with direction from MD Council, the developer will be required to submit two bond sets of landscape construction drawings, and a digital set (.pdf) of the drawing set. All drawings submitted must provide:

1. Name of project, developer, landowner and contact information in title block form;
2. Scale in metric (preferred scales: 1:200, 1:250 or 1:500);
3. North arrow;
4. Legal description, property lines including dimensions;
5. Utility locations, legal easement, rights of way etc;
6. Curb lines, side walks, utility poles, fences and any other boundary condition;
7. Note all existing above and below grade features to be protected & to be removed
8. Existing vegetation, existing irrigation;
9. Depiction of planting beds and all construction items proposed i.e. berms, walkways, driveways, parking areas, structures, natural areas including dimensions;
10. All plant material crowns shown at 2/3 maximum size;
11. Plant list identifying species, quantities, sizes;
12. Details as required;
13. Grading as required;
14. Any other information as requested by MD Council;

Landscape Drawings stamped and submitted by a Registered Landscape Architect should include a construction cost estimate. Cost estimates for landscape drawings not stamped by a Registered Landscape Architect will be determined by MD staff based on the estimated screening costs outlined in the MD of Foothills Planning Fee Schedule. Alternatively, Council may set the required surety amount at their discretion.

Further to the approval of the screening plan, applicants will generally be required to fully execute a Developers Agreement for the landscape construction in advance of commencing construction, including execution of agreements(s), proof of required insurance, payment of review fees and submission of surety, as well as receiving approval on all required development permits as necessary.

7.0 MAINTENANCE REQUIREMENTS

Once the screen has been installed according to specifications, there will be a maintenance requirement to ensure that the screen itself does not become unsightly due to dead or dying vegetation, an abundance of weeds or fences or walls that are in need of maintenance or repair.

The prospect of maintaining the screen may be daunting so the MD has developed a set of requirements that answer the question:

"How much maintenance will be required?"

LANDSCAPING:

1. Maintain all plant material from the time of planting until the date of issue of Final Acceptance Certificate;
2. Maintenance includes all measures necessary to establish and maintain all plants in a vigorous and healthy growing condition;
3. At the time of acceptance, all material must be in a healthy, vigorous growing condition. Un-mulched beds and tree pits must be freshly cultivated and free of weeds, rubbish, and debris. Mulched beds should be free of weeds, rubbish and debris;
4. Remove all dead branches. Prune broken portions of branches back to live lateral;

FENCING AND HARDSCAPING:

1. Fences or walls must be whole and complete including finishes prior to the date of issue of Final Acceptance Certificate.
2. Any damage to walls or fences from weather, wildlife, livestock, traffic accidents or vandalism must be repaired in a timely manner.
3. Fences or walls should be repainted or refinished at such time as they begin to appear unsightly from age or degradation.

8.0 ESTIMATED SCREENING COSTS

The prospect of constructing screening for a proposed development can seem daunting and applicants will most likely find themselves wondering:

"How much is this going to cost me?"

There are many factors that will influence the cost of the screening. These include:

- The size of the development;
- The level of screening required;
- The method of screening which is chosen;
- Whether or not the services of a landscape architect or landscape design/installation contractor are enlisted;
- Market factors related to landscaping and construction materials and services.

There are two components to the cost for screening:

- Fees and letters of credit to the Municipality associated with the application process
- The cost for the design, construction and maintenance of the screening.

Fees to the Municipality

An application that is likely to require a screening component will be assessed a screening plan review fee in addition to regular application fees. Also there will be a requirement for a deposit in the form of a letter of credit to be provided upon approval of the application. This will be returned to the applicant once the screening has been constructed according to the screening plan the satisfaction of the Municipality and the Final Acceptance Certificate has been issued.

There are three possible scenarios with respect to the review fees and deposits:

1. The applicant submits a proposed screening plan prepared by a registered landscape architect complete with a cost estimate. The applicant is then assessed the Screening Plan Review Fee according to the MD's Planning Fees Schedule. The applicant is then required to enter into a Developer's Agreement with the MD and will provide a Letter of Credit based on 125% of the screening cost estimate as prepared by the landscape architect.
2. The applicant submits a proposed screening plan that was not prepared by a registered landscape architect. The applicant is then assessed the Screening Plan Review Fee according to the MD's Planning Fees Schedule. The applicant is then required to enter into a Developer's Agreement with the MD and will provide a Letter of Credit based on 125% of the screening cost estimate as calculated by MD Staff according to the MD Planning Fees Schedule.

3. The applicant submits a proposed screening plan that may or may not have been prepared by a registered landscape architect and are assessed the Screening Plan Review Fee. Council then sets a required surety amount and determines if the applicant will be required to enter into a Developer's Agreement. The applicant will then provide the MD with a Letter of Credit based on the amount determined by Council.

Cost for the Design, Construction and Maintenance of the Screening

There are many variables that will determine the cost of design construction and maintenance of screening. Table 4.1 on pages 13 and 14 does address relative expense of some of the different methods for screening, but it is in no way intended to be a comprehensive guide. The best way to ensure that you know what you are getting into is to hire a reputable landscape architect or a landscaping firm that offers a design/build service. They will have up to date information on costing for various forms of screening and may have creative solutions to meet the requirements that have not been presented here.

If the landowner or developer elects to design their own screening plan, they will be responsible for determining costs for their own budgeting; however the MD will determine the surety amount that is required based on the estimates given in the Planning Fee Schedule as outlined in scenario 2, above.

9.0 CONCLUSION

The purpose of the Screening standards is to provide guidance to landowners or developers who are operating or proposing to operate a commercial enterprise anywhere in the MD of Foothills including the Highway 2A Industrial Corridor, so that they might prevent their business from creating a negative visual impact on surrounding properties.

These guidelines were developed with the intent to protect the visual quality of the lands in the MD and are not intended to impose undue hardship on business owners. The guideline package is intended to assist applicants for commercial or industrial projects in anticipating if screening might be required for their project, and to provide guidance to allow them to successfully navigate the design and approvals process.

The package guides applicants through the process of determining what level of screening might be required for their proposed development and then provides materials to assist in the preparation of the Screening Plan. Expectations with respect to maintenance are discussed as well as an approximation of costs for constructing the screening. The appendices contain supplementary information and detailed specifications, all of which are intended to facilitate the approval of the proposed development.

The MD of Foothills' appointed Development Officers or the MD Council will consider a landscape screening proposal submitted by a developer as part of the application process. At their discretion, they will determine if and how much screening is necessary. The goal is to work with applicants to ensure that future developments maintain or enhance the visual quality of the MD of Foothills and to preserve our rural character for future generations.

A1 SCREENING SPECIFICATIONS

GENERAL

1. All requirements of the MD of Foothills No. 31 Land Use Bylaw must be complied with. Please note Section 10.2.0 regarding special setback requirements, Section 10.7.0 regarding landscaping and fencing.
2. All planting work is to be carried out by experienced personnel under the direction of a skilled horticultural foreman.

SIGHTLINES and SETBACKS

1. Line assignments (setbacks) from utilities, as determined by the municipal engineer;
2. Ensure required setbacks from highways or municipal roads
3. Ensure appropriate sight line distance for all entrances;

BERMS

4. Berms are to be three (3) horizontal units on each side for every vertical unit (3:1);
5. Compact earth to 85 standards proctor density;
6. Top of berm is to be rounded;

PLANTING

7. Planting area for coniferous trees, minimum 11m in width for double row and 7m in width of single row;
8. All trees spaced ½ maximum spread or 5m (whichever is less)
9. Keep all roots and root balls watered prior to planting
10. Dig out all planting excavations by tree spade, backhoe or hand shovel;
11. Ensure width of all planting excavations is 450mm greater on all sides than the width of the root ball or as per site conditions to maintain soil volume;
12. Scarify subgrade to a depth of 75mm under all tree pits and shrub beds;
13. Place plant plumb in the centre of the planting pit with a firm base under the root ball;
14. Face the plant to give the best appearance or relationship to the adjacent structures;
15. Place bare root plants so that the roots lie in a natural position;
16. Backfill with topsoil and firmly compact to ensure the plant retains its orientation. Ensure no air pockets remain around the roots;
17. Thoroughly water trees within the same working day of planting trees.
18. Minimum size for coniferous trees is 1 meter height, 600mm root ball diameter
19. Minimum #5 pot for all shrubs;
20. Minimum 40mm caliper for deciduous trees, 600mm root ball diameter
21. All planting bed should be mulched to a depth of 75mm. Keep material 50mm away from trunks and stems to prevent rotting of bark.
22. Ensure that the trees remain at grade surrounded by a tree well to a depth of 100mm after planting and watering. All trees to be mulched starting 50mm from the root flare (trunk) and extending the length of the hole.
23. Wood type of mulch can be any type except Fraxinus species. All non-wood mulch types must receive approval of the MD Municipal Engineer;

