



CITY OF KIRKLAND

Planning and Community Development Department
123 Fifth Avenue, Kirkland, WA 98033 425.587.3225
www.ci.kirkland.wa.us

**ADVISORY REPORT
FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS**

To: Kirkland Hearing Examiner

From: _____ Ronald Hanson, Project Planner
_____ Dawn Nelson, AICP, Planning Supervisor
_____ Eric R. Shields, AICP, Planning Director

Date: October 14, 2008

File: **HARMON RIDGE PRELIMINARY PLAT (PSB08-00001)**

Hearing Date and Place: November 20, 2008, 9:00 a.m.
City Hall Council Chamber
123 Fifth Avenue, Kirkland

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I. INTRODUCTION

A. APPLICATION

1. Applicant: Ryan Green, Laurel Hills Partners, LLC
2. Site Location: 8325 and 8333 132nd Avenue NE, and 12873 NE 84th Street (See Vicinity Map, Attachment 1)
3. Request: Subdivide four existing lots totaling 107,293 square feet (2.46 acres) in the single-family RSX 7.2 zone into 12 lots. With the recommended right-of-way dedication for the new public street (NE 84th Street), the total site area is reduced to 88,364 square feet. Proposed lot sizes range from 7,200 square feet to 9,023 square feet. The applicant is proposing to remove all of the existing structures on the site (See Attachment 2a).
4. Review Process: Process IIA, pursuant to KMC Section 22.12.015, the Hearing Examiner conducts public hearing and makes final decision on a preliminary plat application.
5. Summary of Key Issues and Recommendations: The key issues in consideration of this short plat are compliance with established development regulations, dedication of right-of-way for a new public street to serve the plat, and providing an emergency vehicle and pedestrian access easement (See Attachment 3, Development Regulations, Section II.F.2, and Section I.B. Recommendations).

B. RECOMMENDATIONS

Based on Findings of Fact and Conclusions (Section II), and the Attachments included in this report, city staff recommends approval of this application subject to the following conditions:

1. This application is subject to the applicable requirements contained in the Kirkland Municipal Code, Zoning Code, and Building and Fire Code. It is the responsibility of the applicant to ensure compliance with the various provisions contained in these ordinances. Attachment 3, Development Standards, is provided in this report to familiarize the applicant with some of the additional development regulations. This attachment does not include all of the additional regulations. When a condition of approval conflicts with a development regulation in Attachment 3, the condition of approval shall be followed (See Conclusion II.H.2).
2. Trees shall not be removed or altered following plat approval, except as approved by the Planning Department. Attachment 3, Development Standards, contains specific information concerning tree retention requirements (See Conclusion II.F.1.b).
3. Prior to recording the final plat with King County, the applicant shall obtain a demolition permit from the City of Kirkland and remove all of the existing structures on the site (See Conclusion II.A.1.b).
4. The applicant shall follow the recommendations of the Geotechnical Report during all phases of development on the site (See Conclusion II.A.1.b).

5. The applicant shall show the shared driveway easements/access easements on the recorded plat (See Conclusion II.F.3.b).

II. FINDINGS OF FACT AND CONCLUSIONS

A. SITE DESCRIPTION

1. Site Development and Zoning:

a. Facts:

- (1) Size: The site is 107,293 square feet (2.46 acres).
- (2) Land Use: The site is currently developed by three single family homes. Due to their location in relation to the proposed lot lines and plat improvements, the applicant is proposing to remove all of the homes.
- (3) Zoning: RSX 7.2, a single-family residential zone with a minimum lot size of 7,200 square feet. Proposed lot sizes range from 7,200 square feet to 9,023 square feet. Lot 1 is 9,023 square feet, Lot 2 is 7,229 square feet, Lots 3 and 4 are 7,207 square feet, Lots 5, 7-11 are 7,200 square feet, Lot 6 is 7,202 square feet and Lot 12 is 7,256 square feet (See Attachment 2a).
- (4) Terrain: The site is generally level sloping up slightly from east to west. The site ranges in elevation from approximately 414 feet along the east property line to 420 feet along the west property line. The average grade across the site is less than 5 percent (See Attachment 2a). A Geotechnical Report was prepared by Terra Associates, Inc. (See Attachment 4). The report addresses surface and subsurface conditions, hydrological conditions, landslide hazard assessment, erosion assessment, site preparation, grading, and foundation design. The report concludes that the site conditions are suitable for the proposed development provided the report recommendations are followed.
- (5) Vegetation: There are 148 significant trees on the site. Other vegetation consists of trees of less than significant size, undergrowth, lawn and other residential landscaping (See Attachment 2b, Attachment 3, Development Standards, Attachment 7, Arborist Report, and Section II.F.1).

- b. Conclusions: Size, Zoning, and Vegetation are not constraining factors in this application. Land use is not a constraining factor if the applicant removes the existing structures on the site. Terrain is not a constraining factor provided the recommendations of the Geotechnical Report are followed.

2. Neighboring Development and Zoning:

- a. Facts: The subject property is surrounded by the following uses:

North: The area is zoned RSX 7.2 and is developed by single family homes and a church. A 12 unit cottage development is currently being reviewed by the City on a 1.17 acre site located immediately north of the

eastern portion of the site (File ZON08-00006). A church is located on the site west of the cottage proposal (See Attachment 1).

South: The area is zoned RSX 7.2 and is developed by single family homes.

East: To the east is 132nd Avenue NE and the City of Redmond. The area within the City of Redmond is developed by single family homes.

West: To the west is the end of NE 84th Street and an area zoned RSX 7.2 developed by single-family homes.

- b. Conclusion: The neighborhood development and zoning are not constraining factors in this short plat.

