DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
450 110th Ave NE., P.O. BOX 90012
BELLEVUE, WA 98009-9012

OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS

The attached materials are being sent to you pursuant to the requirements for Process II Land Use Action (LUC 20.35.200). The proposal has already undergone and received a DNS using the Optional DNS Process (WAC 197-11-355). This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal is attached.

File No.	10-112204 LO
Project Name/Address:	Glendale Golf & Country Club Vegetation Management Plan 13440 Main Street
Planner:	Kevin LeClair
Phone Number:	425-452-2928

Minimum Comment Period: **June 10, 2010**

Materials included in this Notice:

- ☒ Blue Bulletin
- ☒ Checklist
- ☒ Vicinity Map
- ☒ Plans
- ☐ Other:

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DETERMINATION OF NON-SIGNIFICANCE

PROPONENT: Steve Kealy, Glendale Golf and Country Club

LOCATION OF PROPOSAL: 13440 Main Street

NAME & DESCRIPTION OF PROPOSAL:
Clearing and grading permit for the removal of 150 trees from the golf course property. Three trees removed from the 50-foot stream critical area buffer and 2 trees removed from 110-foot wetland critical area buffer. Mitigation for critical area and critical area buffer removals includes planting of 21 native conifer trees in wetland buffer.

FILE NUMBER: 10-109330 GH

The Environmental Coordinator of the City of Bellevue has determined that this proposal does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Development Services Department. This information is available to the public on request.

☐ There is no comment period for this DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's office by 5:00 p.m. on _____.

X This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's Office by 5 p.m. on May 27, 2010.

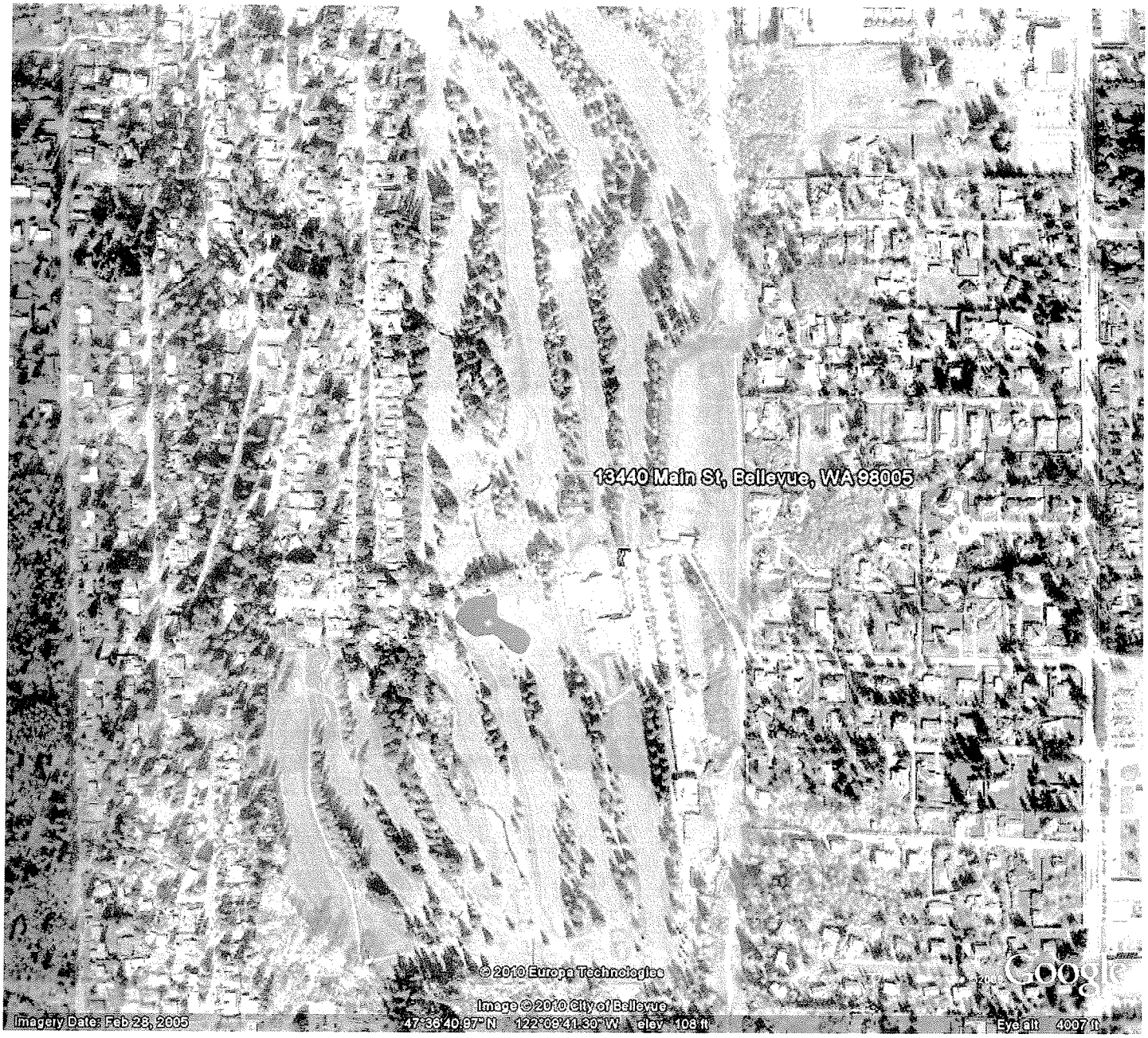
☐ This DNS is issued under WAC 197-11-340(2) and is subject to a 14-day comment period from the date below. Comments must be submitted by 5 p.m. on _____. This DNS is also subject to appeal. A written appeal must be filed in the City Clerk's Office by 5 p.m. on _____.