24. Mulch sizes to be an even mix of sizes ranging from 10mm x 10mm x 5mm to 40mm x 60mm x 35mm;
25. Mulch material should have no more than 5% by volume of soil, sawdust, peat moss, needles and twiggy material or longer strips;
26. Minimum 125mm depth of topsoil for sod, minimum 150mm depth of topsoil for seed;
27. Shrubs to be in 600mm depth topsoil bed;
28. As a minimum, all plant material must be nursery grown and meet the specifications set out in the latest Guide Specifications for Nursery Stock prepared by the Canadian Nursery Trade Association (C.N.T.A) and the International Society of Arboriculture (I.S.A.) for size, height, spread, grading, quality and method of cultivation;
29. Nomenclature of the specified plants shall conform to the International Code of Nomenclature for Cultivated Plants and the latest edition of Standardized Plant Names;
30. Any plant material not conforming to (the CNTA point above) will be designed as “collected plants”;
31. “Collected plants” may only be used when approved in writing by the MD Municipal Engineer.
32. All material must conform to the sizes shown on the plant list. Larger material may be used only when approved by MD Municipal Engineer. Use of larger plants will not increase the contract price.
33. Do not use plant material on which the root ball has been cracked or broken preparatory to or during the planting process.

A2 PLANT LIST

Scientific Name	Common Name	Saline Tolerance **H - High M - Medium L - Low**	Moisture Need **H - High M-Medium L - Low**	Spread (m)	Zone	Height (m)	Class
Deciduous Trees							
Acer ginnala	Amur Maple	M/H	M/L	3	2	5	F
Acer negundo 'Baron'	Manitoba Maple	M/H	M/L	12	2	12	FI
Acer negundo	Manitoba Maple	M/H	M/L	12	2	14	FI
Acer saccharinum	Silver Maple	L	M	12	3	15	F
Betula papyrifera	Paper Birch	M	H/M	6	2-3	12	N
Betula pendula 'Lanciniata'	Cutleaf Weeping Birch	M/H	H/M	6	2-3	12	F
Betula pendula 'Youngii'	Young's Weeping Birch	M/H	H/M	4	2	4	F
Caragana aborescens 'Sutherland'	Sutherland Caragana	M/H	L	1.5	2	5	FI
Crataegus mordenensis 'Snowbird'	Hawthorn	M/H	M/L	4	3	5	F
Crataegus mordenensis 'Toba'	Hawthorn	M/H	M/L	4	3	5	F
Crataegus succulenta	Fleshy Hawthorn	M/H	M/L	8	3	6	N
Elaeagnus angustifolia	Russian Olive	H	L	5	3	5	FI
Fraxinus americana	White Ash	M	M/L	12	3	16	F
Fraxinus mandshurica	Manchurian Ash	M	H/M	6	2-3	12	FD
Fraxinus nigra	Black Ash	M	H/M	3	2-3	8	FD
Fraxinus nigra	Summit Ash	M	H/M	3	2-3	10	FD
Fraxinus nigra x mandshurica	Fall Gold Ash	M	H/M	4	2-3	10	FD
Fraxinus pennsylvanica	Bergeson Green Ash	M/H	M/L	8	3	15	F
Fraxinus pennsylvanica 'Heuver'	Foothills Green Ash	M/H	M/L	8	3	15	F
Fraxinus pennsylvanica	Prairie Spire Green Ash	M/H	M/L	6	2-3	15	F
Fraxinus pennsylvanica	Green Ash	M/H	M/L	8	3	15	F
Fraxinus x Northern Gem	Northern Gem Ash	M/H	M/L	7	3	10	FD
Fraxinus x Northern Treasure	Northern Treasure	M	H/M	7	3	10	FD
Fraxinus pennsylvanica	Patmore Green Ash	M/H	M/L	8	2-3	15	F
Juglans cinerea	Butternut	M	M/L	4	3-4	10	F
Larix laricina (deciduous conifer)	Tamarack/ American Larch	M/L	H	3	1-2	15	N
Larix sibirica (deciduous conifer)	Siberian Larch	M	M	3	2	12	F
Malus x Big River	Big River Crabapple	M/H	M	3	2	5	F
Malus x Selkirk	Selkirk Crabapple	M/H	M	4	2-3	5	F
Malus x Spring Snow	Spring Snow Crabapple	M/H	M	5	2-3	8	F
Malus x Thunderchild	Thunderchild Crabapple	M/H	M	4	2-3	8	F
Malus x Dolgo	Dolgo Crab	M/H	M	4	2-3	6	F
Malus x Kelsey	Kelsey Crab	M/H	M	4	2-3	5	F
Malus x Makamic	Makamic Crab	M/H	M	3	2-3	5	F

Scientific Name	Common Name	Saline Tolerance **H - High M - Medium L - Low**	Moisture Need **H - High M-Medium L - Low**	Spread (m)	Zone	Height (m)	Class
Malus x Radiant	Radiant Crab	M/H	M	5	2-3	5	F
Malus x Royal Beauty	Royal Beauty Crab	M/H	M	3	2-3	3	F
Malus x Royalty	Royalty Crab	M/H	M	5	2-3	5	F
Malus baccata	Rosthern (Siberian) Crab	M/H	M	2.5	2-3	5	F
Populus angustifolia	Narrow-leaf cottonwood	M/L	M/H	9	2-3	18	N
Populus balsamifera	Balsam Poplar	M/H	M	9	1	20	N
Populus x Assiniboine	Assiniboine Cottonwood	M/H	M/H	12	2-3	12	F
Populus deltoides	Cottonwood	M/H	M/H	15	2-3	20	F
Populus tremula erecta	Swedish Columnar Aspen	M/H	M/L	1.5	2	2	F
Populus tremuloides	Advance Aspen	M/H	M	3	2	5	F
Populus tremuloides	Pikes Bay Aspen	M/H	M	3	2	5	F
Populus tremuloides	Trembling Aspen	M/H	M/L	3	1	5	N
Populus x 'Brooks'	Brooks #6 Poplar	M/H	M	12	2-3	15	F
Populus x 'Byland Green'	Byland Green Poplar	M/H	M	12	2-3	15	F
Populus x canescens	Tower Poplar	M/H	M	2	2-3	2.5	F
Populus X Northwest	Northwest Poplar	M/H	M	15	2-3	20	F
Prunus maackii	Amur Cherry	M/H	M	5	2	8	F
Prunus x nigrella 'Muckle'	Muckle Plum	M	M	3	3	4	F
Prunus nigra	Princess McKay	M/H	M	2	3	4	F
Prunus padus commutata	Mayday	M/H	M	8	3	8	F
Prunus pensylvanica	Pin Cherry	M/H	M/L	3	3	5	N
Prunus virginiana	Baileys Schubert	M/H	M/L	5	2	8	F
Prunus virginiana melanocarpa	Native Chokecherry	M/H	M/L	3	2-3	5	N
Prunus virginiana x Midnight	Midnight Schubert	M	M	5	3	8	F
Prunus virginiana x Robert's	Robert's Schubert	M	M	3	3	8	F
Pyrus ussuriensis	Ussurian Pear	M/L	M/H	4	3	6	F
Quercus macrocarpa	Bur Oak	M/H	M/L	8	3	10	F
Salix acutifolia	Sharp-Leaf Willow	M/H	H/L	15	2-3	15	N
Salix alba sericea	White Willow	M/H	M/H	12	2-3	15	F
Salix alba vitellina	Golden Willow	M/H	M/H	12	2-3	15	F
Salix pentandra	Laurel-Leaf Willow	M/H	M/H	12	2-3	12	F
Sorbus americana	American Mountain Ash	L	M/L	5	2	8	N
Sorbus aucuparia 'Blackhawk'	European Mountain Ash	L	M/L	2.5	3	10	F
Sorbus aucuparia 'Pyramidal'	Pyramidal Mountain Ash	L	M/L	2.5	3	10	F
Sorbus aucuparia 'Rossica'	Russian Mountain Ash	L	M/L	4	3	10	F
Sorbus decora	Showy Mountain Ash	L	M/L	5	2	6	F
Syringa reticulata 'Ivory Silk'	Japanese Tree Lilac	M	M/H	3	3	5	F
Tilia americana	American Basswood	M	M/H	5	3	12	F
Tilia cordata	Littleleaf Linden	M/H	M/L	5	3	12	F

