TREES, SHRUBS and GROUNDCOVERS
II. TREES, SHRUBS and GROUNDCOVERS

1. Development Guidelines

1. Tree Planting Quantities
   The Developer, at its sole cost and expense shall:

   a. plant all trees within the Development Area in conformity with the Tree Planting Guidelines and the Urban Forest Management Policy using the one tree per two lot formula and giving first priority to the planting of trees on public lands, and

   b. plant all trees on public land within the Development Area in conformity with Park Specifications, the Tree Planting Guidelines and the Urban Forest Management Policy.

2. Setback/Spacing Guidelines

   The edge of beds or clusters are to be located 2.5 m away from each other and other vertical elements.

   The following table shows the set back and spacing guidelines for all tree plantings in parks, public utility lots, RoW and storm-water dry ponds:

<table>
<thead>
<tr>
<th>A. Setback Situation</th>
<th>Poplar and Willow Trees and Shrubs</th>
<th>Other Deciduous Trees</th>
<th>Coniferous Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical Elements and Hard Surfaces</td>
<td>5m</td>
<td>2m</td>
<td>½ maximum spread</td>
</tr>
<tr>
<td>Private Property</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• chain link fence</td>
<td>10m</td>
<td>2m</td>
<td>½ maximum spread</td>
</tr>
<tr>
<td>• post &amp; cable fence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• wood screening fence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport Fields</td>
<td>10m</td>
<td>½ maximum spread from 3m buffer</td>
<td>½ maximum spread from 3m buffer</td>
</tr>
<tr>
<td>B. Tree Spacing</td>
<td>½ maximum spread or 5m (whichever is less)</td>
<td>½ maximum spread</td>
<td></td>
</tr>
</tbody>
</table>

   NOTES:

   a. Poplar trees
      i. all poplars except for trembling aspen and Swedish Columnar aspen.
      ii. the minimum set backs for poplars may be reviewed upon request.
   b. If other deciduous trees and coniferous trees are less than 3.5m from vertical elements and hard surfaces or private property lines the trees must be placed in mulched beds.
   c. Maximum tree spread as per Alberta Horticultural Guide.
   d. No more than 50% of any one species planted in a park will be poplar as per the Poplar Tree Policy.
NOTE: Deciduous trees that are 100mm caliper or larger and coniferous trees that are 4.0m high or taller will require a warranty and a five (5) year maintenance period. The five (5) year maintenance period is calculated from the date of issuance of CCC.

3. Line Assignment (i.e. Setback) Requirements

a. For setback requirements of trees planted along roadways see “Design Guidelines for Subdivision Servicing” available from The City of Calgary Roads. “Regional Pathways on Residential Boulevards”. Also see Park’s Detail Sheet No.37b.

b. The following table shows setback requirements for trees planted adjacent to utilities.

<table>
<thead>
<tr>
<th>UTILITIES</th>
<th>POPLAR</th>
<th>DECUIDUOUS</th>
<th>CONIFEROUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEEP</td>
<td>SERVICES</td>
<td>MAINS</td>
<td>SERVICES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parallel to</td>
<td>MAINS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tree line</td>
<td>tree line</td>
</tr>
<tr>
<td>Sanitary</td>
<td>3.0m</td>
<td>4.0m</td>
<td>0m** 2.5m</td>
</tr>
<tr>
<td>Storm (&lt;4.5m deep)</td>
<td>3.0m</td>
<td>4.0m</td>
<td>0m** 2.5m</td>
</tr>
<tr>
<td>Water</td>
<td>3.0m</td>
<td>4.0m</td>
<td>0m** 2.5m</td>
</tr>
<tr>
<td>Hydrants</td>
<td>3.0m</td>
<td>4.0m</td>
<td>N/A 2.5m</td>
</tr>
</tbody>
</table>

