

SOUND URBAN FORESTRY

SUF

Memo



CP&D CITY OF OLYMPIA

07/12/2019 1:05:13 PM

kcarlson

To: Robin and Sidney**From:** Kevin M. McFarland *Kmm***CC:****Date:** 08/16/02**Re:** Corrected Pages (7 & 8)

I have enclosed two corrected pages.

As part of Tree Density Calculations there is a correction to the Minimum Tree Density Required section within the parentheses, the acreage needed to be changed to 4.7.

Furthermore, the Roman Numeral for the Monitoring Section needed to be changed on page 8.

That's it.

Bark & Garden Center, Inc.
Additional Parking and Growing Facilities

III. Tree Density Calculations

The Olympia Tree Protection and Replacement Ordinance requires a minimum tree density of 30 tree units per acre on the Buildable area of each site. If this requirement is not met through tree preservation, then replacement trees will be planted to meet the minimum tree density. The following summary indicates the tree density required and the density proposed for preservation.

Gross Acreage	=	4.8 Acres
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Critical Areas		
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Minimum Tree Density Required (30 units/acre x 4.7 ac)	141 Units
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Retained Tree Units	
Tree Protection Areas (A&B)	126 Units
<u>100' Buffer (Eastside)</u>	<u>89 Units</u>

Total	215 Units
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Excess of Retention Requirement	74 Units
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No tree replacement is required.

IV. Phasing

It is recommended that all trees not suitable for retention near development be removed during clearing for lots, roads and utilities. The trees to be preserved will be marked and all other trees will be removed during the clearing process.

Directional Felling:

Directional felling shall be used to limit damage to trees to be preserved.

After tree removal prior to clearing and grading the protection fence shall be installed.

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V. Tree Protection Plan

Tree protection will be needed for the trees identified for retention.

Critical Root Zones:

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A protective fence shall be installed as indicated on the site, grading and erosion control plans. Please reference Attachment 1. The Construction Notes describing Tree Protection Standards for tree protection and maintenance measures as attached.

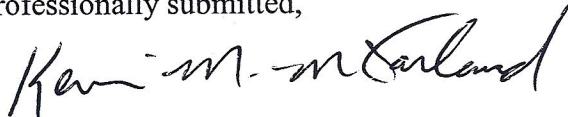
It is recommended that the protective fencing be installed after logging. The fence should be installed prior to the start of grubbing and grading. The contractor responsible for asphalt removal will recognize the critical root zone areas.

VI. Monitoring

Site clearing should be monitored by a Sound Urban Forestry representative to insure that the tree felling, log extraction, clearing and other protection activities are within standards and expectations.

Hazard tree inspections should be conducted after completed construction for the retained trees and trees within the 100' buffer. Furthermore, annual inspections and inspections after major storm events should be conducted by a certified arborist or professional forester.

Professionally submitted,



Kevin M. McFarland, SUF
Consulting Forester/Certified Arborist



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SOUND URBAN FORESTRY

Appraisals, Planning, Urban Landscape Design and Management

Bark & Garden Center, Inc.

Additional Parking and Growing Facilities

Mud Bay Road

Olympia, WA 98502

Tree Protection and Replacement Plan

Level V

Prepared for: Robin Rexius / Sidney Clausen

3334 Mud Bay Road

Olympia, WA 98502

Prepared by: Kevin M. McFarland, SUF

Consulting Forester/Certified Arborist

Date: 8/15/02

Introduction

I conducted an evaluation of the 4.70 acre site of the proposed Bark & Garden Center, Inc. Additional Parking and Growing Facilities development. The site is located on the east side of Bark & Garden Center, 3334 Mud Bay Rd, Olympia, Washington. The purpose of the evaluation was to determine the condition of the native trees on site and their potential for retention within identified areas. Furthermore, prepare a Level V Tree Protection and Replacement Plan specified by the Olympia Tree Protection and Replacement Ordinance (OMC 16.60) pursuant to the City of Olympia Development Guidelines and Public Works Standards.

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Additional Parking and Growing Facilities

I. Site Description

The site is legally described as parcel: 12817140800 within the City of Olympia, Thurston County, Washington (Appendix 1).

The 4.80 acre site is relatively flat. There is one soil type found at the site. The following summary information has been taken from the Thurston County Soil Survey, 1990.

Alderwood gravelly sandy loam with a moderately rapid permeability and very slow in the pan. Effective rooting depth is 20 to 40 inches.