This DNS may be withdrawn at any time if the proposal is modified so that it is likely to have significant adverse environmental impacts; if there is significant new information indicating, or on, a proposals probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project): or if the DNS was procured by misrepresentation or lack of material disclosure.

Environmental Coordinator

May 13, 2010
Date

OTHERS TO RECEIVE THIS DOCUMENT:
State Department of Fish and Wildlife
State Department of Ecology,
Army Corps of Engineers
Attorney General
Muckleshoot Indian Tribe



Vicinity Map

City of Bellevue Submittal Requirements | **27a**

ENVIRONMENTAL CHECKLIST

4/18/02

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Our TTY number is 425-452-4636.

BACKGROUND INFORMATION

Property Owner: Glendale Country Club

Proponent:

REVIEWED
By Kevin LeClair at 9:15 am, May 11, 2010

Contact Person: Steve Kealy
(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: 13440 main Street Bellevue WA 98005

Phone: 425 652 2855

Proposal Title: Glendale tree Removal

Proposal Location: 13440 main st Bellevue WA 98005
(Street address and nearest cross street or intersection) Provide a legal description if available.

Please attach an 8 ½" x 11" vicinity map that accurately locates the proposal site.

Give an accurate, brief description of the proposal's scope and nature:

1. General description: Removal of 150 trees on the Golf course
2. Acreage of site: 148
3. Number of dwelling units/buildings to be demolished: Ø
4. Number of dwelling units/buildings to be constructed: Ø
5. Square footage of buildings to be demolished: Ø
6. Square footage of buildings to be constructed: Ø
7. Quantity of earth movement (in cubic yards): Ø
8. Proposed land use: Golf course – same as now.
9. Design features, including building height, number of stories and proposed exterior materials: Ø
10. Other Remove trees, Grind Stumps, Place fill where the stump was grand, and sod that area.

Tree removal in critical area buffer revised based on new information regarding the size of the regulatory buffers. Originally, the applicant thought the stream buffer on the West Tributary was 100 feet. Instead, it is 50 feet, so the tree removal in buffer was revised from 10 trees down to 5 trees. 3 trees were removed from the stream buffer and 2 trees were removed from the the wetland buffer.

Re-Plant a 6600 Sq ft area to make up for 10 trees removed within a critical area.

Estimated date of completion of the propo. timing of phasing: 3 weeks to complete
Removal of trees + Stump grinding

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
—

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
—

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.
Clear + grade permit - city of Bellevue

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

Permit file #s
10-106816 EA (enforcement)
10-109330 GH (clear & grade)
10-112044 LO (critical areas)

Please provide one or more of the following exhibits, if applicable to your proposal. (Please check appropriate box(es) for exhibits submitted with your proposal):

☐ Land Use Reclassification (rezone) Map of existing and proposed zoning

☐ Preliminary Plat or Planned Unit Development
Preliminary plat map

☒ Clearing & Grading Permit
Plan of existing and proposed grading
Development plans

☐ Building Permit (or Design Review)
Site plan
Clearing & grading plan

☐ Shoreline Management Permit
Site plan

A. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site: ☐ Flat ☒ Rolling ☐ Hilly ☐ Steep slopes ☐ Mountains ☐ Other

b. What is the steepest slope on the site (approximate percent slope)? No steep slopes exist where trees are being removed

c. What general types of soil are found on the site (for example, clay, sand, gravel, peat, and muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.
clay loam.

REVIEWED
By Kevin LeClair at 9:27 am, May 11, 2010

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. NO

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill. NO grading, fill 150 ground stumps with approx. 50 yards ~~mat~~ soil.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. NO

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? NA

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: Re-sod areas filled ~~with~~ after stump grinding

Clearing and grading inspector will inspect to ensure no erosion risk. Risk is low due to isolated nature of each stump and applicant's desire to quickly restore area to grass.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e. dust, automobile odors, and industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known. NA

Temporary emissions will be generated by the equipment used to remove the trees and grind the stumps.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. NA

c. Proposed measures to reduce or control emissions or other impacts to the air, if any: NA

3. WATER

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By Kevin LeClair at 9:27 am, May 11, 2010

a. Surface

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If

- West tributary
- Kelsey Creek

appropriate, state wha[illegible]eam or river it flows into.

(2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If Yes, please describe and attach available plans. Some trees will Be Removed within 200 feet, but outside the stream Buffers.

(3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Ø

(4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

NA

(5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. —

Several are close to flood plain, but outside.