SHALLOW

<table>
<thead>
<tr>
<th>UTILITIES</th>
<th>POPLAR</th>
<th>DECUIDUOUS</th>
<th>CONIFEROUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCO TELUS</td>
<td>2.0m*</td>
<td>2.0m*</td>
<td>2.0m*</td>
</tr>
<tr>
<td></td>
<td>2.0m*</td>
<td>2.0m*</td>
<td>2.0m*</td>
</tr>
<tr>
<td>CTV</td>
<td>2.0m*</td>
<td>1.5m</td>
<td>2.0m*</td>
</tr>
<tr>
<td></td>
<td>2.0m*</td>
<td>1.5m</td>
<td>2.0m*</td>
</tr>
<tr>
<td>ENMAX</td>
<td>2.0m*</td>
<td>1.5m</td>
<td>2.0m*</td>
</tr>
<tr>
<td></td>
<td>2.0m*</td>
<td>1.5m</td>
<td>2.0m*</td>
</tr>
</tbody>
</table>

ENMAX

<table>
<thead>
<tr>
<th>UTILITIES</th>
<th>POPLAR</th>
<th>DECUIDUOUS</th>
<th>CONIFEROUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead (to outside conductor)</td>
<td>9.0m</td>
<td>7.0m - 9.0m</td>
<td>7.0m - 9.0m</td>
</tr>
<tr>
<td>Transformers (within Utility Rights-of-Way) N/A (Tree planting not permitted within Utility Rights-of-Way) N/A (Tree planting not permitted within Utility Rights-of-Way)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street Light Poles</td>
<td>5.0m</td>
<td>4.0m - 5.0m</td>
<td>Min. 4.0m</td>
</tr>
</tbody>
</table>

NOTES:

* A 3.0m separation may be required at the discretion of the utilities.

** Pipe joints are not permitted on water or sewer services located under medians.

*** Trees on residential (15.0m RoW) boulevards, with no sidewalks, can be planted 1.0m from driveways. Driveway crossings are to be aligned, where possible, to allow space for tree planting.
4. Traffic Islands

The following are setback requirements for trees and shrubs planted on traffic islands:

i. All trees and shrubs must be a minimum of 7.5m from the bullnose or back of walk extended through the island, whichever is greater, adjacent to primary streets.

ii. All trees and shrubs must be a minimum of 4.5m from 'any' bullnose adjacent to primary streets on irregular shaped islands.

iii. All trees and shrubs must be a minimum of 3.0m from the bullnose inside the cul-de-sac.

iv. All shrubs and deciduous trees (excluding poplars) must be planted 1.5m from back of curb.

v. All Poplar trees, except for Trembling Aspen and Swedish Columnar Aspen, must be planted 6.0m from back of curb, except when the director of Parks and director of Roads give conditional approval.

vi. All coniferous trees must be planted 3.0m from back of curb.

NOTE: To obtain line assignment and construction approvals for plantings, please; submit seven (7) sets of folded drawings to Parks Planning and Development Services for new subdivisions, or seven (7) sets of folded drawings to Infrastructure Information Services, Access Solutions for non-standard tree planting proposals existing areas and where utility lines are involved.

5. Play Structure Plantings

a. Shrub beds should be set back from areas designed for play structures as follows:

   i. 3.5m from the outside edge of the play area; or
   ii. The width of a local pathway where the pathway abuts a play area.
   iii. Type and spacing of plantings shall ensure clear sight-lines into the play structure area.

6. Tree Protection Guidelines

The Street Bylaw (20M88) and the Tree Protection Bylaw (23M2002) contain clauses intended to protect trees growing on Public Land.

As part of the Tree Protection Bylaw, a Tree Protection Plan will be required when a development or construction activity or a disturbance occurring on The City boulevard is within 6 meters of a boulevard Tree. The intent of a Protection Plan is to maintain Public Trees as long-term
assets to the community and to the City in general. Tree protection requires forethought and planning well before construction activities commence. Tree Protection Plans and protection measures are only required on City of Calgary owned land.

Permits issued by The City of Calgary Roads are required if construction activities use or cross any portion of the road Right-of-Way (including boulevards). Permits are obtained at Traffic Assessment 2808 Spiller Rd SE. For further permit information call 403-268-3658 or consult The City of Calgary Roads’ website at www.calgary.ca/roads and follow the “permit" link.