B. HISTORY

1. Facts: The subject plat site consists of four existing lots, three of which are currently developed by single family homes.
2. Conclusion: The subject preliminary plat application is being processed under current Zoning and Subdivision regulations that apply to the property. The preliminary plat will comply with all zoning, subdivision and municipal code requirements currently in effect in order to receive approval (See Section II.E). History is not a constraining factor in this application.

C. PUBLIC COMMENT

The public comment period for the preliminary plat extended from February 28, 2008 to March 17, 2008. The Planning Department received three letters during the above comment period. The following is a summary of the issues raised in the letters.

The first letter is from Erica Spellman who resides at 13011 NE 83rd Street (See Attachment 5a). Ms. Spellman is opposed to the development of large, expensive homes on the site rather than more affordable cottages that are built “green”.

Staff Response: All of the homes constructed on the site will be required to meet the City of Kirkland Zoning Code requirements related to total site coverage by impervious area, building height, setbacks, and Floor Area Ratio (FAR). The proposed lot sizes range from 7,200 square feet to 9,023 square feet. Based on an allowable FAR of .50, the maximum house size, including garage, is from 3,600 to 4,511 square feet. The city does not have information regarding the future pricing of the homes. Regardless of the size of the homes, the applicant can participate in the City’s build green program.

The second letter is from Bonnie Kosmyna who resides at 13026 NE 83rd Street, immediately south of proposed Lots 7 and 8 (See Attachment 5b). Ms. Kosmyna has concerns regarding (1) the number of homes proposed on the site, and (2) the loss of privacy in her back yard if vegetation is removed along the south property lines of the proposed lots.

Staff Response: (1) The minimum lot size allowed by the Kirkland Zoning Code on the site is 7,200 square feet. All of the proposed lots meet this requirement. The city does not have the authority to require the applicant to develop fewer lots than are permitted if the development meets all of the Zoning Code requirements. (2) There are a large number of significant trees located along the south property line of the short plat site, including Lots

7 and 8 located adjacent to Ms. Kosmyrna's property. The applicant must comply with the City's tree preservation requirements during all phases of development. The City will require the applicant to save as many of these trees as possible during the review and installation of the required short plat improvements, and during the review and construction of individual homes on each lot.

The third letter is from Steve Tindall who resides at 12859 NE 84th Street (See Attachment 5c). Mr. Tindall's primary concern is that NE 84th Street not be extended through between 128th Avenue NE and 132nd Avenue NE. Other points raised include the potential impacts of the new homes on existing adjacent home owners, and the location and design of the emergency vehicle access and vehicle turn around on 84th Avenue NE.

Staff Response: The City is proposing to extend NE 84th Street from 132nd Avenue NE along the north end of the site to the east property line of proposed Lot 1, with a vehicle turn around area located between Lots 2 and 3. An emergency vehicle and pedestrian access easement is proposed from the west end of the new NE 84th Street right-of-way to the existing NE 84th Street right-of-way to the west. (See Attachment 3, Public Works Development Standards and Section II.F.2).

The city does not have information at this time regarding the proposed location, design, size, or height of the future homes to be constructed on the site. However, all future development must meet the Kirkland Zoning Code requirements related to single family home design, building height, size, and setbacks. The minimum side yard setback is 5 feet.

D. STATE ENVIRONMENTAL POLICY ACT (SEPA) & CONCURRENCY

1. Fact: A Determination of Non Significance was issued on July 11, 2008. The Determination of Non-Significance is included as Attachment 6.
2. Conclusion: The applicant and the City have satisfied the requirements of SEPA.

E. GENERAL ZONING CODE CRITERIA

1. Fact: Zoning Code Section 150.65.3 states that a Process IIA application may be approved if:
 - a. It is consistent with all applicable development regulations and, to the extent there is no applicable development regulation, the Comprehensive Plan; and
 - b. It is consistent with the public health, safety, and welfare.
2. Conclusion: With the recommended conditions of approval, the proposal complies with the criteria in Section 150.65.3. It is consistent with all applicable development regulations (See Section II.F) and the Comprehensive Plan (See Section II.G). In addition, it is consistent with the public health, safety, and welfare because it provides for residential development to occur in a manner consistent with the Comprehensive Plan.

F. DEVELOPMENT REGULATIONS

1. Natural Features - Significant Vegetation

a. Facts:

- 1) Regulations regarding the retention of trees can be found in Chapter 95 of the Kirkland Zoning Code. The applicant is required to retain all viable trees on the site following the preliminary plat approval. Tree removal will be considered at the land surface modification and building permit stages of development.
- 2) The applicant has submitted a Tree Plan III, prepared by a certified arborist (See Attachment 7). Specific information regarding the tree density on site and the viability of each tree can be found in Attachment 3, Development Standards.

- #### b. Conclusions:
- The applicant has provided a Tree Plan III with the preliminary plat application and this plan has been reviewed by the City's Arborist. The applicant should retain all viable trees during the construction of plat improvements and residences and comply with the specific recommendations of the City's arborist included in Attachment 3.

2. Right-of-Way Dedication

- #### a. Facts:
- Municipal Code Section 22.28.090 requires the applicant to comply with the requirements of Chapter 110 of the Zoning Code with respect to dedication and improvement of adjacent right-of-way. Zoning Code Section 110.60 states that if a right-of-way abutting the subject property is not wide enough to contain the required improvements, the applicant shall dedicate as right-of-way a strip of land adjacent to the existing right-of-way that is equal to one-half of the needed additional width. The Public Works Director may require the applicant to make land available, by dedication, for new rights-of-way and utility infrastructure if this is reasonably necessary as a result of the new development activity.

Vehicular access to the preliminary plat is proposed from a new public street (NE 84th Street) which will extend from 132nd Avenue NE along the north end of the site. The new street will align with the existing NE 84th Street that currently terminates at the west property line of the site. The new street could connect to the existing street, but the Public Works Department is concerned that this would promote cut-through vehicular traffic by motorists attempting to avoid possible congestion at the NE 85th Street and 132nd Avenue NE intersection.