(6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

NA

b. Ground

(1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description. N/A

(2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.) Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

NA

REVIEWED
By Kevin LeClair at 9:31 am, May 11, 2010

c. Water Runoff (Including stor. ater)

(1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

NA

(2) Could waste materials enter ground or surface waters? If so, generally describe. NA

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any: NA

4. Plants

a. Check or circle types of vegetation found on the site:

- [x] deciduous tree: alder, maple, aspen, other
- [x] evergreen tree: fir, cedar, pine, other
- [x] shrubs
- [x] grass
- [ ] pasture
- [ ] crop or grain
- [ ] wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other
- [ ] water plants: water lily, eelgrass, milfoil, other
- [ ] other types of vegetation

No threatened, endangered or rare plants are known to exist at the property.

b. What kind and amount of vegetation will be removed or altered? Removal of Evergreen trees

c. List threatened or endangered species known to be on or near the site. NA

Planting plan includes the installation of 21 native conifers within the wetland buffer and approximately 100 feet from West Tributary.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: See Attached Plan

REVIEWED
By Kevin LeClair at 9:33 am, May 11, 2010

5. ANIMALS

a. Check or circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

- [X] Birds: hawk, heron, eagle, songbirds, other:
- [X] Mammals: deer, bear, elk, beaver, other:
- [X] Fish: bass, salmon, trout, herring, shellfish, other:

Eagles are known to soar over the sight and likely perch in the conifer trees on the site. There will still be a number of significant conifers remaining on the site. There are no eagle nests within 2 miles of the project site.

b. List any threatened or endangered species known to be on or near the site. NA

c. Is the site part of a migration route? If so, explain. — Bellevue is part of the Pacific Flyway for migrating birds.

d. Proposed measures to preserve or enhance wildlife, if any: NA

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy need? Describe whether it will be used for heating, manufacturing, etc. None

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. NO

c. What kinds of energy conservation features are included in the plans of the proposal? List other proposed measures to reduce or control energy impacts, if any: NA

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

NA

(1) Describe special emergency services that might be required. NA

(2) Proposed measures to reduce or control environmental health hazards, if any. NA

REVIEWED
By Kevin LeClair at 9:33 am, May 11, 2010

b. Noise

(1) What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)? None

(2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site. Chain saw noise
wood chipper noise

(3) Proposed measures to reduce or control noise impacts, if any: —

Noise impacts will be temporary and will be within the construction noise hours allowed by Bellevue City Code 9.18

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Golf course

b. Has the site been used for agriculture? If so, describe. —

c. Describe any structures on the site. Clubhouse, Pro shop, maintenance shop, golf cart storage bldgs

d. Will any structures be demolished? If so, what? No

e. What is the current zoning classification of the site? Golf course - conditional use

f. What is the current comprehensive plan designation of the site? —

g. If applicable, what is the current shoreline master program designation of the site? —

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify. yes, 2 Stre
Run across the course

I. Approximately how many people would reside or work in the completed project? Ø

j. Approximately how many people would the completed project displace? Ø

k. Proposed measures to avoid or reduce displacement impacts, if any: Ø

i. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

—

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

NA

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

NA

c. Proposed measures to reduce or control housing impacts, if any:

NA

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

NA

b. What views in the immediate vicinity would be altered or obstructed? NA

c. Proposed measures to reduce or control aesthetic impacts, if any: NA

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? NA

b. Could light or glare from the finished project be a safety hazard or interfere with views? NA

c. What existing off-site sources of light or glare may affect your proposal? NA

d. Proposed measures to reduce or control light or glare impacts, if any: NA

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity? NA

The property serves as a private recreation resource as a private golf and country club.

b. Would the proposed project displace any existing recreational uses? If so, describe. NA

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Impacts will be temporary during work, but it will be timed to minimize any temporary impacts. NA

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe. NA

b. Generally describe any landmarks or evidence of historic, archeological, scientific, or cultural importance known to be on or next to the site. NA

c. Proposed measures to reduce or control impacts, if any: NA

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any. NA

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop? NA

c. How many parking spaces would be completed project have? How many would the project eliminate? NA

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private). NA

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. NA

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur. NA

g. Proposed measures to reduce or control transportation impacts, if any: NA

15. Public Services

a. Would the project result in an increased need for the public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe. NA

b. Proposed measures to reduce or control direct impacts on public services, if any. NA