Scientific Name	Common Name	Saline Tolerance **H - High M - Medium L - Low**	Moisture Need **H - High M-Medium L - Low**	Spread (m)	Zone	Height (m)	Class
Tilia cordata' Golden Cascade'	Golden Cascade Linden	M/H	M/H	5	3	12	F
Tilia cordata 'Harvest Gold'	Harvest Gold Linden	M/H	M/H	5	3	12	F
Tilia cordata 'Morden'	Morden Linden	M/H	M/L	5	2	12	F
Ulmus americana	American Elm	H	M/L	10	2	15	F
Ulmus americana 'Brandon'	Brandon Elm	H	M/H	10	2-3	15	F
Evergreen Trees							
Picea glauca	White Spruce	M/H	M	5	2	20	N
Picea glauca densata	Black Hills Spruce	M/H	M	4	2	5	F
Picea pungens	Colorado Spruce	M/H	M/L	5	2	20	F
Picea pungens 'Bakeri'	Bakeri Spruce	M/H	M/L	3	2	4	F
Picea pungens 'Fat Albert'	Fat Albert Spruce	M/H	M/L	6	2	13	F
Picea pungens 'Hoopsii'	Hoopsii Spruce	M/H	M/L	2	2	12	F
Picea pungens 'Montgomery'	Montgomery Spruce	M/H	M/L	1	2	2	F
Picea pungeuns 'Fastigiata'	Columnar Blue Spruce	M/H	M/L	1	2	6	F
Picea pungens glauca	Colorado Blue Spruce	M/H	M/L	5	2	20	F
Pinus aristata	Bristlecone Pine	M	M/L	2	2	7	F
Pinus cembra	Swiss Stone Pine	M	M/L	5	3-4	12	F
Pinus contorta latifolia	Lodgepole Pine	M/L	M/L	5	2	20	N
Pinus ponderosa	Ponderosa Pine	M/H	M/L	6	2	15	F
Pinus sylvestris	Scotch Pine	M/H	M/L	6	2-3	12	F
Pinus sylvestris fastigiata	Columnar Scotch Pine	M/L	M/L	1	2-3	8	F
Pinus uncinata	Mountain Pine	M/H	M	2	4	4	F
Pinus flexilis	Limber Pine	M	M/L	6	4	15	N
Evergreen Shrubs							
Juniperus communis 'Effusa'	Effusa Common Juniper	M	M/L	2	2	0.3	F
Juniperus chinensis' Monlep'	Mint Julep Juniper	M	M/H	2	4	1.3	F
Juniperus horizontalis	Andorra Juniper	H	M/L	2	2	0.3	F
Juniperus horizontalis'Blue Chip'	Blue Chip Juniper	H	M/L	2	3-4	0.3	F
Juniperus horizontalis	Horizontal Juniper	M/H	M/L	2	2	0.3	N
Juniperus horizontalis	Gold Coast Juniper	M/H	M/L	1.5	2	0.8	F
Juniperus horizontalis	Prince of Wales Juniper	M/H	M/L	2	2	0.2	F
Juniperus horizontalis	Wilton Carpet Juniper	M/H	M/L	1	3	0.2	F
Juniperus sabina	Savin Juniper	M/H	M/L	2	3	1	F
Juniperus sabina 'Arcadia'	Arcadia Juniper	M/H	M/L	2	3	0.5	F
Juniperus sabina 'Blue Danube'	Blue Danube Juniper	M/H	M	2	3	0.6	F
Juniperus sabina 'Broadmoor'	Broadmoor Juniper	M/H	M	2	3	0.3	F
Juniperus sabina 'Buffalo'	Buffalo Juniper	M/H	M/L	2	2	0.4	F

Scientific Name	Common Name	Saline Tolerance **H - High M - Medium L - Low**	Moisture Need **H - High M-Medium L - Low**	Spread (m)	Zone	Height (m)	Class
Juniperus sabina	Calgary Carpet Juniper	M/H	M/L	1.5	2	0.3	F
Juniperus sabina	New Blue Tam Juniper	M/H	M/L	1.5	3	0.6	F
Juniperus sabina 'Scandia'	Scandia Juniper	M/H	M	1.5	3	0.3	F
Juniperus sabina 'Tamariscifolia'	Tam Juniper	M/H	M	2	3	0.6	F
Juniperus scopulorum	Rocky Mountain Juniper	M/H	L	1.5	2	3	N
Juniperus scopulorum	Cologreen Juniper	M/H	M/L	1.5	2	4	F
Juniperus scopulorum	Grey Gleam Juniper	M/H	L	1.5	2	4	F
Juniperus scopulorum	Moonglow Juniper	M/H	M/L	1.5	2	4	F
Juniperus scopulorum	Witchita Blue Juniper	M/H	L	1.5	2	4	F
Picea glauca conica	Dwarf Alberta Spruce	M/H	L	1	3	2	F
Picea abies nidiformis	Nest Spruce	L	M/H	1.5	3	1.2	F
Picea pungens 'Globosa'	Globe Blue Spruce	M/H	M/L	1	2	2	F
Pinus cembra	Swiss Mountain Pine	M	M/L	5	4	10	F
Pinus mugo 'mugo'	Mugo Pine	M/H	M/L	2	2	4	F
Pinus mugo pumila	Dwarf Mugo Pine	M/H	M/L	1.5	3	1	F
Thuja occidentalis 'Brandon'	Brandon Cedar	L	M/H	1.5	3	4	F
Thuja occidentalis 'Holmstrup'	Holmstrup Dwarf Cedar	L	M/H	1	3	2	F
Thuja occidentalis 'Woodwardii'	Globe Cedar	L	M/H	2	3	2	F

Deciduous Shrubs

Acer ginnala	Amur maple (Multi-stemmed)	M/H	M/L	3	2	5	F
Alnus crispa	Alder	M	M/H	3	2	3	N
Amelanchier alnifolia	Honeywood Saskatoon	M	M/H	4	2	5	F
Amelanchier alnifolia	Martin Saskatoon	M	M/H	3	2	4	F
Amelanchier alnifolia	Northline Saskatoon	M	M/H	3	2	4	F
Amelanchier alnifolia	Saskatoon (Native)	M	M/H	3	2	4	N
Aronia melanocarpa	Chokeberry	M	M/L	1	3	1.5	F
Atriplex canescens	Fourwing Saltbush	H	L	1.5	3	1.3	N
Berberis thunbergii	Emerald Carousel Barberry	M/H	L	1.3	3	1.3	F
Berberis thunbergii	Crimson Pygmy Barberry	M/H	L	0.6	3	0.8	F
Buxus sp.	Boxwood	M	L	0.5	3-4	0.5	F
Caragana arborescens	Common Caragana	H	M/L	3	2	4	F
Caragana arborescens 'Lorbergii'	Fernleaf Caragana	H	M/L	2	2	4	F
Caragana arborescens 'Sutherland'	Sutherland Caragana	H	M/L	1	2	4	F
Caragana frutex 'Globosa'	Globe Caragana	H	M/L	1	2	1	F
Caragana pygmaea	Pygmy Caragana	H	M/L	2	2	1	F
Cornus alba 'Aureo-marginata'	Silver-leaf Dogwood	L	M/H	1.5	2-3	2	F
Cornus alba	Bud's Yellow Dogwood	M	M/L	2	2	1.5	F