Comprehensive Plan Policy T-4.4 indicates that the City should minimize the amount of cut-through traffic and the impacts of this traffic when it does occur by the use of various forms of traffic calming techniques.

The Public Works Department believes that the potential impacts resulting from cut-through traffic cannot be effectively mitigated with the complete connection of the street. Therefore, the Public Works Department is recommending that the applicant dedicate 30 feet of right-of-way along the north property line of the site for the extension of NE 84th Street from 132nd Avenue NE to the east property line of proposed Lot 1, with a vehicle turn-around located between Lots 2 and 3, as shown on Attachment 2. Within the dedicated area, the applicant should install 20 feet of pavement, storm drainage, with a

curb, gutter, 4.5 foot wide landscape strip with street trees 30 feet on-center, and a 5 foot wide sidewalk along the south side of the street.

Rather than a public street connection, a pedestrian and emergency vehicle connection between the two street ends should be provided. It is recommended that the applicant provide a 20 foot wide public emergency access and pedestrian easement across Lot 1 from the west end of the new NE 84th Street to the east end of the existing NE 84th Street.

Within this easement, the applicant should install a 5 foot wide sidewalk and a grass-crete or geo-grid system that will allow emergency vehicles to drive over the easement. Bollards or other devices to limit vehicular access to emergency vehicles only should be installed at the east end of the existing NE 84th Street right-of-way as required by the Fire Department.

When the two parcels located directly to the north are redeveloped (Cottage Project and Church site), NE 84th Street will be built out to an R-24 Neighborhood Access Street standard. At present time, this will require the dedication of an additional 15 feet of right-of-way for road improvements. The cottage project (ZON08-00006) is currently proposing this dedication.

Kirkland Zoning Code Section 110.35 requires that a dead end public street over 200 feet in length, being constructed to R-24 Neighborhood Access Street standards, provide a cul-de-sac to serve turn around traffic.

The applicant is proposing a modification to the above requirement. The applicant is proposing and the Public Works Department is recommending that a hammerhead turn-around rather than a cul-de-sac be provided (See Attachment 2a).

Zoning Code Section 110.70.3 (Modifications) states that the City may require or grant a modification to the nature or extent of any required improvement for any of the following reasons:

- a. *If the improvement as required would not match the existing improvements.*
- b. *If unusual topographic or physical conditions preclude the construction of the improvements as required.*
- c. *If other unusual circumstances preclude the construction of the improvements as required.*
- d. *If the City and a neighborhood has agreed upon a modified standard for a particular street (See the Public Works Pre-Approved Plans and Policies Notebook for a description of the Neighborhood Access Street Improvement Modification and Waiver Process).*

As provided above, other unusual circumstances preclude the construction of the standard cul-de-sac as required. Emergency vehicle access will be provided from the west end of the new section of NE 84th Street to the east end of the existing NE 84th Street via a proposed emergency vehicle access easement. This eliminates the need for a standard cul-de-sac or other turn around to serve emergency vehicles. The proposed hammerhead will adequately serve other non-emergency

vehicles (See Public Works Department Development Standards, Attachment 3).

- b. Conclusion: The applicant should follow the requirements set in the Zoning Code regarding required right-of-way dedication, emergency access easement, and related conditions contained in Attachment 3, Development Standards.

3. Access Required

- a. Facts: Municipal Code Section 22.28.110 requires that if vehicular access within a plat is provided by means other than rights-of-way, the plat must establish easements or tracts that will provide the legal right of access to each of the lots served. The City may require that the legal right of access be granted to other adjoining properties in order to provide a safe and efficient circulation system within the City.

In order to provide as much on street parking as possible on NE 84th Street, and reduce the number of driveway aprons along the new section of NE 84th Street, the Public Works Department is recommending that combined driveway aprons be provided for Lots 3 and 4 (unless Lot 3 takes access from the hammerhead) Lots 5 and 6, Lots 7 and 8, and Lots 9 and 10.

Due to the narrow width of Lot 12, and it's proximity to the new street intersection, the driveway to Lot 12 should be located on an access easement across Lot 11, or combine the driveway with the driveway serving Lot 11.

To improve the overall design of the recommended street section on NE 84th Street, the Public Works Department has discussed with the applicant the possibility of meandering the sidewalk and planter strip along portions of the new street. Although the applicant is not required to do so, the Public Works Department is recommending that they work together on a design solution.

- b. Conclusions: The applicant should show the joint driveway easements/access easement described above, and in Attachment 3, Public Works Development Standards, on the recorded plat

G. COMPREHENSIVE PLAN

1. Fact: The subject property is located within the NE 85th Street Subarea. The Land Use Plan on page XV.L-5, Figure NE85-2 designates the subject property for low-density residential, 6 dwelling units per acre (See Attachment 8). The proposed density is 4.88 dwelling units per acre.
2. Conclusion: The proposal is consistent with the Comprehensive Plan designation.

H. DEVELOPMENT REVIEW COMMITTEE

1. Fact: Additional comments and requirements placed on the project are found on the Development Standards Sheet, Attachment 3.
2. Conclusion: The applicant should follow the requirements set forth in Attachment 3.

III. SUBSEQUENT MODIFICATIONS

Modifications to approval may be requested and reviewed pursuant to the applicable modification procedures and criteria in effect at the time of the requested modification.

IV. APPEALS AND JUDICIAL REVIEW

The following is a summary of the deadlines and procedures for appeals. Any person wishing to file or respond to an appeal should contact the Planning Department for further procedural information.

A. APPEALS

Appeal to the City Council:

Section 150.80 of the Zoning Code allows the Hearing Examiner's decision to be appealed by the applicant or any person who submitted written comments or information to the Planning Director. A party who signed a petition may not appeal unless the party also submitted independent written comments or information. The appeal must be in writing and must be delivered, along with any fees set by ordinance, to the Planning Department by 5:00 p.m., _____, fourteen (14) calendar days following the postmarked date of distribution of the Director's decision.