II. Trees & Associated Vegetation Inventory

The site contains a mix of early successional vegetation and scattered stands of Douglas Fir with Big Leaf Maple as co-dominants. (Site Plan).

The site is predominantly forested with the exception to the center of the property. The center of the site is open with groups of successional tree and shrub species established. The open area is approximately 1.5 acres appears to have been cleared for a homestead or pasture in the past. It is my opinion, the site has experienced selective harvesting in the past. The areas proposed for tree protection zones contain healthy and stable Douglas-fir trees with a mix of Big Leaf Maple and associated understory plant species.

The site contains pioneer tree species or successional vegetation as well as the fir. There exists Black Hawthorn, Cascara, Black Cottonwood, Red alder, Scotch Broom, Blackberry, Hazel and Willow.

The dominant tree species are Douglas-fir and Big Leaf maple. The trees are approximately 10 - 80 years old. The dominant trees have a diameter range of 4 - 28 inches taken at 4.5 feet above grade. Tree heights vary from 15 - 100 feet. Overall health or condition of the Douglas-fir and Maple trees is very good. I did not identify any signs of Laminated root rot (*Phellinus weirii*) pockets, additional diseases or insect occurrences throughout the site.

Douglas-fir and Big Leaf maple are the dominant tree but there exists the following associated vegetation:

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II. Trees & Associated Vegetation Inventory

Table 1. Associated Trees & Shrubs Found On Site.

SPECIES	BOTANICAL NAME
Douglas-fir	<i>Pseudotsuga menziesii</i>
Braken Fern	<i>Pteridium aquilinum</i>
Bitter Cherry	<i>Prunus emarginata</i>
Shore Pine	<i>Pinus contorta</i>
Western Red Cedar	<i>Thuja plicata</i>
Red Alder	<i>Alnus rubra</i>
Black Cottonwood	<i>Populus balsamifera</i>
Grand fir	<i>Abies grandis</i>
Western Hemlock	<i>Tsuga heterophylla</i>
Black Locust	<i>Robinia pseudoacacia</i>
Pacific Dogwood	<i>Cornus nuttallii</i>
Scouler's Willow	<i>Salix scouleriana</i>
Serviceberry	<i>Amelanchier alnifolia</i>
Western Hazelnut	<i>Corylus cornuta</i>
Dull Oregon-Grape	<i>Mahonia nervosa</i>
Blackberry	<i>Rubus spp.</i>
Salal	<i>Gaultheria shallon</i>
Swordfern	<i>Polystichum munitum</i>
Black Hawthorn	<i>Crataegus douglasii</i>
Scotch Broom	<i>Cytisus scoparius</i>
Cascara	<i>Rhamnus purshiana</i>
Indian Plum	<i>Oemleria cerasiformis</i>

Tree retention areas are designated as Area A., B. and the 100' Buffer along the eastside of the development site. Please note the site plan for tree retention area and buffer locations.

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II. Trees & Associated Vegetation Inventory

Table 2. Tree Inventory

#	Species	Trunk Diameter (inches)	Condition	Recommendation
1	Douglas-Fir (DF)	21"	G	Remove (R)
2	Grand Fir (GF)	9"	P	R
3	DF	22"	G	S
4	DF	14"	G	S
5	DF	25"	F	S
6	DF	27"	F	S
7	DF	22"	G	S
8	Big Leaf Maple (BLM)	6"	G	S
9	DF	13"	G	S
10	DF	15"	G	S
11	DF	13"	G	S
12	DF	9"	G	R
13	DF	9"	G	R
14	DF	8"	G	S
15	DF	4"	F	S
16	DF	20"	G	R
17	DF	6"	F	S
18	DF	14"	G	S
19	DF	18"	G	S
20	DF	6"	F	S
21	DF	15"	G	S
22	DF	17"	G	S
23	GF	12"	F	S
24	DF	22"	G	S
25	DF	10"	G	S
26	DF	28"	G	S
27	BLM	50"	F	R
28	DF	25"	G	S
29	DF	18"	G	S
30	DF	24"	G	S
31	DF	20"	G	R
32	DF	20"	G	R
33	DF	17"	F	S
34	DF	16"	G	S
35	DF	17"	F	S
36	DF	10"	G	S

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Additional Parking and Growing Facilities