Scientific Name	Common Name	Saline Tolerance **H - High M - Medium L - Low**	Moisture Need **H - High M-Medium L - Low**	Spread (m)	Zone	Height (m)	Class
Cornus alba 'Gouchaultii'	Mottled Dogwood	L	M/H	2	2-3	2	F
Cornus alba siberica	Variegated Dogwood	L	M/H	2	2-3	2	F
Cornus alba 'Bailhalo'	Ivory Halo Dogwood	L	M/H	1.5	2-3	1	F
Cornus alba 'Kesselringii'	Purple Twig Dogwood	L	M/H	2	2-3	2	F
Cornus alba 'Sibirica'	Siberian Coral Dogwood	L	M/H	2	3	2	F
Cornus sericea 'Kelseyi'	Kelsey Dwarf Dogwood	L	M/H	0.8	3	0.8	F
Cornus sericea/stolonifera	Red Osier Dogwood	L	M/H	2	3	2	N
Corylus cornuta	Beaked Hazelnut	M	M	3	3	2.5	N
Cotoneaster lucidus/acutifolia	Peking Cotoneaster	M	M/L	2	2	2	F
Cotoneaster integerrimus	European Cotoneaster	M	M/L	4	2		F
Eleagnus commutata	Wolf Willow	H	L	2	2	2	N
Euonymus alata	Winged Burning Bush	M	M	1	3	1.5	F
Euonymus nana	Dwarf Burning Bush	M/H	L	1	3	1	F
Euonymus nana 'Turkestanica'	Turkestan Burning Bush	M/H	L	1	3	1	F
Forsythia ovata	Northern Gold Forsythia	L	M/H	1.5	3	2	F
Halimodendron halodendron	Salt Bush	H	L	2	2	2	FI
Hippophae rhamnoides	Sea Buckthorn (female)	H	L	4	2	4	FI
Hippophae rhamnoides	Sea Buckthorn (male)	H	L	4	2	4	FI
Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	M/H	M/H	1	3	1	F
Hydrangea paniculata 'Grandiflora'	Peegee Hydrangea	M/H	M/H	1	3	1	F
Lonicera tartarica	Arnold Red Honeysuckle	H	M	2.5	3	4	F
Lonicera tartarica	Scarlet Trumpet Honeysuckle	H	M	2.5	3	4	F
Lonicera caerulea edulis	Sweetberry Honeysuckle	H	M	1.2	2	1.5	N
Lonicera spinosa 'Alberti'	Albert Regel Honeysuckle	H	M	1	3		F
Lonicera xylosteoides 'Claveyi'	Clavey's Dwarf Honeysuckle	H	M	1.5	3	1.5	F
Lonicera xylosteoides 'Miniglobe'	Miniglobe Honeysuckle	H	M	1	3	1.5	F
Philadelphus	Blizzard Mockorange	M	M	1.5	2	1.5	F
Philadelphus lewisii	Waterton Mockorange	M	M	1.5	2	2	N
Philadelphus x 'Galahad'	Galahad Mockorange	M	M	1.5	2	1.5	F
Philadelphus	Golden leaf Mockorange	M	M	1.5	2	1.5	F
Physocarpus opulifolius 'Luteus'	Golden Ninebark	M	L	1	2	1.3	F
Physocarpus opulifolius 'Diabolo'	Diabolo Ninebark	M	L	2.5	2	2.5	F
Physocarpus opulifolius	Nugget Ninebark	M	L	1.5	2	1.5	F
Potentilla fruticosa	Native Potentilla	H	M/L	1	2	1	N
Potentilla fruticosa	Abbotswood Potentilla	H	M/L	1	2	1	F
Potentilla fruticosa	Cobalt Potentilla	H	M/L	1	2	1	F
Potentilla fruticosa	Coronation Triumph Potentilla	H	M/L	1	2	1	F

Scientific Name	Common Name	Saline Tolerance **H - High M - Medium L - Low**	Moisture Need **H - High M-Medium L - Low**	Spread (m)	Zone	Height (m)	Class
Potentilla fruticosa	Floppy Disk Potentilla	H	M/L	0.8	2	0.8	F
Potentilla fruticosa	Gold Drop Potentilla	H	M/L	0.8	2	0.8	F
Potentilla fruticosa	Goldfinger Potentilla	H	M/L	1	2	1.5	F
Potentilla fruticosa	Gold Star Potentilla	H	M/L	0.8	2	0.8	F
Potentilla fruticosa	Jackman Potentilla	H	M/L	1	2	1	
Potentilla fruticosa	Katherine Dykes Potentilla	H	M/L	1	2	1	F
Potentilla fruticosa	Mango Tango Potentilla	H	M/L	0.6	2	0.6	F
Potentilla fruticosa	Moonlight Potentilla	H	M/L	1.2	2	1.2	F
Potentilla fruticosa	Orange Whisper Potentilla	H	M/L	1	2	1	F
Potentilla fruticosa	Pink Beauty Potentilla	H	M/L	1	2	1	F
Potentilla fruticosa	Red Ace Potentilla	H	M/L	1	2	0.8	F
Potentilla fruticosa	Red Robin Potentilla	H	M/L	0.6	2	1	F
Potentilla fruticosa	Snowbird Potentilla	H	M/L	1	2	1	F
Potentilla fruticosa	Yellow Gem Potentilla	H	M/L	0.8	2	1	F
Prinsepia sinensis	Cherry Prinsepia	M/H	M/L	2	3	2	F
Prunus besseyi	Western Sand Cherry	M	M/L	1	2	1	F
Prunus cerasus	Evans Sour Cherry	M	M	3	2	2	F
Prunus x cistena	Purple-leaf Sand Cherry	M/H	M	1.5	2	2	F
Prunus fruticosa	Mongolian Cherry	M	M	1	2	1	F
Prunus tenella	Russian Almond	M	M/L	1	3	1.5	F
Prunus tomentosa	Nanking Cherry	M	M/L	1	2	2	F
Prunus triloba 'Multiplex'	Double Flowering Plum	M	M	1.5	3	2	F
Prunus virginiana	Native Chokecherry	M	M/L	3	2	2	N
Prunus virginiana 'Schubert '	Schubert Chokecherry	M	M/L	3	2	2.5	F
Rhus glabra	Smooth Sumac	M/H	L	4	2	4	F
Rhus trilobata	Threeleaf Sumac /Skunkbush	M/H	M/L	2	2	1	N
Rhus typhina	Staghorn Sumac	M/H	M/L	3	2	3	N
Ribes alpinum	Alpine Currant	M/H	L	1.5	2-3	1.5	N
Ribes aureum	Golden Currant	M	L	1.5	2	1.5	N
Ribes nigrum	Wild Black Currant	M	M	1	2	2	F
Ribes nigrum 'Wellington'	Wellington Currant	M	M/H	1	2	1.3	F
Ribes nigrum 'Ben Novas'	Ben Novas Currant	M	M/H	1.5	3	1.5	F
Ribes oxycanthoides	Gooseberry	M	M/L	1	2	1	N
Ribes 'Pixwell'	Pixwell Gooseberry	M	M	1.5	3	1.2	F
Ribes sativum 'Red Lake'	Red Lake Currant	M	M	1	2-3	2	F
Ribes sativum	White Currant	M	L	1	2-3	1.5	N
Rosa acicularis	Wild Prickly Rose	M	L	1	2	1	N
Rosa x Cuthbert Grant	Cuthbert Grant Rose	M	M	1	3	1	F
Rosa x John Cabot	John Cabot Rose	M/H	L	1.8	2	2.8	F