B. JUDICIAL REVIEW

Section 150.130 of the Zoning Code allows the action of the City in granting or denying this zoning permit to be reviewed in King County Superior Court. The petition for review must be filed within 21 calendar days of the issuance of the final land use decision by the City.

V. LAPSE OF APPROVAL

Under Section 22.20.370 of the Subdivision Ordinance, the plat must be recorded with King County within four (4) years following the date of approval, or the decision becomes void; provided, however, that in the event judicial review is initiated, the running of the four years is tolled for any period of time during which a court order in said judicial review proceeding prohibits the recording of the short plat.

VI. APPENDICES

Attachments 1 through 8.

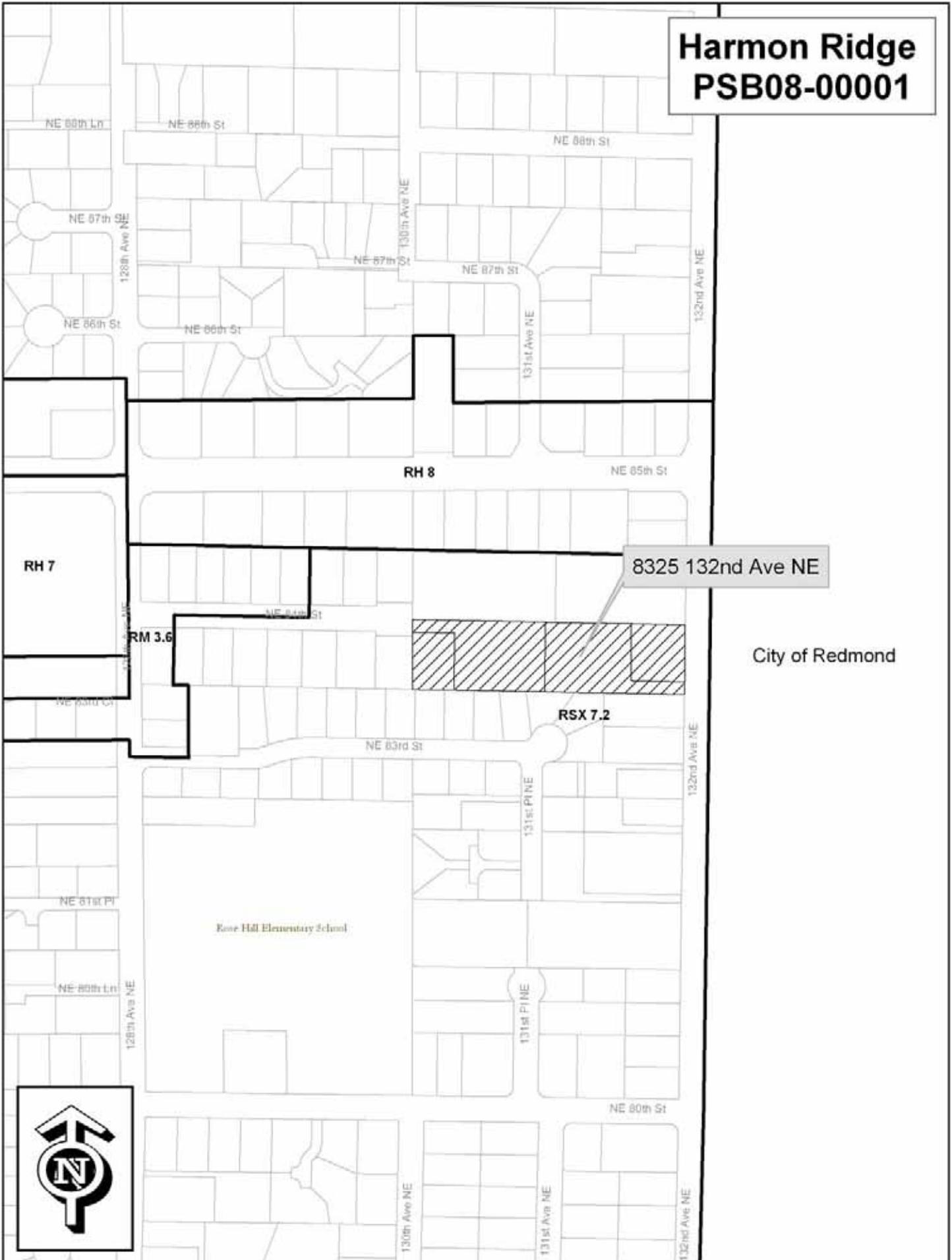
1. Vicinity Map
2. Boundary/Topographic/Tree Survey
3. Development Standards
4. Geotechnical Report prepared by Terra Associates, Inc.
5. Public Comments
 - 5a- Letter from Erica Spellman
 - 5b- Letter from Bonnie Kosmyrna
 - 5c- Letter from Steve Tindall
6. Determination of Non-Significance

7. Arborist Report prepared by Greenforest Incorporated
8. NE 85th Street Subarea Land Use Plan on Page XV.L-5, Figure NE85-2

VII. PARTIES OF RECORD

Ryan Green, Laurel Hill Partners, LLC, 14410 Bel-Red Road, Bellevue, Wa. 98007
Erica Spellman, 13011 NE 83rd Street, Kirkland, Wa. 98033
Bonnie Kosmyna, 13026 NE 83rd Street, Kirkland, Wa. 98033
Steve Tindall, 12859 NE 84th Street, Kirkland, Wa. 98033
Department of Planning and Community Development
Department of Public Works
Department of Building and Fire Services

Harmon Ridge PSB08-00001





CITY OF KIRKLAND

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DEVELOPMENT STANDARDS LIST

File: Harmon Ridge Preliminary Plat, PSB08-00001

Subdivision Standards

22.28.030 Lot Size. Unless otherwise approved in the preliminary subdivision or short subdivision approval, all lots within a subdivision must meet the minimum size requirements established for the property in the Kirkland zoning code or other land use regulatory document.