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. NONE

Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature Steve Kealy

Date Submitted 4/2/2010

REVIEWED
By Kevin LeClair at 9:49 am, May 11, 2010

Glendale Golf Club Tree Plan

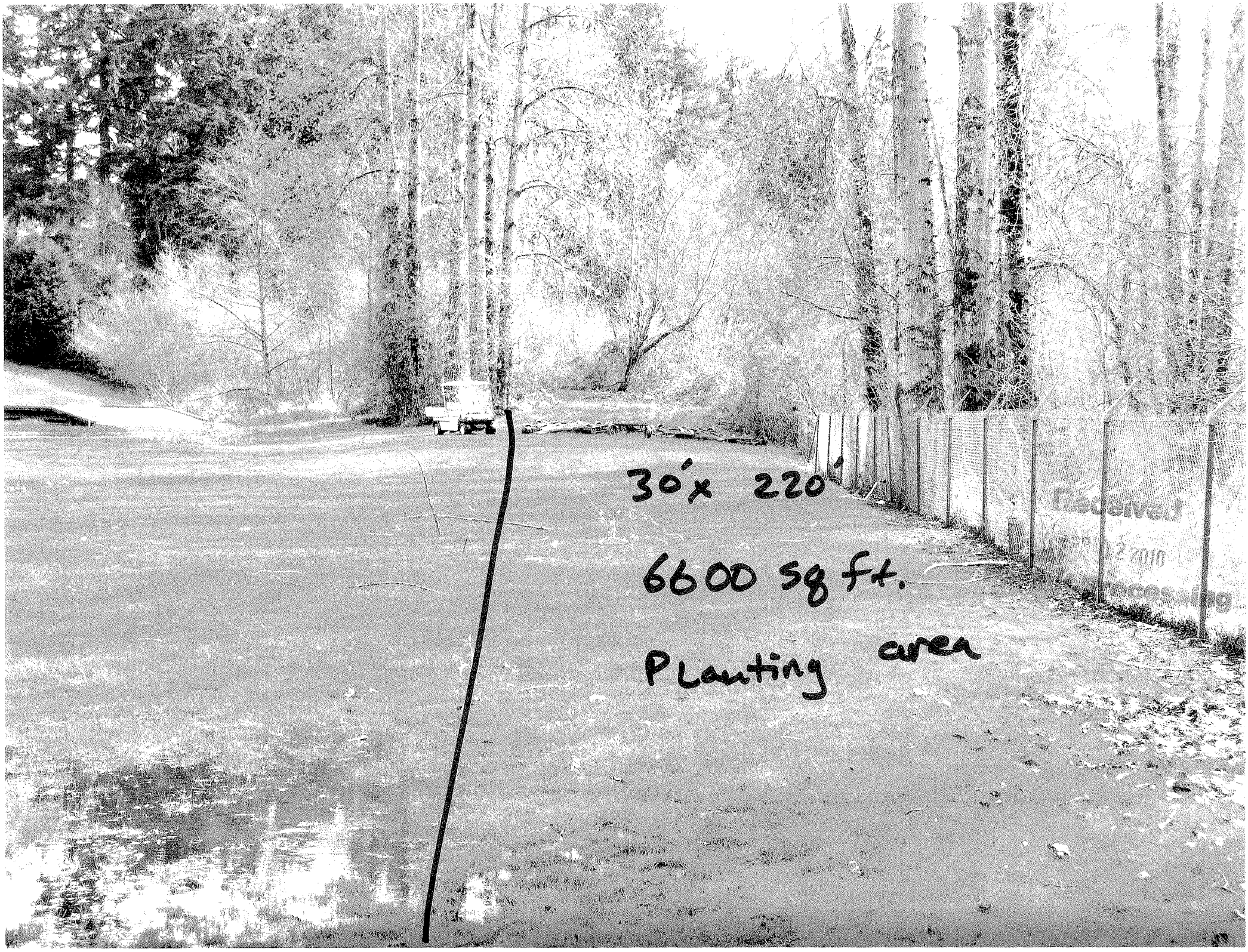
SCALE 1 : 3,157

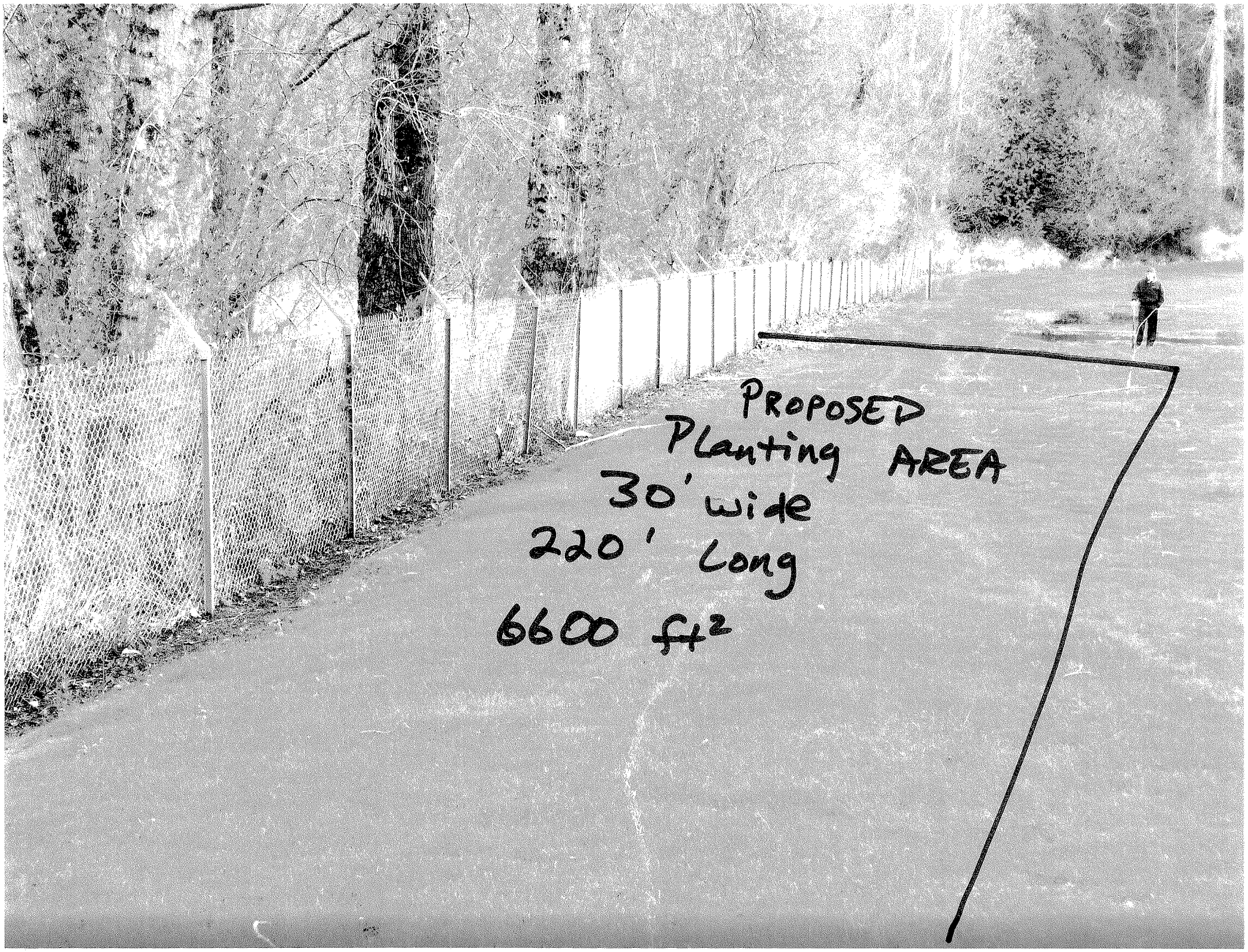