II. Trees & Associated Vegetation Inventory

Table 2. Tree Inventory

#	Species	Trunk Diameter (inches)	Condition	Recommendation
37	DF	10"	G	S
38	DF	10"	G	S
39	DF	8"	G	S
40	DF	26"	G	R
41	DF	16"	G	R
42	DF	16"	F	S
43	DF	21"	G	S
44	DF	26"	G	S

Table 3. 100' Buffer Area - Tree Inventory

Retention Area	Acres	Total # Trees	DBH Range	Species Type
14	1.33	155	6-40"	BLM/DF/Wrc/Ra

BLM – Big Leaf maple, DF – Douglas-fir, Wrc – West. Red Cedar, Ra – Red alder

The 100' Buffer area contained Big Leaf Maple (dominant species), Douglas-fir, Red alder and Western Red Cedar. The maples were large canopied trees that contributed to a continuous stand along the entire eastside of the property. Douglas-fir trees were in greater number at the southeast corner. All of the trees appeared to be in very good condition. I did not observe insect or disease infestations within the stand.

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Condition Rating

Condition ratings are defined by Poor (P), Fair (F), and Good (G).

~ Trees rated as 'poor' are showing signs of decline, stress, poor structure such as co-dominant stems, rot, decay. The 'poor' rated trees are not identified for retention.

~ Trees rated as 'fair' are showing signs of stress, poor structure but not of concern, overall not having vigorous growth. The 'fair' rated trees may be considered for retention. It is a judgment call, which is reflected on the tree protection site plan.

~ Trees rated as 'good' are showing signs of vigorous growth, no decay or rot, good structure, overall 'good' condition. The 'good' rated trees are strong candidates for retention.

Retained trees are field marked with a numbered aluminum tag. Each retained tree will be identified on the site, grading and erosion control plans. Trees identified for removal are not marked on site. Trees and stand of trees identified for removal will be identified on the site, grading and erosion control plans.

Landmark Trees

I found no trees on the site that would be considered specimen or 'Landmark' trees.

Off-Site Trees

Due to the slopes, wetland and the watershed areas there will be minimal tree removal. The required setbacks from critical areas and water will prevent development impacts to associated or adjacent trees along the north, south and west property lines. The east property line borders West Bay Drive NW.

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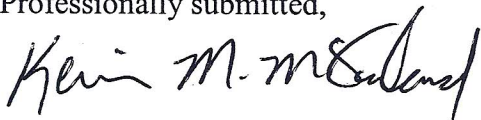
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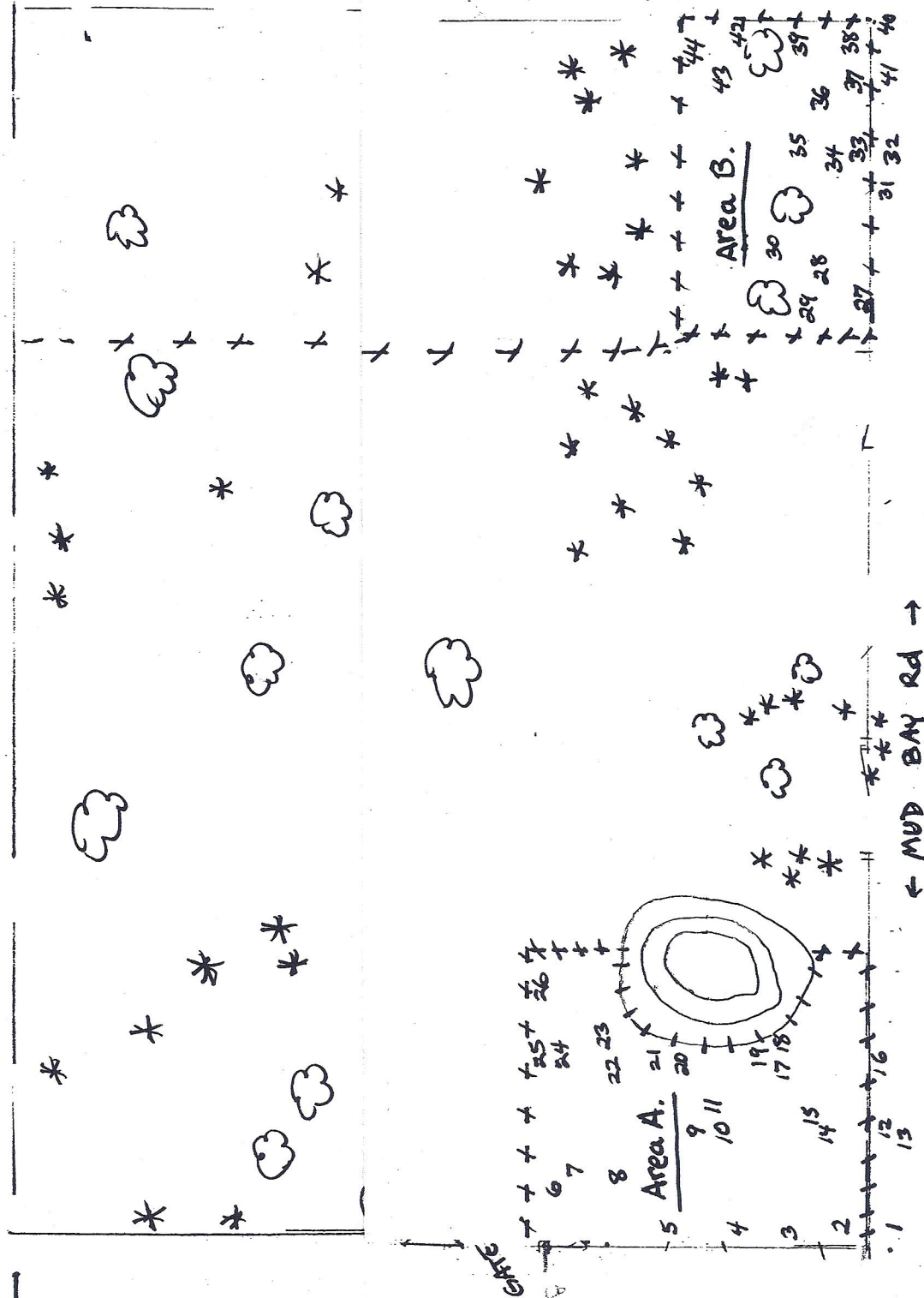
LEGEND