22.28.130 Vehicular Access Easements. The applicant shall comply with the requirements found in the Zoning Code for vehicular access easements or tracts.

22.28.210 Significant Trees. The applicant shall design the plat so as to comply with the tree management requirements set forth in Chapter 95 of the Kirkland Zoning Code. The Planning Official is authorized to require site plan alterations to retain Type 1 trees. The applicant shall retain all viable trees at the preliminary plat approval stage and all viable trees with the required Land Surface Modification Permit, except for those trees needed to be removed for installation of the plat infrastructure improvements. The applicant shall also retain all viable trees during the development of each single family lot except for those trees required to be removed for the construction of the house and other associated site improvements. A Tree Plan III was submitted with the preliminary plat and has been reviewed by the City's Urban Forester. There are 148 significant trees on the site, 38 of which are Type 1 trees, and 29 of which are Type 2 trees. A minimum of 61 tree credits are required for the subject site. The total number of existing tree credits greatly exceed the minimum required.

There are several groves of native Douglas Fir and Western Red Cedar trees located along the south perimeter of the site. The groves include Tree Numbers 1016-1019, 1022-1025, 1034-1042 (except Tree 1038), 1080-1086, and 1127-1130.

There are also two specimen trees (Tree Numbers 1044 and 1138) that are worthy of retention provided they can be adequately protected during construction.

Tree Number 1002 (Type 1 tree) and Tree Number 1011 (Type 2 tree) are located in the right-of-way and should be retained if possible.

Off-site tree numbers 2001-2006 need to be protected during construction as recommended by the applicant's arborist report.

22.32.010 Utility System Improvements. All utility system improvements must be designed and installed in accordance with all standards of the applicable serving utility.

22.32.030 Stormwater Control System. The applicant shall comply with the construction phase and permanent stormwater control requirements of the Municipal Code.

22.32.050 Transmission Line Undergrounding. The applicant shall comply with the utility lines and appurtenances requirements of the Zoning Code.

22.32.060 Utility Easements. Except in unusual circumstances, easements for utilities should be at least ten feet in width.

27.06.030 Park Impact Fees. New residential units are required to pay park impact fees prior to issuance of a building permit. Please see KMC 27.06 for the current rate. Exemptions and/or credits may apply pursuant to KMC 27.06.050 and KMC 27.06.060. If a property contains an existing unit to be removed, a “credit” for that unit shall apply to the first building permit of the subdivision.

Prior to Recording:

22.16.030 Final Plat - Lot Corners. The exterior plat boundary, and all interior lot corners shall be set by a registered land surveyor.

22.16.040 Final Plat - Title Report. The applicant shall submit a title company certification which is not more than 30 calendar days old verifying ownership of the subject property on the date that the property owner(s) (as indicated in the report) sign(s) the subdivision documents; containing a legal description of the entire parcel to be subdivided; describing any easements or restrictions affecting the property with a description, purpose and reference by auditor’s file number and/or recording number; any encumbrances on the property; and any delinquent taxes or assessments on the property.

22.16.150 Final Plat - Improvements. The owner shall complete or bond all required right-of-way, easement, utility and other similar improvements.

22.32.020 Water System. The applicant shall install a system to provide potable water, adequate fire flow and all required fire-fighting infrastructure and appurtenances to each lot created.

22.32.040 Sanitary Sewer System. The developer shall install a sanitary sewer system to serve each lot created.

22.32.080 Performance Bonds. In lieu of installing all required improvements and components as part of a plat or short plat, the applicant may propose to post a bond, or submit evidence that an adequate security device has been submitted and accepted by the service provider (City of Kirkland and/or Northshore Utility District), for a period of one year to ensure completion of these requirements within one year of plat/short plat approval.

Prior to occupancy:

22.32.020 Water System. The applicant shall install a system to provide potable water, adequate fire flow and all required fire-fighting infrastructure and appurtenances to each lot created.

22.32.040 Sanitary Sewer System. The developer shall install a sanitary sewer system to serve each lot created.

22.32.90 Maintenance Bonds. A two-year maintenance bond may be required for any of the improvements or landscaping installed or maintained under this title.

Zoning Code Standards

85.25.1 Geotechnical Report Recommendations. The geotechnical recommendations contained in the report by dated shall be implemented.

85.25.3 Geotechnical Professional On-Site. A qualified geotechnical professional shall be present on site during land surface modification and foundation installation activities.

95.45 Tree Installation Standards. All supplemental trees to be planted shall conform to the Kirkland Plant List. All installation standards shall conform to Kirkland Zoning Code Section 95.45.

105.10.2 Pavement Setbacks. The paved surface in an access easement or tract shall be set back at least 5 feet from any adjacent property which does not receive access from that easement or tract. An access easement or tract that has a paved area greater than 10 feet in width must be screened from any adjacent property that does not receive access from it. Screening standards are outlined in this section.

105.20 Required Parking. Two parking spaces are required for each single-family home.

110.60.5 Street Trees. All trees planted in the right-of-way must be approved as to species by the City. All trees must be two inches in diameter at the time of planting as measured using the standards of the American Association of Nurserymen with a canopy that starts at least six feet above finished grade and does not obstruct any adjoining sidewalks or driving lanes.

115.25 Work Hours. It is a violation of this Code to engage in any development activity or to operate any heavy equipment between the hours of 8 p.m. and 7 a.m., Monday through Saturday, and all day on Sundays or holidays which are observed by the City, unless written permission is obtained from the Planning Official.