Scientific Name	Common Name	Saline Tolerance **H - High M - Medium L - Low**	Moisture Need **H - High M-Medium L - Low**	Spread (m)	Zone	Height (m)	Class
Rosa x Henry Kelsey	Henry Kelsey Rose	M/H	L	1.5	2	1.5	F
Rosa x Morden Sunrise	Morden SunriseRose	M	M	1.3	3	1.3	F
Rosa x Morden Snow Beauty	Morden Snowbeauty Rose	M	M	0.8	2	1	F
Rosa x Morden Fireglow	Morden Fireglow Rose	M	M	1.3	3	1	F
Rosa x Morden Blush	Morden Blush Rose	M	M	0.8	3	0.8	F
Rosa x Morden Centennial	Morden Centennial Rose	M	M	1.5	2	1.3	F
Rosa x Morden Ruby	Morden Ruby Rose	M	M	1	2	1	F
Rosa x Winnipeg Parks	Winnipeg Parks Rose	M	M	0.6	2	0.6	F
Rosa rubrifolia	Redleaf Rose	M/H	M	1.2	3	1.2	F
Rosa woodsii	Woods Rose	M/H	L	1	2	1	N
Rubus	Fall gold Raspberry	M/L	M	1.5	3	1.5	F
Rubus	Red River Raspberry	M/L	M	1.5	3	1.5	F
Salix bebbiana	Beaked Willow	M	M/L	2	2	3	N
Salix brachycarpa	Blue Fox Willow	M	M/L	1	2-3	1	F
Salix discolor	Native Pussy Willow	M/L	M/H	2	2-3	2	N
Salix exigua/ interior	Sandbar/ Coyote Willow	M/L	M/H	2	2-3	3	N
Salix lutea	Yellow Twig Willow	M/L	M/H	2	2-3	3	N
Salix x marquette	Marquette Pussy Willow	M/L	M/H	2	2-3	2.5	F
Salix purpurea 'nana'	Dwarf Arctic Willow	M/L	M/H	1	2	1	F
Salix salicola 'Polar Bear'	Polar Bear Willow	M/L	M/H	2	2	2	F
Sambucus canadensis 'Aurea'	Golden Elder	M	H-L	3	2	3	F
Sambucus nigra 'Eva'	Black Lace Elder	M	M/H	2.5	2-3	3	F
Sambucus nigra 'Gerda'	Black Beauty Elder	M	M/H	4	2-3	3	F
Sambucus nigra 'Guincho Purple'	Guincho Purple Elder	M	M/H	2.5	2-3	3	F
Sambucus racemosa	Red-berried Elder	M	M/H	4	3	3	N
Shepherdia argentea	Silver Buffaloberry	H	L	3	2	4	N
Shepherdia canadensis	Russet Buffaloberry	M/H	M	2	2	2	N
Sorbaria sorbifolia	False Spirea	M/H	L	2	2	2	F
Sorbus decora	Showy Mountain Ash (shrub)	L	M/L	4	3	5	F
Spiraea x arguta	Garland Spirea Spirea	M/H	M/L	1	2-3	1	F
Spiraea x bumalda	Anthony Waterer Spirea	M/H	M/H	1	3	0.8	F
Spiraea x bumalda 'Froebelii'	Froebelii Spirea	M/H	M/H	1	2-3	1	F
Spirea x bumalda 'Goldflame'	Goldflame Spirea	M/H	M/H	1	3	0.8	F
Spirea japonica 'Little Princess'	Little Princess Spirea	M/H	M/H	1	2-3	0.8	F
Spirea japonica' Walbuna'	Magic Carpet Spirea	M/H	M/H	0.5	2-3	0.3	F
Spirea japonica 'Goldmound'	Goldmound Spirea	M/H	M/H	1	2-3	0.8	F
Spirea japonica 'Shirobana'	Shirobana Spirea	M/H	M/H	1	2-3	0.8	F
Spiraea nipponica 'Snowmound'	Snowmound Spirea	M/H	M/H	1	2	1	F
Spiraea trilobata	Three-lobed Spirea	M/H	M/H	1	2	1	F

Scientific Name	Common Name	Saline Tolerance **H - High M - Medium L - Low**	Moisture Need **H - High M-Medium L - Low**	Spread (m)	Zone	Height (m)	Class
Spirea x vanhouttei	Bridal Wreath Spirea	H	M/H	2	2-3	2	F
Symphoricarpos albus	Snowberry	M	L	1	2	1.2	N
Symphoricarpos occidentalis	Buckbrush	M	L	1	1	1.2	N
Syringa x hyacinthiflora	Hyacinth-Flowered Lilac	H	M	2.5	2	2.5	FI
Syringa x hyacinthiflora 'Pocahontas'	Pocahontas Lilac	H	M	2	2	2.5	FI
Syringa meyeri 'Palibin'	Dwarf Korean Lilac	H	M/L	1.5	3	1	FI
Syringa patula	Miss Kim Lilac	H	M/L	1	2	1.5	FI
Syringa x prestoniae 'Donald Wyman'	Donald Wyman Pres. Lilac	H	M/L	2	2	3	FI
Syringa x prestoniae	James McFarlane Lilac	H	M/L	2	2	3	FI
Syringa x prestoniae 'Miss Canada'	Miss Canada Lilac	H	L	2	2	2	FI
Syringa x prestoniae 'Minuet'	Minuet Preston Lilac	H	L	2	2	2	FI
Syringa villosa	Late Lilac	H	M/L	2.5	2	3	FI
Syringa vulgaris	Common Lilac	H	M/L	2	2	2.5	FI
Syringa vulgaris 'Krasavitsa Moskovy'	Beauty of Moscow Lilac	H	M/L	3	2	2.5	FI
Syringa vulgaris 'Belle de Nancy'	Belle de Nancy French Lilac	H	M/L	2	2	2.5	FI
Syringa vulgaris 'Charles Joly'	Charles Joly Lilac	H	M/L	2	2	2.5	FI
Syringa vulgaris 'Congo'	Congo Lilac	H	M/L	2	2	2.5	FI
Syringa vulgaris 'Ludwig Spaeth'	Ludwig Spaeth Lilac	H	M/L	2	2	2.5	FI
Syringa vulgaris 'Mme Lemoine'	Mme Lemoine Lilac	H	M/L	2	2	2.5	FI
Syringa vulgaris 'President Grevy'	President Grevy Lilac	H	M/L	2	2	3	FI
Syringa vulgaris 'Sensation'	Sensation Lilac	H	M/L	2	2	3	FI
Viburnum dentatum	Arrowwood	M/H	M/H	2.5	3	3	F
Viburnum lantana	Wayfaring Tree	M	L	3	3	3	F
Viburnum lentago	Nannyberry	M	L	2.5	3	4	F
Viburnum opulus	European Cranberry	M/L	M/H	3	3	3	N
Viburnum opulus 'roseum'	Snowball Viburnum	M/L	M/H	3	3	4	F
Viburnum opulus 'Nanum'	Dwarf European Cranberry	M/L	M/H	0.6	3	0.6	F
Viburnum trilobum	Highbush Cranberry	M/H	M/H	2.5	2	3	N
Viburnum trilobum 'Compactum'	Compact Cranberry	M/H	M/H	1.5	2	1.5	F
Viburnum trilobum 'Wentworth	Highbush Cranberry	M/H	M/H	2.5	3	2.5	F
Vines							
Clematis sp.	Clematis	M	M/H	1	2-3	3	FI
Humulus lupulus	Common Hops	H	M/H	1	2	10	FI
Humulus lupulus 'Aurea'	Golden Hops	H	M/H	1	2	10	FI
Lonicera x brownii 'Dropmore	Dropmore Scarlet	M	M/H	1	3	6	F

Scientific Name	Common Name	Saline Tolerance **H - High M - Medium L - Low**	Moisture Need **H - High M-Medium L - Low**	Spread (m)	Zone	Height (m)	Class
Scarlet'	Honeysuckle						
Lonicera x brownii 'Mandarin	Mandarin Honeysuckle	M	M/H	1	3	6	F
Parthenocissus quinquefolia	Virginia Creeper	H	M/L	1	2	10	F
P. quinquefolia engelmanii	Clinging Virginia Creeper	H	M/L	1	2	10	FI
Vitis riparia 'Beta'	Grape	M	M/H	1	3	6	F
Vitis riparia 'Valiant Royalty'	Grape	M	M/H	1	3	6	F

F: Foreign Species. This plant has been introduced from another region or is an altered nursery variety.