* — Coniferous Tree

☁ — Deciduous Tree

— Protective Fencing Location

Area A. — Tree Protection Zone



BARK & GARDEN CENTER

SCALE 1" = 30'

CONSTRUCTION NOTES (Attachment 1.)

- 1) Prior to any tree removal - Trees to be preserved shall be flagged in the field.
- 2) Prior to clearing, and grading the tree protection fencing shall be installed (exception is the removal of asphalt).
- 3) Tree protected areas of any tree designated to remain, prohibits activities such as, but not limited to, parking equipment, placing solvents, storing material and soil deposits, dumping concrete washout and locating burn holes.
- 4) During construction, no person shall attach any object to any tree designated for protection.
- 5) Equipment entry into tree protection areas is strictly prohibited without prior authorization of the City's Urban Forester.
- 6) Prior to development the applicant shall erect and maintain visible protective tree fencing along the outer edge and completely surrounding the protected area of all protected trees.
- 7) Prior to development the applicant may be required to cover with mulch to a depth of at least six (6) inches or with plywood the areas adjoining the critical root zone of a tree to protect roots.
- 8) Prior to development the applicant shall prohibit excavation or compaction of earth or other damaging activities within the barriers.
- 9) Prior to development the applicant may be required to minimize root damage by excavating a two (2) foot deep trench to cleanly sever the roots of trees to be retained.
- 10) Prior to development the applicant shall maintain the protective barriers in place until the Urban Forester authorizes their removal or a final certificate of occupancy is issued.
- 11) Prior to development the applicant shall ensure that any landscaping done in the protected zone subsequent to the removal of the barriers shall be accomplished with light machinery or by hand.
- 12) The grade shall not be elevated or reduced within the critical root zone of trees to be preserved without the Urban Forester's authorization.
- 13) If grade adjacent to a preserved tree is raised such that it could slough or erode into the tree's critical root zone, it shall be permanently stabilized to prevent suffocation of the roots.
- 14) The applicant shall not install an impervious surface within the critical root zone of any tree to be retained without the authorization of the Urban Forester.

CONSTRUCTION NOTES

- 15) Utility trenches shall be located outside of the critical root zones of trees to be retained.
- 16) Trees and other vegetation to be retained shall be protected from erosion and sedimentation.
- 17) Directional felling of trees shall be used to avoid damage to trees designated for retention.
- 18) The Urban Forester may require additional tree protection measures, which are consistent with accepted urban forestry practices.