200 0 200 400 600

FEET

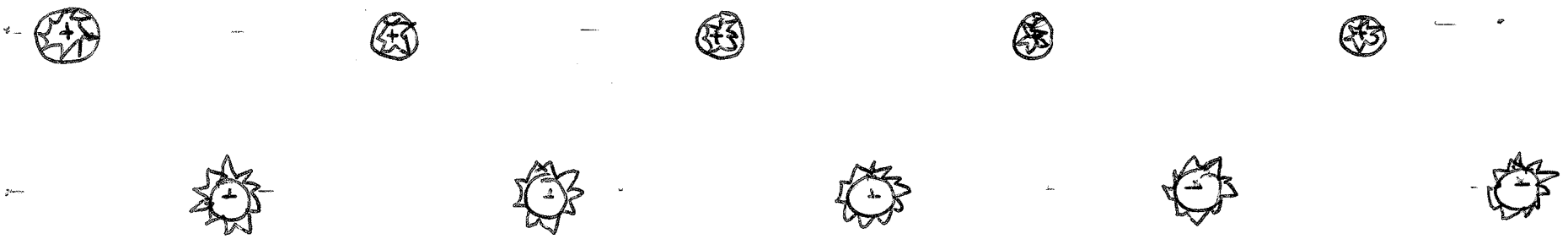
N

Monday, May 03, 2010 11:02 AM


30' x 220'
6600 sq ft.
Planting area

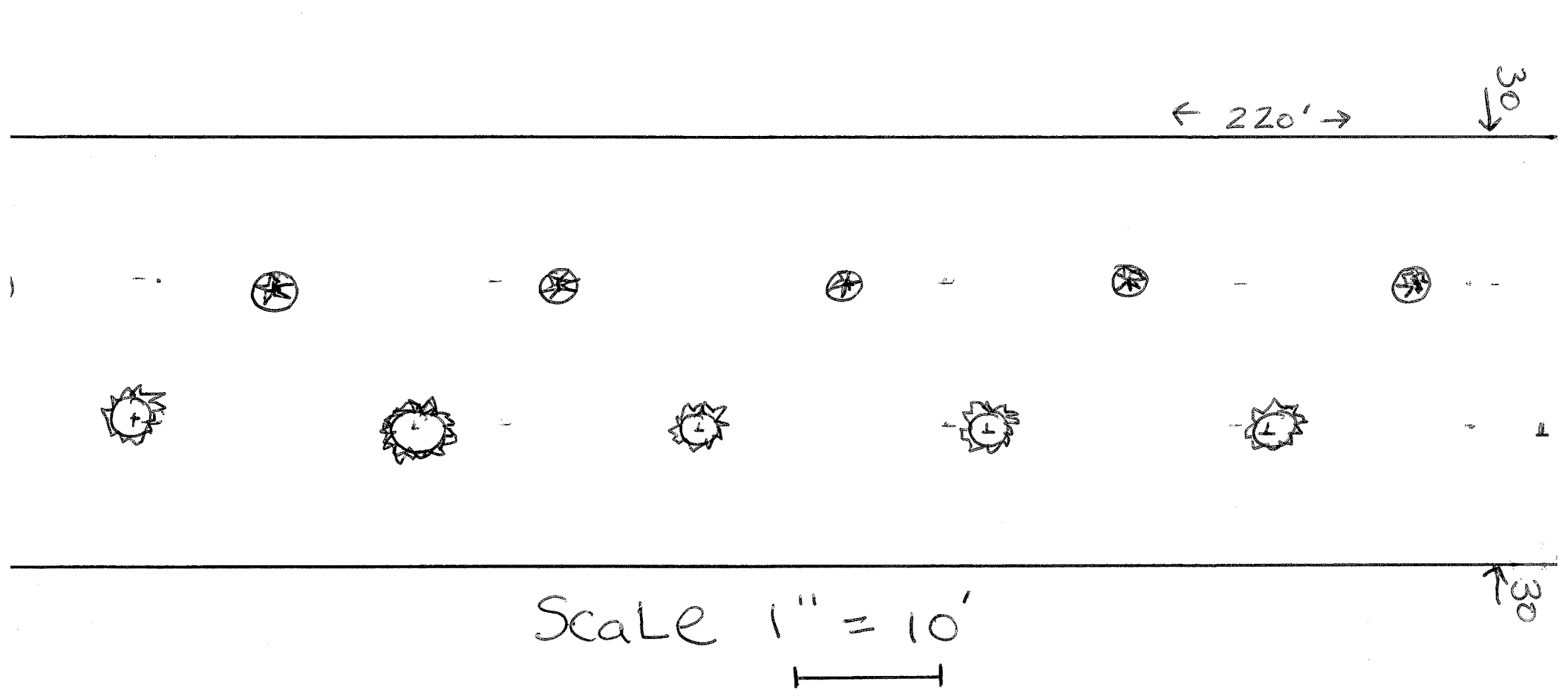

PROPOSED
Planting AREA
30' wide
220' Long
6600 ft²

GLENDALE COUNTRY CLUB TREE REMOVAL PROJECT
CRITICAL AREA PLANTING PLAN



PLANT LIST:

SPECIES	COMMON NAME	SIZE	QUANTITY	SYMBOL
PICEA SITCHENSIS	SITKA SPRUCE	B+B 5-6'	11	+
THUJA PLICATA	WESTERN RED CEDAR	B+B 6-7'	10	+


← 220' →
30'
30'
Scale 1" = 10'
N

Glendale Country Club Tree Remc roject
Vegetation Management Plan

Glendale Country Club was established in Seattle in 1925, as a nine hole golf course. During the 1950's the club wanted to expand to eighteen holes, but no land adjacent to the course was available. Various sites around the greater Seattle area were considered, and the current site in Bellevue was purchased in 1957. The golf course was built, and opened for play in 1959.

The golf course had been a farm since the early 1900's, and trees had been cleared off around that time. When the course opened for play, there were very few trees on the course. In 1960, several of the founding members got together and purchased a large lot of small trees to be planted around the course. Most of the trees were Ponderosa Pines which are not native to Western Washington, and fifty years later, are not in very good health. The Pine trees were selected because the price was so low they couldn't pass on the deal.

The trees were placed around all the greens, tees, and fairways to give a feeling of each hole being separate from the rest. Since the trees were so small and they were planted by a group of volunteers, no thought was given to where the trees should be placed. They were planted too close together, and too close to greens and tees.

Over the past five years, some of the trees on the course have become so tall that they are causing serious shade issues on our putting greens. The trees on our course have an average vertical growth rate of 22 inches, and a horizontal growth rate of 12 inches per year. The current shade situations will only get worse with time. (See attached information from Arborcom, the consultant who did the shade analysis work.) The turf has become thin, and does not hold up to foot traffic or environmental stress. We have to apply more water and more fungicides on those greens to prevent them from getting diseased. Turf grass needs sufficient light for healthy growth, and the only way for that to happen is to remove the light blocking trees.

We hired a consultant and had a light analysis done on the seven greens which have the worst shade problems. They gave us their recommendations for tree removals, and there are five trees that need to be removed within critical areas on the course. There are three Ponderosa Pine trees next to the fourteenth green, which fall within the 50' setback of the West Tributary. The trees lie to the east side of the stream, and are set between 40-44 feet from the top of bank. The tree trunks range in size from 30-36 inches in size, and there is mowed grass between the trees and the stream. The other two trees are Western Red Cedars, which are within the 110' setback of a class II wetland on the North end of Kelsey Creek Park. The trunks are 48 and 58 inches in diameter, and are located approximately 50' from the wetland, with mowed grass between them and the wetland. Our proposed mitigation for removal of the five trees consists of planting twenty one new trees within the 110" setback of a class II wetland, located in the southwest corner of our property. The two varieties selected are Western Red Cedar, and Sitka Spruce. They will be 6-7 feet in size, and be spaced over a 6600 square foot area. The five trees being removed have a drip line area of 3000 square feet.

COMPANY BACKGROUND

Founded in 1997, ArborCom Technologies Inc. uses patented, computer modeling technology to solve shade problems on greens, tees, and fairways. ArborCom's detailed, analytical method has helped hundreds of North America's best golf courses solve their shade problems. Some of our clients include East Lake Golf Club, Trump National, Harbour Town Golf Links at Sea Pines, Southern Hills Country Club, Medinah Country Club, Muirfield Village Golf Club, Oak Hill Country Club, Point o' Woods Golf & Country Club, Peachtree Golf Club, and Winged Foot Golf Club.

ArborCom uses patented, analytical calculations (Hours of Sunlight, Stand Alone Contribution to Green Shading, etc.) to methodically develop pruning and removal programs that fix shade problems. We work with all concerned parties and stakeholders to improve light penetration to shaded areas. Various "what if" scenarios are worked through with clients to find tree pruning and removal programs that fix light problems while maintaining the strategy and aesthetics of the hole. We graphically illustrate the number of hours of sunlight each green, tee, or fairway is getting and the future conditions if tree removal and pruning recommendations are implemented.

Our Shade Specialists use cutting edge graphics in conjunction with university research, and client success stories to communicate about the effect of shade on greens, tees, and fairways. These graphics are used in powerful presentations delivered by our Shade Specialists on-site to clients. These on-site presentations have lead to an extremely high acceptance rate of our pruning and removal recommendations and, hence, better turf quality for our clients.

HOW ARBORCOM'S PROPRIETARY SOFTWARE, SUNSHADER™ (patented), WORKS FOR YOU ...