A condition of the issuance of permits by The City of Calgary Roads may be the requirement for a Tree Protection Plan when construction activities are within six (6) metres of a tree on Public land. The intent of a Tree Protection Plan is to help ensure that The City’s Urban Forestry assets remain long term assets to the community. Requirements and specifications for a Tree Protection Plan may be obtained by telephoning Urban Forestry, call 3-1-1 or consult The City of Calgary Parks’ web site at www.calgary.ca/parks, click on Parks Management, Trees

a. Tree Protection Plan elements, measures and conditions are only required on The City of Calgary owned land. However, applicants are encouraged to apply tree protection measures on private land. Effective tree protection places limits on damage and disturbance to tree branches, trucks, and root systems.

b. If plans call for Public Trees to be removed, an application for the removal of Public Trees can be found online at www.calgary.ca/parks Public Tree Removals will not be approved without an approved Tree Protection Plan. Completed Tree Protection Plans referencing Development Permit number, site address and billing information are to be submitted for approval.

Via email to: Tree.Protection@calgary.ca
Or by mail to:

Tree Protection
City of Calgary Parks Urban Forestry
P.O. Box 2100, Stn M #75
Calgary, AB T2P2M5
Or by fax to:
403-537-7505

c. A tree protection plan is a drawing and/or report, installation of physical barriers or other materials and specification of construction techniques. A Tree Protection Report is to:

• Inventory and locate all trees and shrubs on The City of Calgary owned land within six (6) metres of all property lines of the site
under redevelopment.

- Identify species, diameter at 1.4m off the ground, height, condition and existing flaws or damage, significant pests and diseases.
- Identify whether tree(s) or shrubs are to be moved, removed or protected.
- Identify whether tree pruning is required to provide clearance.
- Identify a Tree Protection Zone in which activities are restricted. Minimally, this zone is limited to The City of Calgary owned land, four (4) metres distance from the trunk and to a depth of 1.2m. The canopy of the tree is protected to the dripline.
- Locate staging, hoarding, and storage areas of construction.
- Locate limits of land disturbance, excavation, trenching and grade changes, routing of utilities, and irrigation systems, sidewalks, driveways, construction access roads, changes to street lighting, fire hydrants, utilities boxes.
- Identify construction methods and equipment to be used on The City of Calgary owned lands.
- Identify measures to ensure tree branches, trunk and roots are protected during construction. Measures may include effective barrier fencing, branch and or root pruning, protective mulch, supplementary water, soil aeration, informational signage.
- Identify pre and post construction tree care measures.
- Provide contact information for a designated individual that will be responsible for ensuring all work adheres to the approved Tree Protection Plan.

d. The City of Calgary Parks prohibits:

- Work on The City of Calgary owned land within six (6) metres of a Public Tree without a Tree Protection Plan.
- Construction activities requiring use of or on the road right of way without a permit issued by Calgary Roads, Traffic Assessment.
- Unauthorized soil disturbance on The City of Calgary owned land within six (6) metres of a City Tree.
- Unauthorized deviation from a Tree Protection Plan approved by The City of Calgary Parks.
- Unauthorized entry into a Tree Protection Zone or interference with tree protection barriers.
- The attachment of objects to the trunk or branches.
- The use of equipment for which there is insufficient canopy clearance.

e. The City of Calgary Parks requires:

- Work on The City of Calgary owned lands to be performed by The City of Calgary forces or by Contractors that have entered into an indemnity agreement with The City of Calgary.
• Compensation for trees removed or damaged as per appraisal methodologies accepted by the International Society of Arboriculture and as determined to be fair and reasonable by The City of Calgary Parks, Urban Forestry Coordinator.

f. Failure to comply with public tree protection measures may result in fines ranging from $100 to $10,000, in accordance with The City of Calgary’s Tree Protection Bylaw 23M2002. Other compliance measures may be required by a duly appointed Enforcement Officer.

g. The applicant will be required to provide compensation to The City of Calgary for any Public Trees that are removed or damaged. Individual Public Trees can have values ranging in the thousands of dollars depending on size and species. You may wish to consider this cost during the design and development phase of your project. Applicants that are unfamiliar with tree protection or tree appraisal are advised to consult an arborist. Arborists are found in the telephone directory under “Tree Service”.

h. The applicant shall provide compensation of The City for trees removed as per the approved Tree Protection Plan. Payment to be made to:

The City of Calgary Parks  
c/o Urban Forestry Coordinator  
Location #75, P.O. Box 2100 Station M  
Calgary, AB T2P 2M5

All trees and landscaping on public land shall be established and receive construction inspections in accordance with the current edition of the Park Development & Operations ‘Development Guidelines and Standard Specifications Landscape Construction’. Contact the Park Development Inspector at North 804-9397, South 804-9417, or Central 620-3216.