115.40 Fence Location. Fences over 6 feet in height may not be located in a required setback yard. A detached dwelling unit abutting a neighborhood access or collector street may not have a fence over 3.5 feet in height within the required front yard. No fence may be placed within a high waterline setback yard or within any portion of a north or south property line yard, which is coincident with the high waterline setback yard.

115.42 Floor Area Ratio (F.A.R.) limits. Floor area for detached dwelling units is limited to a maximum floor area ratio in low density residential zones. See Use Zone charts for the maximum percentages allowed. This regulation does not apply within the disapproval jurisdiction of the Houghton Community Council.

115.43 Garage Setback Requirements for Detached Dwelling Units in Low Density Zones. The garage must be set back five feet from the remaining portion of the front façade of a dwelling unit if: the garage door is located on the front façade of the dwelling unit; and the lot is at least 50 feet wide at the front setback line; and the garage width exceeds 50 percent of the combined dimensions of the front facades of the dwelling unit and the garage. This regulation does not apply within the disapproval jurisdiction of the Houghton Community Council.

115.75.2 Fill Material. All materials used as fill must be non-dissolving and non-decomposing. Fill material must not contain organic or inorganic material that would be detrimental to the water quality, or existing habitat, or create any other significant adverse impacts to the environment.

115.90 Calculating Lot Coverage. The total area of all structures and pavement and any other impervious surface on the subject property is limited to a maximum percentage of total lot area. See the Use Zone charts for maximum lot coverage percentages allowed. Section 115.90 lists exceptions to total lot coverage calculations including: wood decks; access easements or tracts serving more than one lot that does not abut a right-of-way; detached dwelling unit driveways that are outside the required front yard; grass grid pavers; outdoor swimming pools; and pedestrian walkways. See Section 115.90 for a more detailed explanation of these exceptions.

115.95 Noise Standards. The City of Kirkland adopts by reference the Maximum Environmental Noise Levels established pursuant to the Noise Control Act of 1974, RCW 70.107. See Chapter 173-60 WAC. Any noise, which injures, endangers the comfort, repose, health or safety of persons, or in any way renders persons insecure in life, or in the use of property is a violation of this Code.

115.115.3.g Rockerries and Retaining Walls. Rockeries and retaining walls are limited to a maximum height of four feet in a required yard unless certain modification criteria in this section are met. The combined height of fences and retaining walls within five feet of each other in a required yard is limited to a maximum height of 6 feet, unless certain modification criteria in this section are met.

115.115.3.n Covered Entry Porches. In low density residential zones, covered entry porches on detached dwelling units may be located within 13 feet of the front property line if certain criteria in this section are met. This incentive is not effective within the disapproval jurisdiction of the Houghton Community Council.

115.115.3.o Garage Setbacks. In low density residential zones, garages meeting certain criteria in this section can be placed closer to the rear property line than is normally allowed in those zones.

115.115.5.a Driveway Width and Setbacks. For a detached dwelling unit, a driveway and/or parking area shall not exceed 20 feet in width in any required front yard, and shall not be closer than 5 feet to any side property line unless certain standards are met.

115.135 Sight Distance at Intersection. Areas around all intersections, including the entrance of driveways onto streets, must be kept clear of sight obstruction as described in this section.

145.22.2 Public Notice Signs. Within seven (7) calendar days after the end of the 21-day period following the City's final decision on the permit, the applicant shall remove all public notice signs and return them to the Department of Planning and Community Development. The signs shall be disassembled with the posts, bolts, washer, and nuts separated from the sign board.

Prior to recording:

110.60.6 Mailboxes. Mailboxes shall be installed in the development in a location approved by the Postal Service and the Planning Official. The applicant shall, to the maximum extent possible, group mailboxes for units or uses in the development.

Prior to issuance of a grading or building permit:

85.25.1 Geotechnical Report Recommendations. A written acknowledgment must be added to the face of the plans signed by the architect, engineer, and/or designer that he/she has reviewed the geotechnical recommendations and incorporated these recommendations into the plans.

95.35.2. b. (3) (b) i Tree Protection Techniques. A description and location of tree protection measures during construction for trees to be retained must be shown on demolition and grading plans.

95.35.6 Tree Protection. Prior to development activity or initiating tree removal on the site, vegetated areas and individual trees to be preserved shall be protected from potentially damaging activities. Protection measures for trees to be retained shall include (1) placing no construction material or equipment within the protected area of any tree to be retained; (2) providing a visible temporary protective chain link fence at least 4 feet in height around the protected area of retained trees or groups of trees until the Planning Official authorizes their removal; (3) installing visible signs spaced no further apart than 15 feet along the protective fence stating "Tree Protection Area, Entrance Prohibited" with the City code enforcement phone number; (4) prohibiting excavation or compaction of earth or other damaging activities within the barriers unless approved by the Planning Official and supervised by a qualified professional; and (5) ensuring that approved landscaping in a protected zone shall be done with light machinery or by hand.

Prior to occupancy:

95.50 Tree Maintenance The applicant shall submit a 5-year tree maintenance agreement to the Planning Department to maintain all pre-existing trees designated for preservation and any supplemental trees required to be planted.

95.50.3 Maintenance of Preserved Grove The applicant shall provide a legal instrument acceptable to the City ensuring the preservation in perpetuity of approved groves of trees to be retained.

107.90 Maintenance Bonds. The applicant shall establish a two-year maintenance bond to ensure maintenance of the storm water system.

110.75 Bonds. The City may require or permit a bond to ensure compliance with any of the requirements of the Required Public Improvements chapter.