The diagrams on the following pages have been generated by ArborCom's SunShader™ *(patented)* system. The software takes data collected on the sites and trees, and computes three-dimensionally. An astronomic algorithm calculates the exact sun angles for a time within a range of times specified by the ArborCom consultant. The computer, then, mathematically holds the sun up behind the trees and uses trigonometry calculations to calculate exactly where shadows will fall on the site, the number of hours of light reaching the site, and what trees are contributing to the shading of the site. For each diagram illustrated on the following pages, the computer has gone through over 35 000 calculations.

GENERAL OVERVIEW

Contained in this report are the findings and recommendations regarding light penetration to #1, 2, 4, 6, 7, 13, 14 and 16 Greens at Glendale Country Club. Site work and meetings were carried out on January 21 through February 5, 2010. Calculations for light penetration focused on the growing season months of February through October.

The following light penetration goals were used for the current stand of turf on this site:

	Morning Light	*All Day* Light
June	2-3 hours	7-8 hours
July / May	2-3 hours	7-8 hours
August / April	2-3 hours	7-8 hours
September / March	2-3 hours	6-7 hours
October / February	none set	5-6 hours
November / January	none set	none set
December	none set	none set

Please refer to the Appendix for light goals for the different cultivars of turfgrass.

#1 GREEN
Based on the above light goals, light penetration to #1 Green is deficient in *morning* light on portions of the green throughout the growing season months. *All day* light is deficient on all or portions of this green throughout the growing season months.

Two removal scenarios have been prepared for #1 Green. Scenario 1 meets the *morning* and *all day* light goals, as set. Scenario 2 meets the *morning* and *all day* light goals, as set, 10 years into the future.

#2 GREEN
Based on the above light goals, light penetration to #2 Green is deficient in *morning* light on portions of the green during the months of March, April, August and September. During the months of May, June and July, *morning* light goals are already met. *All day* light is deficient on all or portions of this green throughout the growing season months.

Two removal scenarios have been prepared for #2 Green. Scenario 1 meets the *morning* and *all day* light goals, as set. Scenario 2 meets the *morning* and *all day* light goals, as set, 10 years into the future.

#4 GREEN
Based on the above light goals, light penetration to #4 Green is deficient in *morning* light on portions of the green throughout the growing season months. *All day* light is deficient on all or portions of this green throughout the growing season months.

Two removal scenarios have been prepared for #4 Green. Scenario 1 meets the *morning* and *all day* light goals, as set. Scenario 2 meets the *morning* and *all day* light goals, as set, 10 years into the future, throughout the growing season months, except in July, when *morning* light goals will fall very slightly short. The small area of deficiency and value of trees did not justify additional tree removals.

#6 GREEN
Based on the above light goals, light penetration to #6 Green is deficient in *morning* light in September. Throughout the rest of the growing season months, *morning* light goals are already met. *All day* light goals are already met in May, June, and July. However, the remainder of the growing season months, *all day* light is deficient on all or portions of this green.

Two removal scenarios have been prepared for #6 Green. Scenario 1 meets the *morning* and *all day* light goals, as set. Scenario 2 meets the *morning* and *all day* light goals, as set, 10 years into the future.

#7 GREEN
Based on the above light goals, light penetration to #7 Green is deficient in *morning* light on portions of the green throughout the growing season months. *All day* light goals are deficient on all or portions of this green throughout the growing season months.

Two removal scenarios have been prepared for #7 Green. Scenario 1 meets the *morning* and *all day* light goals, as set. Scenario 2 meets the *morning* and *all day* light goals, as set, 10 years into the future.

#13 GREEN
Based on the above light goals, light penetration to #13 Green is deficient in *morning* light on portions of the green throughout the growing season months. *All day* light is deficient on all or portions of this green throughout the growing season months.

Two removal scenarios have been prepared for #13 Green. Scenario 1 meets the *morning* and *all day* light goals, as set. Scenario 2 meets the *morning* and *all day* light goals, as set, 10 years into the future.

#14 GREEN
Based on the above light goals, light penetration to #14 Green is deficient in *morning* light on portions of the green throughout the growing season months. *All day* light is deficient on all or portions of this green throughout the growing season months.

Two removal scenarios have been prepared for #14 Green. Scenario 1 meets the *morning* and *all day* light goals, as set. Scenario 2 meets the *morning* and *all day* light goals, as set, 10 years into the future, except in October and February when *all day* light goals will still fall short. *All day* light goals will not be met because of the need to retain Tree 348 as it was deemed strategically important by the Pro.

#16 GREEN
Based on the above light goals, light penetration to #16 Green is deficient in *morning* light on portions of the green in May, June and July. Throughout the rest of the growing season months, *morning* light goals are already met. *All day* light is deficient on portions of this green throughout the growing season months.

Two removal scenarios have been prepared for #13 Green. Scenario 1 meets the *morning* and *all day* light goals, as set. Scenario 2 meets the *morning* and *all day* light goals, as set, 10 years into the future.

If none of the recommendations on these greens are implemented, light penetration will continue to deteriorate. Light penetration will not remain the same, it will continue to worsen if no work is undertaken. A sample aged scenario has been included of #6 Green on page 11 to 15 of this report to illustrate this point. #6 Green has been aged backward and forward 10 years to illustrate the point that light penetration will continue to worsen.

This report is structured in such a way as to provide the findings, directly followed by the recommendation scenarios. Also included in this report are hours of sunlight diagrams showing the amount of light reaching the site *(before and after diagrams are shown on one page for each month)*, tree ranker diagrams showing how much shade each tree is casting on the site, and shadow patterns showing the actual shading at specified times.