7. Tree Replacement/Compensation Guidelines

a. If anyone receives approval from The City of Calgary Parks to remove trees from public lands and they plant replacement trees, they may apply for a credit of $380.00 per tree planted on public land. The replacement tree must be 60-85 mm and over and above any requirements under the Land Use Bylaw, or any other City requirement. Application for reimbursement may be made after the issuance of the FAC. Application for reimbursement should be directed to The City of Calgary Parks, Urban Forestry section call 3-1-1.

b. If anyone receives approval from The City of Calgary Parks to remove trees from public lands and there are plans for replacement, they shall pay to The City the difference (if applicable) between the cost of the
replacements and the value of the trees to be removed as determined by the Urban Forestry Specialist, call 3-1-1, using the International Society of Arboriculture’s formula.

c. If anyone, or other City business units, remove or damage trees on public lands, without approval of The City of Calgary Parks, while performing a City public works project, they shall replace the trees in accordance with the two trees for every one tree removed or destroyed formula.

d. If anyone removes or damages Native Vegetation in any of the above three scenarios, the replacement of the vegetation will be evaluated on a site-by-site basis to ensure that the integrity of the site’s vegetation is reasonably maintained.

8. Shrub Planting Guidelines

a. Parks

Up to 1% of total area of park. Plantings to be approved on a site by site basis.

b. Boulevards

No shrub planting permitted except at interchanges where gradients exceed 3H: 1V.

*NOTE:* Special projects to be looked upon on a site by site basis for larger boulevards as long as the shrubs:

i. are utilitarian;

ii. do not cause excess maintenance requirements;

iii. do not restrict the visibility between pedestrians and vehicles;

iv. are not in conflict with utilities; and

v. are of a suitable species and growth habit.

c. Medians & Traffic Islands

No shrub planting permitted.

*NOTE:* Special projects to be looked upon on a site by site basis.

d. Utility Easements & Right-of-Ways

No shrub planting permitted unless otherwise approved by Infrastructure Information Services, Access Solutions.
2. Standard Specifications

1. Description/Quality Assurance

a. This section specifies the supply and planting of trees, shrubs and ground covers.

b. Planting work is to be carried out by experienced personnel under the direction of a skilled horticultural foreman.

2. Product Delivery, Storage and Handling

a. Supply manufactured items such as fertilizer, bone meal, mulch, etc. in standard containers, clearly indicating contents, weight, component analysis, and the name of the manufacturer. Include WHMIS codes as required.

b. Store manufactured materials, subject to deterioration, in a weatherproof place on site and in such a manner that their effectiveness is not impaired.

c. Provide root balls of the following minimum sizes to meet the corresponding tree size:

i. Hand Planting

<table>
<thead>
<tr>
<th>Deciduous Trees</th>
<th>Root Ball Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caliper</td>
<td></td>
</tr>
<tr>
<td>#40mm (1.5&quot;)</td>
<td>600mm (2'0&quot;)</td>
</tr>
</tbody>
</table>

Coniferous Trees

<table>
<thead>
<tr>
<th>Height</th>
<th>Root Ball Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0m (3.28') -</td>
<td>600mm (2'.0&quot;)</td>
</tr>
<tr>
<td>1.5m (4.92')</td>
<td></td>
</tr>
</tbody>
</table>

Root ball sizes for naturalized plantings will be approved by The City of Calgary Parks on a site-by-site basis.