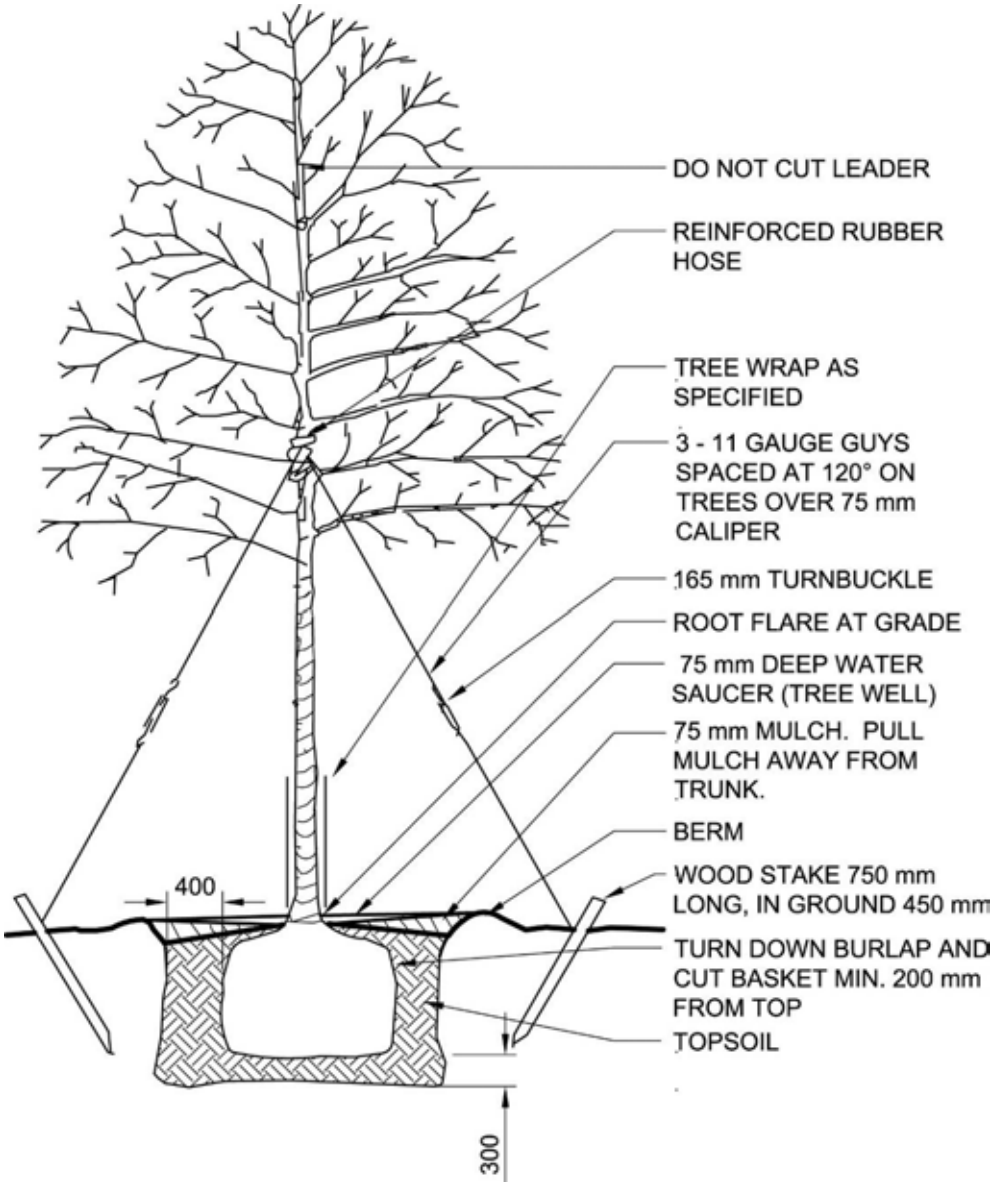
N: Native Species. This plant is native to the region.

I: Invasive Species. This plant is potentially invasive and should not be planted near natural areas.

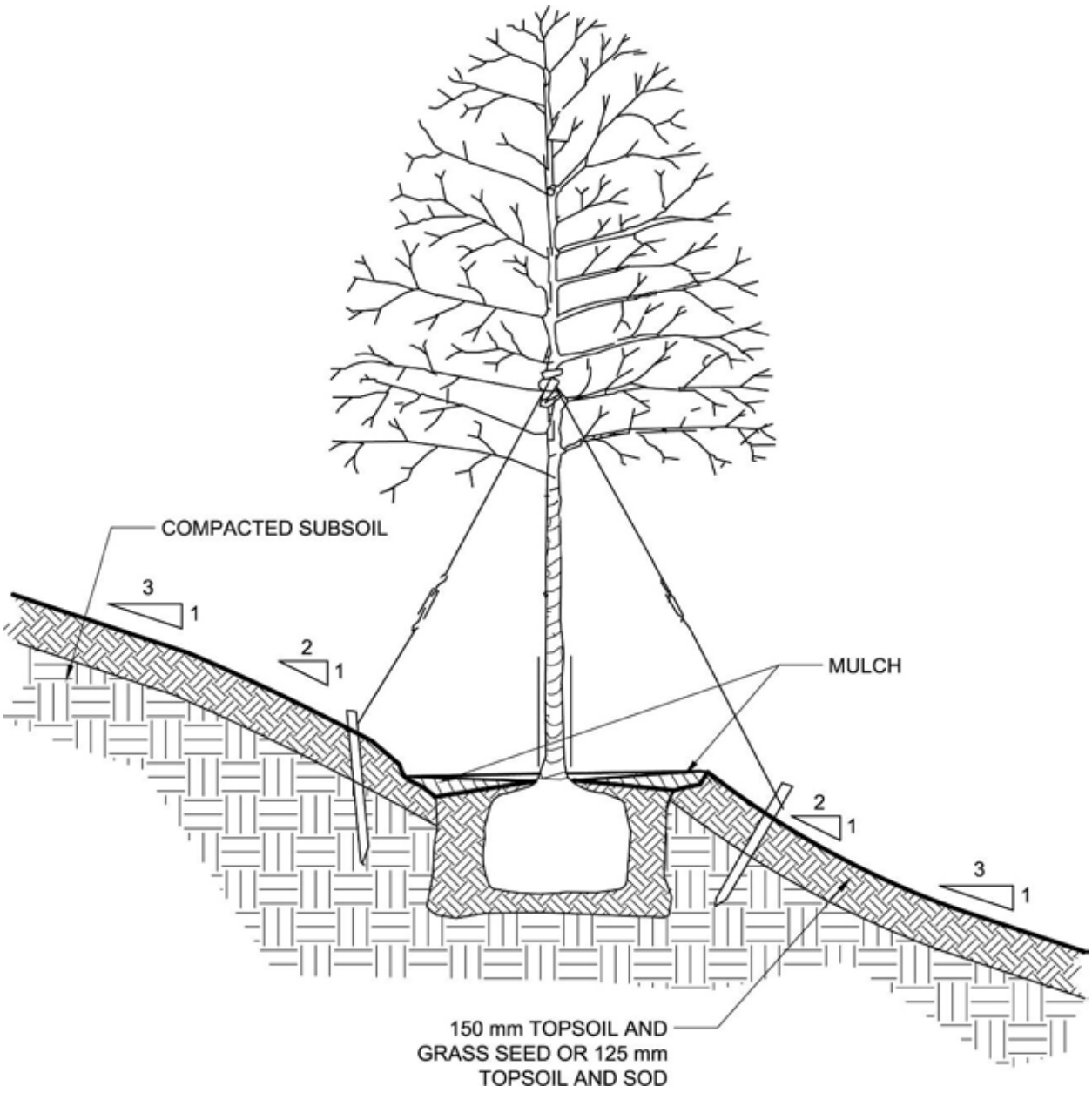
D: Disease Affected Species. As of 2010 these plants are being seriously affected by disease and should not be planted until disease is controllable.