There is an appendix at the end of this report that contains the color code chart for the Hours of Sunlight diagrams as well as an overview of the light requirements of turf for the different cultivars. Photographs of key trees and an inventory of trees are provided. Aluminum numbered tags were nailed into each tree on-site with a number that corresponds to that tree in the computer model. The last two digits on the aluminum tag corresponds to the computer model number. Also included is an allowable tree height diagram that visually illustrates the height a tree can be before it will block light to the site.

Any directions (ie. left, right, back, front) given in this report are used in reference to the line of play. All references to 'small portion' of the site contained in this report refer to amounts less than 1%. If no specific area of light deficiency is indicated, the deficiency is spread throughout the site.

ArborCom Technologies Inc. provides tree removal and pruning recommendations to improve light penetration. Their work and reports do not comment on structural problems of trees and trees posing a risk.

AGED SCENARIOS

By measuring twig elongation and factoring in the number of years to be aged, the computer software can estimate the amount of light that will reach the site in the future as well as the amount of light that reached the site in the past.

A representative tree was selected and measured while ArborCom was on-site at Glendale Country Club. The top limb was removed and its vertical length and horizontal width was measured. Then the growth rings were counted. Based on this, the following growth rate was developed and used for aging the greens.

- 22 inches vertical
- 6 inches (each side) horizontal

#6 Green has been selected to illustrate the fact that if no action is taken, the light conditions will continue to deteriorate. The same, however, is true for all of the green sites. If removal recommendations are not undertaken to improve light penetration, all of the sites will continue to deteriorate. This illustrates the point that time does not stand still, light penetration has and will continue to deteriorate.

#6 GREEN AGED SCENARIO

The diagrams on the following pages have been included to illustrate what light penetration was like 10 years ago and what it will be like 10 years from now if no action is taken on #6 Green. The months of June, August and October have been used to illustrate the effect. You will observe that:

JUNE (morning)

10 years back	morning light goals were met
Existing Conditions	morning light goals are met
10 years forward	morning light will still be met

AUGUST (all day)

10 years back	all day light goals were met
Existing Conditions	all day light is deficient on 19% of the back left side of the green, by 1-4 hours
10 years forward	all day light will be deficient on 53% of the green, by 1-5 hours

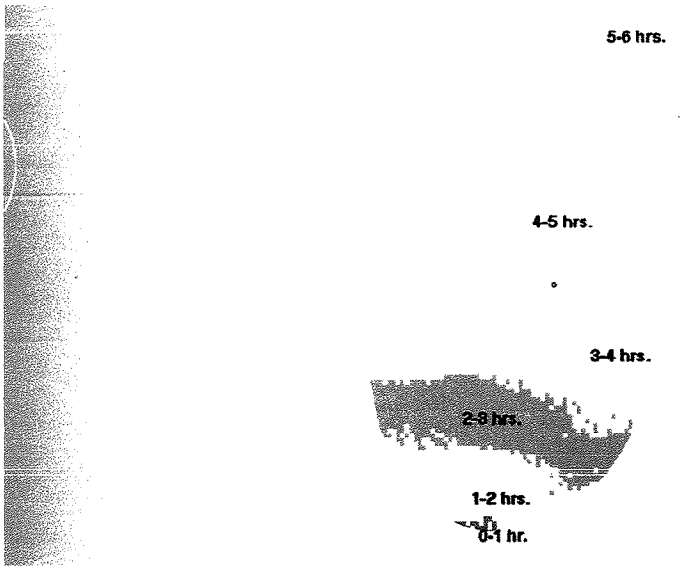
OCTOBER (all day)

10 years back	all day light was deficient on *all but* 1% of the front side of the green, by 1-5 hours
Existing Conditions	all day light is deficient on the entire green, by 2-5 hours
10 years forward	all day light will be deficient on the entire green, by 4-5 hours

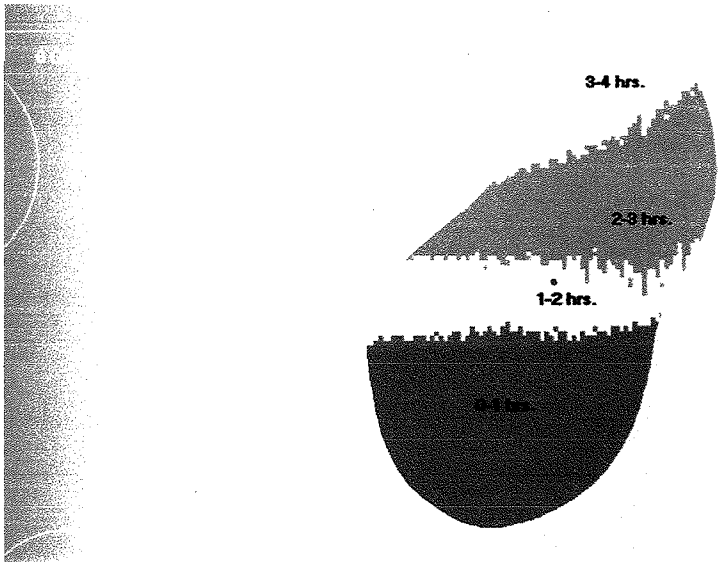
Therefore, if the recommended removals are not implemented, light penetration to #6 Green will continue to deteriorate.

October (all day)

10 YEARS BACK



EXISTING CONDITIONS



10 YEARS FORWARD