Provide root ball depth as follows:

<table>
<thead>
<tr>
<th>Root Ball Diameter</th>
<th>Root Ball Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>600mm (2'0&quot;) or less</td>
<td>minimum 450mm</td>
</tr>
</tbody>
</table>

Wrap root balls according to the following schedule:

<table>
<thead>
<tr>
<th>Root Ball Diameter</th>
<th>Wrapping Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 600mm (2'0&quot;)</td>
<td>142g (5oz.) hessian burlap, single wrap</td>
</tr>
</tbody>
</table>

Bare root stock to not exceed 40mm (1.5") caliper. Root Ball diameter will be 300mm (12") for every 25mm (1") caliper.
ii. For trees dug by tree spade (machine method):

Minimum Root Ball Size For Deciduous Trees (CNLA Standard)

<table>
<thead>
<tr>
<th>Caliper</th>
<th>Ball Diameter</th>
<th>Ball Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 mm</td>
<td>60 cm</td>
<td>40 cm</td>
</tr>
<tr>
<td>50-60 mm</td>
<td>70 cm</td>
<td>40 cm</td>
</tr>
<tr>
<td>70 mm</td>
<td>80 cm</td>
<td>50 cm</td>
</tr>
<tr>
<td>80 mm</td>
<td>90 cm</td>
<td>50 cm</td>
</tr>
<tr>
<td>90 mm</td>
<td>90 cm</td>
<td>50 cm</td>
</tr>
<tr>
<td>100 mm</td>
<td>100 cm</td>
<td>50 cm</td>
</tr>
<tr>
<td>125 mm</td>
<td>120 cm</td>
<td>80 cm</td>
</tr>
<tr>
<td>150 mm</td>
<td>150 cm</td>
<td>80 cm</td>
</tr>
<tr>
<td>175 mm</td>
<td>175 cm</td>
<td>80 cm</td>
</tr>
<tr>
<td>200 mm</td>
<td>200 cm</td>
<td>80 cm</td>
</tr>
</tbody>
</table>

- These root ball sizes are considered minimum and will only be used for trees grown under proper nursery conditions (i.e. transplanted or root pruned at least once within previous four years).
- Multi-stem trees will require a root ball at least one size larger.

Minimum Rootball Size For Coniferous Trees (CNLA Standard)

<table>
<thead>
<tr>
<th>Height</th>
<th>Root Ball Size</th>
<th>Height</th>
<th>Root Ball Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 cm</td>
<td>30 cm</td>
<td>200 cm</td>
<td>80 cm</td>
</tr>
<tr>
<td>60 cm</td>
<td>35 cm</td>
<td>225 cm</td>
<td>90 cm</td>
</tr>
<tr>
<td>80 cm</td>
<td>40 cm</td>
<td>250 cm</td>
<td>90 cm</td>
</tr>
<tr>
<td>100 cm</td>
<td>45 cm</td>
<td>275 cm</td>
<td>100 cm</td>
</tr>
<tr>
<td>125 cm</td>
<td>50 cm</td>
<td>300 cm</td>
<td>122 cm</td>
</tr>
<tr>
<td>150 cm</td>
<td>60 cm</td>
<td>350 cm</td>
<td>127 cm</td>
</tr>
<tr>
<td>175 cm</td>
<td>70 cm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- These root ball sizes are considered minimum and will only be used for trees grown under proper nursery conditions (i.e. transplanted or root pruned at least once within previous four years).
- Root ball shall be burlapped and wire basketed. Wire basket shall be laced at the top and of sufficient strength to withstand lifting the tree by the top loops of the basket at a minimum of two points.

d. Cut all roots cleanly when digging plants. Roots should be cut even with the edges of the root ball.

e. Protect plant material from damage and breakage. Protect all parts of plant material from drying out and maintain adequate moisture levels.

f. Ensure that during transport, plant material is adequately protected.
g. Carefully tie in all branches before transporting.

h. Pad all points of contact between plant material, equipment and basket.

i. Heel in with soil or other suitable material and water any plant material that cannot be planted during the current day's operations. All plant material should be planted within 24 hours of delivery to site. The City of Calgary Parks reserves the right to reject any material not installed within this timeframe, weather permitting.

j. Keep all roots and root balls watered prior to planting.

k. Nursery grown deciduous trees that are 100mm caliper or larger and coniferous trees that are 4.0m high or taller will require a warranty and a five (5) year maintenance period. The five (5) year maintenance period is calculated from the date of issuance of CCC.

l. Avoid purchasing material with encircling roots.

m. Root ball sizes for naturalized and natural area plantings will be approved by The City of Calgary Parks on a site-by-site basis.