A3 TYPICAL PLANTING DETAILS

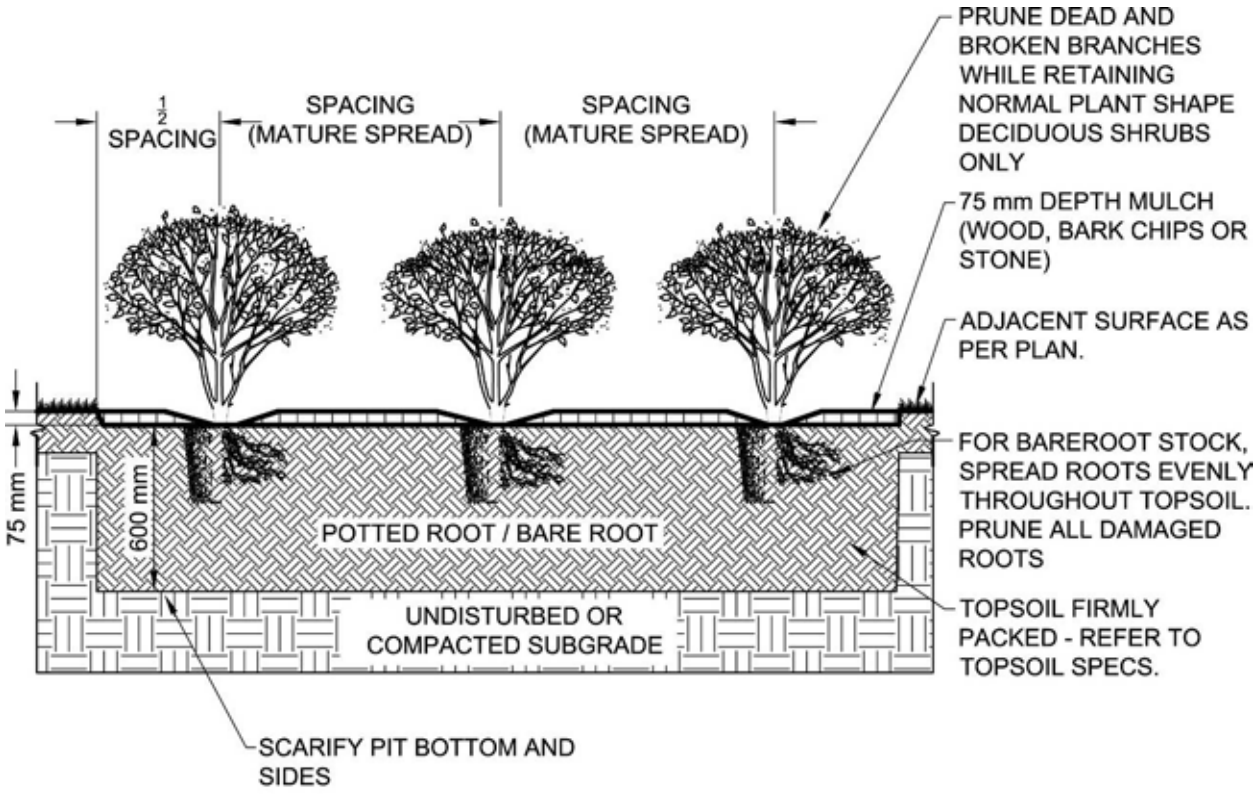
The following are generic details of how trees and shrubs can be planted. The details would be typical of most situations using plants in screens but individual circumstances may vary.