CITY OF KIRKLAND
123 FIFTH AVENUE, KIRKLAND, WASHINGTON 98033-6189 (425) 587-3225

Date:
11/12/2008

DEVELOPMENT STANDARDS
CASE NO.: PSB08-00001
PCD FILE NO.:PSB08-00001

Harmon Ridge 12 Lot Plat
Project Address: 8325 132nd Ave. NE
Date: September 11, 2008 (revised)

Public Works Staff Contacts
Land Use and Pre-Submittal Process:
Rob Jammerman, Development Engineering Manager
Phone: 425-587-3845 Fax: 425-587-3807
E-mail: rjammer@ci.kirkland.wa.us

Building and Land Surface Modification (Grading) Permit Process:
John Burkhalter, Development Engineering Supervisor
Phone: 425-587-3853 Fax: 425-587-3807
E-mail: jburkhal@ci.kirkland.wa.us

General Conditions:

1. All public improvements associated with this project including street and utility improvements, must meet the City of Kirkland Public Works Pre-Approved Plans and Policies Manual. A Public Works Pre-Approved Plans and Policies manual can be purchased from the Public Works Department, or it may be retrieved from the Public Works Department's page at the City of Kirkland's web site at www.ci.kirkland.wa.us.
2. This project will be subject to Public Works Permit and Connection Fees. At the pre-application stage, the fees can only be estimated. It is the applicant's responsibility to contact the Public Works Department by phone or in person to determine the fees. The fees can also be review the City of Kirkland web site at www.ci.kirkland.wa.us. The applicant should anticipate the following fees:
 - o Water and Sewer connection Fees (paid with the issuance of a Building Permit)
 - o Side Sewer Inspection Fee (paid with the issuance of a Building Permit)
 - o Septic Tank Abandonment Inspection Fee
 - o Water Meter Fee (paid with the issuance of a Building Permit)
 - o Right-of-way Fee
 - o Review and Inspection Fee (for utilities and street improvements).
 - o Traffic Impact Fee (paid with the issuance of Building Permit). For additional information, see notes below.
3. All street and utility improvements shall be permitted by obtaining a Land Surface Modification (LSM) Permit. If a Building Permit for a new house is applied for prior to applying for the LSM Permit, the Building Permit will not be issued until a complete LSM Permit is applied for.
4. The subdivision can be recorded in advance of installing all the required street and utility improvements by posting a performance security equal to 130% of the value of work. Contact the Development Engineer assigned to this project to assist with this process.

5. The proposed project passed traffic concurrency. Per Section 25.10.020 Procedures of the KMC, the Concurrency Test Notice will expire in one year (November 9, 2008) unless a development permit and certificate of concurrency are issued or an extension is granted.
6. Building Permits associated with this proposed project will be subject to the traffic impact fees per Chapter 27.04 of the Kirkland Municipal Code. The impact fees shall be paid prior to issuance of the Building Permit(s).
7. Any existing single family homes within this project which are demolished will receive a Traffic Impact Fee credit. This credit will be applied to the first Building Permit that is applied for within the subdivision (and subsequent Building Permits if multiple houses are demolished). The credit amount for each demolished single family home will be equal to the most currently adopted Traffic Impact Fee schedule.
8. All civil engineering plans which are submitted in conjunction with a building, grading, or right-of-way permit must conform to the Public Works Policy titled ENGINEERING PLAN REQUIREMENTS. This policy is contained in the Public Works Pre-Approved Plans and Policies manual.
9. All street improvements and underground utility improvements (storm, sewer, and water) must be designed by a Washington State Licensed Engineer; all drawings shall bear the engineers stamp.
10. All plans submitted in conjunction with a building, grading or right-of-way permit must have elevations which are based on the King County datum only (NAVD 88).
11. A completeness check meeting is required prior to submittal of any Building Permit applications.
12. The required tree plan shall include any significant tree in the public right-of-way along the property frontage.
13. All subdivision recording mylar's shall include the following note:

Utility Maintenance: Each property owner shall be responsible for maintenance of the sanitary sewer or storm water stub from the point of use on their own property to the point of connection in the City sanitary sewer main or storm water main. Any portion of a sanitary sewer or surface water stub, which jointly serves more than one property, shall be jointly maintained and repaired by the property owners sharing such stub. The joint use and maintenance shall "run with the land" and will be binding on all property owners within this subdivision, including their heirs, successors and assigns.

Public Right-of-way Sidewalk and Vegetation Maintenance: Each property owner shall be responsible for keeping the sidewalk abutting the subject property clean and litter free. The property owner shall also be responsible for the maintenance of the vegetation within the abutting landscape strip. The maintenance shall "run with the land" and will be binding on all property owners within this subdivision, including their heirs, successors and assigns.

Sanitary Sewer Conditions:

1. The applicant shall extend the existing public sewer system to provide sanitary sewer service for each lot within the proposed project. This project shall install the following 8-inch sewer main extensions:
 - " Extend an 8-inch sewer main from the new sewer main approximately 165 ft to the north in 132nd Ave. NE, south along 132nd Ave. NE to the south property limits.
 - " Extend sewer mains along the new NE 84th Street and provide a side sewer stub to each lot. Some of the lots will need to be served by a sewer extension in NE 84th St. from the west and the rest of the lots will need to be served by a sewer extension in NE 84th St. from the east (connected to the said sewer main extension in 132nd Ave. NE)
 - " A Sanitary Sewer Reimbursement Agreement may be recorded with the sewer extensions

- " All sewer extensions shall be terminated with a sewer manhole.
- 2. The existing septic systems shall be abandoned per City standards.

Water System Conditions:

1. Loop a new 8-inch water main along the new NE 84th St. from the east end of the existing NE 84th St to 132nd Ave. NE.
2. A water reimbursement agreement may be filed for the water main extension.
3. Provide a separate 1" minimum water service from the water main to the meter for each lot; City of Kirkland will set the water meter.
4. Abandon all existing water services at the water main.
5. Provide fire hydrants per the Fire Departments requirements.
6. The available fire flow at this project location is approximately 1800 gpm (after the water main loop is installed).