3. Job Conditions/Substitutions

   a. Proceed with planting operations during suitable weather conditions or at the discretion of The City of Calgary Parks.

   b. Supply and install plant material as specified on the plant list. Substitution with other plant material will be allowed only with the written approval of The City of Calgary Parks.

4. Inspections

   a. The Contractor shall have an approved set of drawings and specifications and an approved line assignment available on site prior to calling The City of Calgary Parks for an inspection.

   b. Make plant material available for inspection at source by The City of Calgary Parks.

   c. Approval of plant material at source will not impair the right of The City of Calgary Parks to inspect plants upon arrival on the site or during the course of construction and to reject plants which have been damaged, or which in any way do not conform to the specifications.

   d. Give timely notice (see Inspections page 34) to The City of Calgary Parks when inspection and acceptance are required. Inspections shall be requested:
i. when holes or wells have been excavated;

ii. when all work is complete.

e. Plant material at CCC and FAC: true to name and type; structurally sound; well branched; healthy and vigorous and free from disease, insect infestations, rodent damage, sun scald, frost cracks, and other untreated abrasions to the bark; and densely foliated with a healthy, well developed root system. Pruning wounds must show vigorous callus growth on all edges and all parts must show live and green cambium tissue when cut. Final inspection of all plant material will be made at the end of the specified guarantee period.

5. Plant Material

a. Trees should comply with the Canadian Nursery Certification Institute’s Phytosanitary Certification Program standards (DPCP) whenever possible. (Currently this is a guideline but will become a mandatory requirement in 2012.)

b. 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.


d. Any plant material not conforming to CNLA standards and specifications and/or not grown according to good nursery practices will be designated as "collected plants".

e. "Collected plants" may only be used when approved in writing by The City of Calgary Parks. “Collected plants” must be of good health and free of pests and diseases.

f. All material must conform to the sizes shown on the plant list. Larger material may be used only when approved by The City of Calgary Parks. Use of larger plants will not increase the contract price.

6. Mulch

1. All the planting beds, vaults, and wells shall be mulched.

2. Materials:

   a. Type: Any wood type is acceptable except that which is chemically treated or is salvaged from construction lumber, building demolition, or shipping waste.
b. Size: Coarsely ground mulch is preferred; otherwise use an even mixture in a range of sizes from 10mm x 10mm x 5mm to 40mm x 60mm x 35mm.

c. Consistency: Material should have no more than 5% by volume of soil, sawdust, peat moss, or needles.

d. The best material is pulled out of piles that have composted for a year.

e. Sanitation: No mulch from diseased or infested plant material is allowed unless it can be shown the material presents no risk to tree health.

f. Substitutions: All non-wood types of mulch require the approval of The City of Calgary Parks. Approval criteria will include: Safety, Aesthetics, Durability, Rate of Decomposition, Ease of Renewal and Replacement, Breakdown products, Resistance to salts and solvents, Recyclability, Permeability, Impact on water retention, soil structure, biology, and how unfavorable impacts will be mitigated.

g. Application: 75mm deep. Keep material 50mm away from trunks and stems to prevent rotting of bark. Any time of year.