Typical Tree Planting Detail



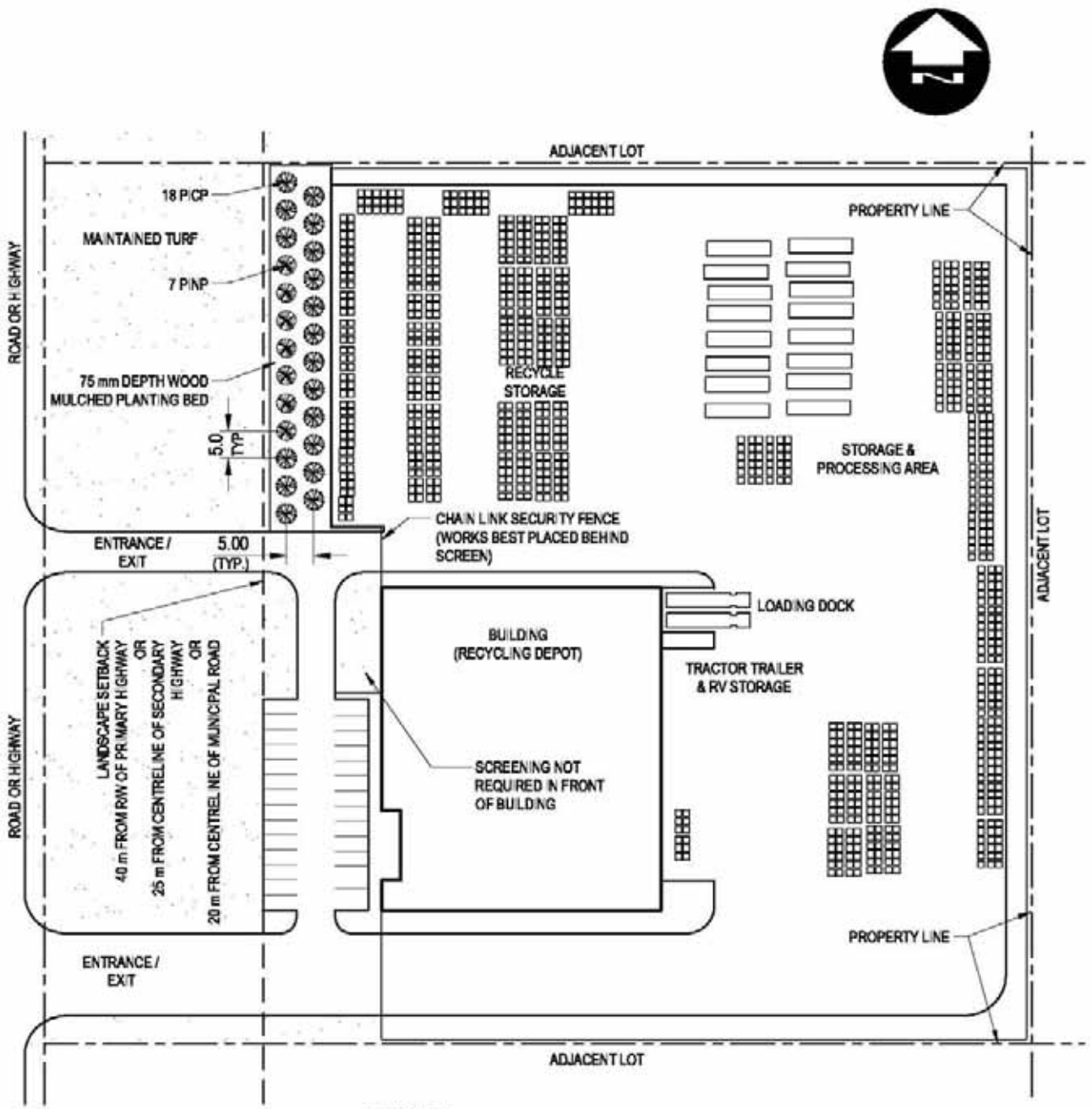
Tree planting with Berm Detail



Typical Shrub Bed Planting Detail

A4 SAMPLE SCREENING PLANS

SAMPLE SCREENING PLAN - FULL

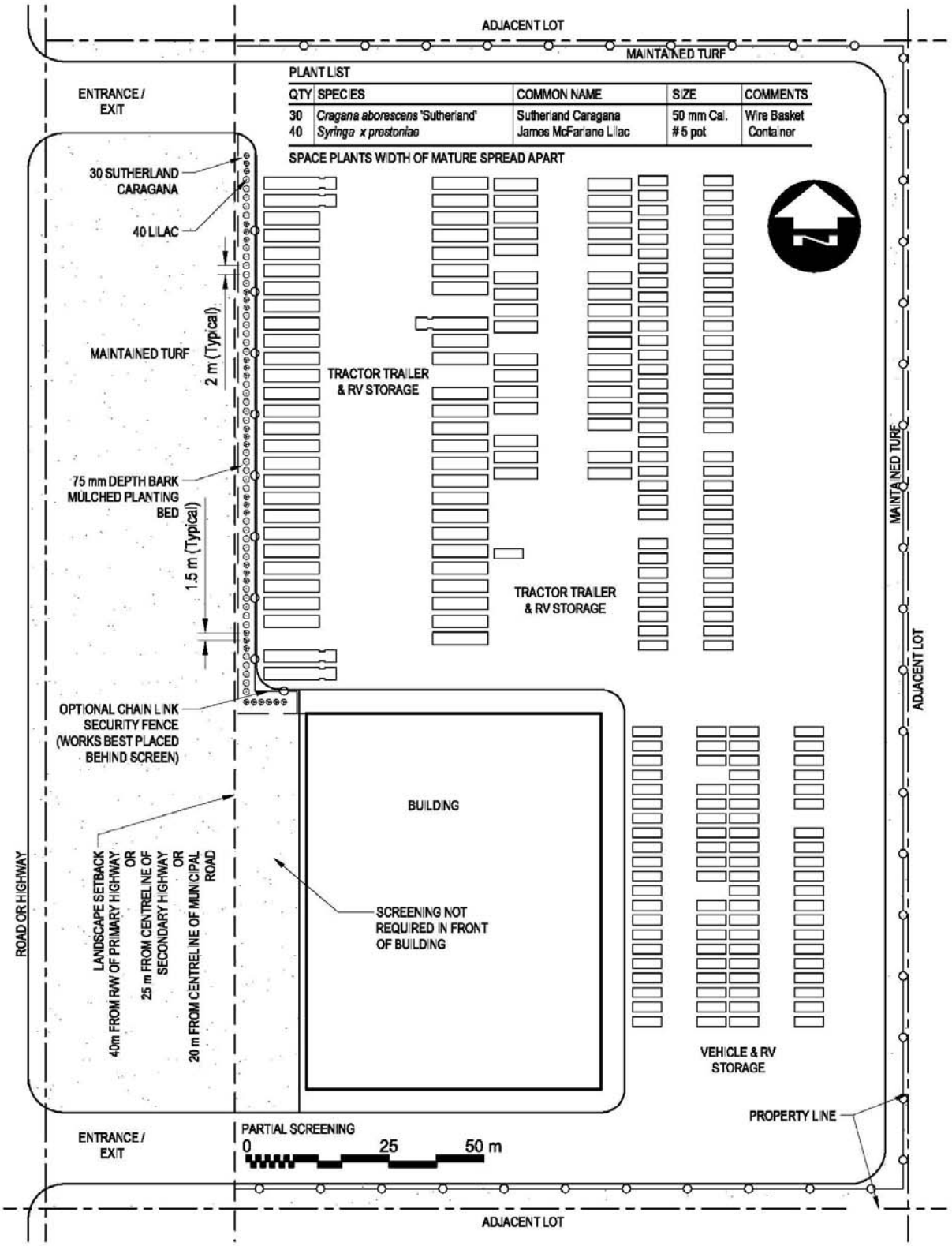


PLANT LIST

QTY	SYMBOL	SPECIES	COMMON NAME	SIZE	COMMENTS
18	P/CP	*Picea pungens*	Colorado Spruce	2.5 m Ht.	B & B
7	P/NP	*Pinus sylvestris*	Scott's Pine	2.5 m Ht.	B & B

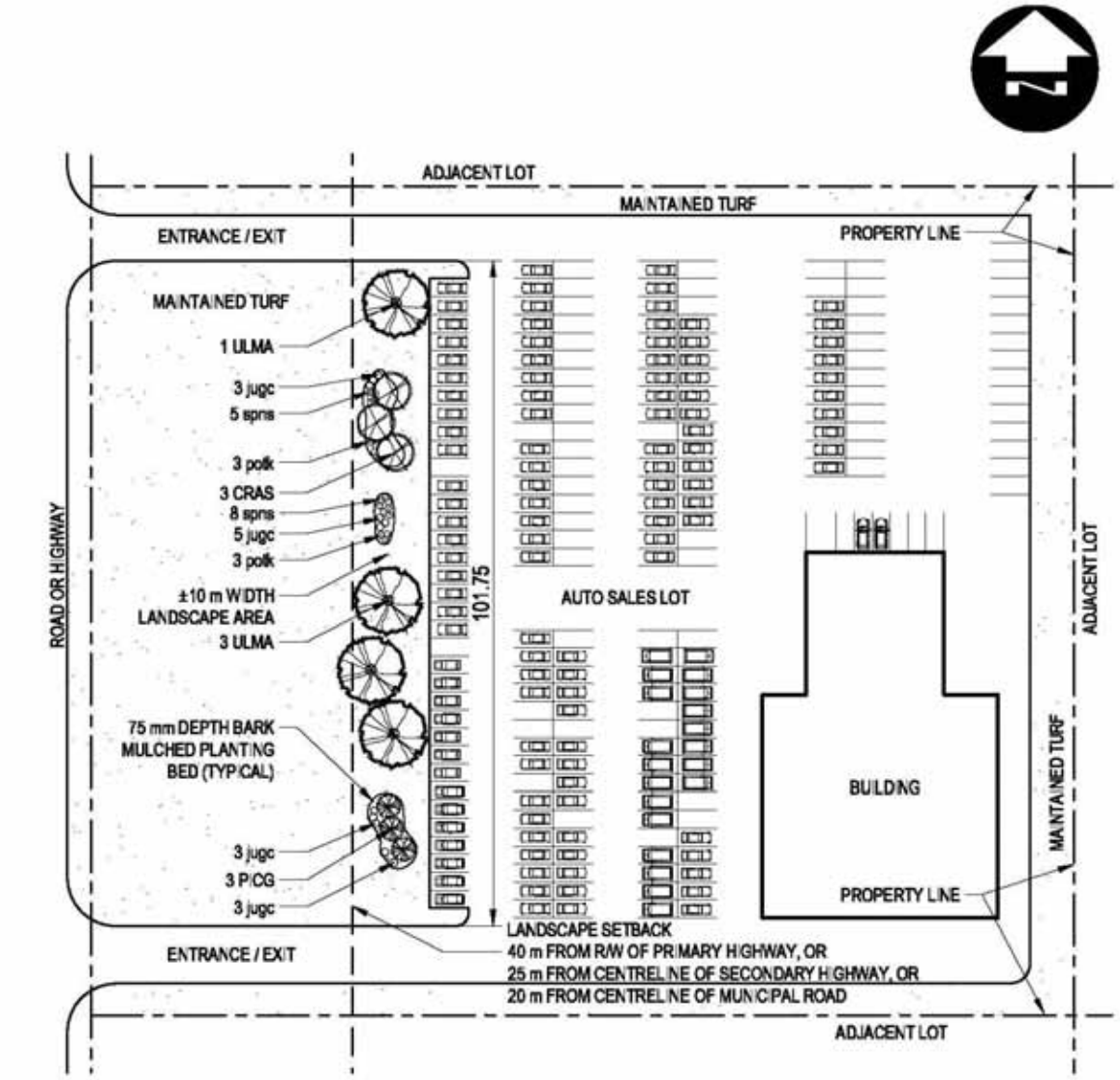
A4 SAMPLE SCREENING PLANS (cont.)

SAMPLE SCREENING PLAN - PARTIAL



A4 SAMPLE SCREENING PLANS (cont.)

SAMPLE SCREENING PLAN - BUFFER



BUFFER SCREENING

0 25 50 m

PLANT LIST

QTY	SYMBOL	SPECIES	COMMON NAME	SIZE	COMMENTS
3	CRAS	*Crataegus succulenta*	Fleshy Hawthorne	50 mm Cal.	Wire Basket
3	PICG	*Picea glauca*	White Spruce	2.5 m Ht.	B & B
4	ULMA	*Ulmus americana*	American Elm	50 mm Cal.	Wire Basket
SHRUBS					
12	jugc	*Juniperus horizontalis* 'Gold Coast'	Gold Coast Juniper	# 2 pot	Container
6	potk	*Potentilla fruticosa* 'Katherine Dykes'	Katherine Dykes Potentilla	# 2 pot	Container
13	spns	*Spirea nipponica* 'Snowmound'	Snowmound Spirea	# 2 pot	Container

100 m X (3 SMALL SHRUBS + 1 TREE / 10 m) = 30 SHRUBS + 10 TREES
33% OF PLANTS ARE CONIFEROUS (EVERGREEN)

A5 WARNING: UTILITY AND PIPELINE LOCATION

As with any activity that requires excavation, it is of paramount importance that you call Alberta 1Call at least 2 business days prior to commencing work on any screening installation. It's easy and there is no charge.

You will need to have the following information ready:

- your dig area information (address or legal land description, whether you will be digging on public or private property, which portion of the site you will be digging on etc.)
- the type of work you are doing and
- the date you require locates to be completed by

CALL BEFORE YOU DIG!

Alberta 1 Call 1-800-242-3477 - Field location service calls
Alternatively, visit their website at: http://www.alberta1call.com/