7. Preparation

a. Obtain the approval of The City of Calgary Parks for all planting excavations prior to commencing planting operations. Parks Development Inspector approval does not preclude the applicant obtaining his or her approvals as may be required by other City Business Units, Utility providers, or regulators.

b. All necessary permits, approvals and plants must be available on site including but not limited to utility locates, line assignments, street use and excavation permits, and Parks’ approved construction plans.

c. Tree hole excavations exposing utilities including irrigation must be inspected by the utility owner. Utility inspection contacts can be found on Alberta One-Call locate sheet. Inspections of City owned irrigation can be arranged; call 3-1-1.

d. If using a nitrogen fertilizer, it shall be a slow or controlled release product. Synthetic or natural organic fertilizers are preferred.

e. Supply plant material as specified on the plant list or substitutions as approved by The City of Calgary Parks.
f. Dig material, specified "B.R." (bare root) on the plant list, while in a dormant state and with the root system extending a minimum of 300mm (12") diameter per 25mm (1") of tree caliper. Immediately after digging, wrap the roots in wet burlap and keep burlap wet during transport and storage.

g. Provide material, specified "W.B." (wire basketed and burlapped) to Canadian Nursery Landscape Association (CNLA) specifications.  
   NOTE: Section 2.2.c.ii (page 69) for root ball size.

h. Do not use plant material on which the root ball has been cracked or broken preparatory to or during the planting process.

i. Container stock to be Canadian Nursery Landscape Association (CNLA) specifications.

8. Installation

The following specifications are to be referred to with Detail Sheets #22 to 27a.

a. Dig out by tree spade, backhoe or hand shovel, the tree holes and shrub beds and remove excess soil off site.

b. 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. Scarify subgrade to a depth of 75mm under all tree pits and shrub beds.

c. Depth of planting beds are as follows:
   ▪ 450mm for flower beds
   ▪ 600mm for shrub beds

d. Place plant plumb in the centre of the planting pit with a firm base under the root ball. Face the plant to give the best appearance or relationship to adjacent structures. Grafted trees should be planted at root crown depth. The graft shall be above soil grade. Trees are to be planted with root crown at grade or above.

e. Place bare root plants so that the roots lie in a natural position. Container grown trees are to have the root crown exposed from excess potting soil. Encircling roots are to be separated or cut and laid out radially from the root crown.

f. At the time of planting, cut away the strappings and remove the top 1/3 of the wire and burlap. Leave two wire handles intact during the maintenance period. Remove these wire handles to the first wire ring prior to final acceptance.
g. Backfill with topsoil or other material as specified by The City of Calgary Parks and firmly compact the soil to ensure the plant retains its orientation. Ensure no air pockets remain around the roots.

h. Thoroughly water within the same working day of planting trees. Water probing is not acceptable.

i. 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.

9. Maintenance/Pruning/Clean-up

   a. Maintain all plant material from the time of planting until the date of issue of Final Acceptance Certificate.

   b. Maintenance shall include all measures necessary to establish and maintain all plants in a vigorous and healthy growing condition, as specified in Landscape Maintenance, page 169.

   c. At the time of acceptance, all material must be in a healthy, vigorous growing condition. Unmulched 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.

   d. Remove all dead branches. If there is a double leader, shorten one by about ½, back to a live branch that points away from the trees that is about 1/3 the diameter of the leader cut. Prune broken portions of branches back to live lateral. Retain the rest of the spec.

   e. Ensure that all damage to surrounding work is repaired before leaving site.

   f. Each day ensure that all debris is cleaned up and disposed off site and that the project site is left in a tidy, organized condition.

10. Transplanting Existing Trees

    As per Sections .6, .7, .8 and .9 above.

11. Pruning

    The Parks Urban Forest Strategic Plan outlines the acceptable reasons for pruning trees as well as prohibited reasons:
a. Acceptable reasons for tree pruning
   i. Overhead utility clearance
   ii. Public Safety
   iii. Tree health
   iv. Tree structure

b. Prohibited reasons for tree pruning
   i. Mitigation of minor nuisances such as fruit, seeds, fluff, pollen, sticky bud caps, leaves, minor pest infestation, etc.
   ii. Mitigation of landscape damage
   iii. Creation of views and clearance of advertising signs.

c. Tree pruning is to be in accordance with the best practices as published by the International Society of Arboriculture.

d. Branch removal should be limited to necessary clearance pruning for public and electrical safety, the removal of dead, diseased and defective wood to improve tree health and/or structure.

e. Trees are to be pruned and maintained in accordance with Illuminating Engineering Society of North America standards for Roadway Lighting.

f. Public trees interfering with overhead power lines will be pruned or removed as appropriate.