Surface Water Conditions:

1. Provide temporary and permanent storm water control per the 1998 King County Surface Water Design Manual. Because this site drains to two different drainage basins, two detention and water quality systems will be required. Also, Level II detention standards will be required.
2. It doesn't appear that any work within an existing ditch will be required, however the developer has been given notice that the Army Corps of Engineers (COE) has asserted jurisdiction over upland ditches draining to streams. Either an existing Nationwide COE permit or an Individual COE permit may be necessary for work within ditches, depending on the project activities. If any work within an existing ditch is necessary, applicants should obtain the applicable COE permit; information about COE permits can be found at: U.S. Army Corps of Engineers, Seattle District Regulatory Branch
http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=mainpage_NWPs
 Specific questions can be directed to: Seattle District, Corps of Engineers, Regulatory Branch, CENWS-OD-RG, Post Office Box 3755, Seattle, WA 98124-3755, Phone: (206) 764-3495
3. This project disturbs greater than one acre, the applicant is responsible to apply for a Construction Stormwater General Permit from Washington State Dept. of Ecology. Specific permit information can be found at the following website: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/> Among other requirements, this permit requires the applicant to prepare a Storm Water Pollution Prevention Plan (SWPPP) and identify a Certified Erosion and Sediment Control Lead (CESCL) prior to the start of construction. The CESCL shall attend the City of Kirkland Public Works Department pre-construction meeting with a completed SWPPP.
4. Provide an erosion control plan with Building or Land Surface Modification Permit application. The plan shall be in accordance with the 1998 King County Surface Water Design Manual.
5. Provide collection and conveyance of right-of-way storm drainage
6. As part of the roof and driveway drainage conveyance system for each new house, each lot shall contain a 10 ft. long (min.) perforated tight line connection with an overflow to the public storm drain system (COK Plan No. CK-D.39). The tight line connections shall be installed with the individual new houses.
7. Provide a separate storm drainage connection for each lot.

8. All roof and driveway drainage must be tight-lined to the storm drainage system.
9. The Public Works Department encourages this development to consider Low Impact Design elements when designing their drainage system. Use of pervious concrete, infiltration systems, and rain gardens may significantly reduce the size of the detention systems.

Street and Pedestrian Improvement Conditions:

1. The subject property abuts 132nd Ave. NE (an Arterial type street) and the new NE 84th St extension (an R-24 Neighborhood Access type street). Zoning Code sections 110.10 and 110.25 require the applicant to make half-street improvements in rights-of-way abutting the subject property. Section 110.30-110.50 establishes that this street must be improved with the following:

132nd Ave. NE

- A. Replace any broken curb and gutter
- B. Remove the existing sidewalk and install a new 5 ft wide sidewalk with a standard 4.5 ft wide landscape strip. Retain existing street trees where feasible and plant new ones where necessary so that 30 ft on-center spacing is achieved.

NE 84th Street:

The new NE 84th Street that will run along the north property line of this property will directly align with the existing NE 84th Street to the west. The new NE 84th Street could be connected to the existing street, but the Public Works Department is concerned that this would promote cut-through vehicular traffic to avoid the NE 85th St/132nd Ave. NE intersection.

Policy T-4.4 of the Comprehensive Plan suggests that we should minimize bypass traffic and safety impacts on neighborhood streets by limiting cut-through traffic onto neighborhood streets from nearby congested arterials or collector streets.

Because the potential cut-through traffic cannot be effectively mitigated, Public Works recommends that the new street be designed with a pedestrian, bicycle, and emergency vehicle connection only.

This street will be built out to an R-24 Neighborhood Access Street when the two parcels directly to the north redevelop. The improvements required as a condition of this plat are as follows:

- A. Dedicate a minimum of 30 ft of public right-of-way for the public street.
- B. Install a minimum of 20 ft minimum in width of asphalt paving along the new public street.
- C. Install storm drainage collection and conveyance.
- D. Along the south side of the street, install vertical curb and gutter, a 4.5 ft wide landscape strip with street trees 30 ft. on-center and a 5 ft. wide sidewalk. The curb, gutter, and sidewalk shall extend across the west end of the new street with a driveway apron for lot 1.
- E. Install "NO PARKING ANYTIME" signs along the north side of the street
- F. The public street shall extend to the east property line of lot 1 and a vehicular turn-around shall be installed between lots 2 and 3 as shown on the plans. A standard emergency vehicle cul-de-sac turn-around is not required because emergency vehicles will be able to drive through to the existing improved NE 84th St. to the west (see next condition).
- G. A 20 ft wide public emergency access and pedestrian easement shall be granted across lot 1 from the west end of the new NE 84th St to the east end of the existing NE 84th St. Within this easement install a 5 ft wide concrete sidewalk (6-inch thick because emergency vehicles may drive on it and grass-crete or geo-grid paving system that will allow emergency vehicles to pass over the easement. Install bollards or other devices to impede general vehicular use as necessary and as approved by the Fire Department.
- H. At the east end of the existing NE 84th St, install new curb and gutter along the southeast corner of the existing cul-de-sac over to the church driveway. Install storm drainage structures as necessary.
- I. A slope and/or construction easement may be needed from the properties to the north to facilitate the installation of the street improvements.
- J. Due to the narrow width of lot 12 and it's proximity to the new street intersection, the driveway to lot 12 shall be via an access easement across lot 11 or combined with the driveway serving lot 11.
- K. In order to provide as much on-street parking as possible and reduce the number of driveway

aprons, lots 3 & 4 (unless lot 3 takes access from the hammerhead), 5 & 6, 7 & 8, and 9 & 10 should have combined driveway aprons. The aprons can be 30 ft in width (20 ft is standard for one lot).

L. In conjunction with the combined driveways, the developer should work with the Public Works Department to develop a plan for a meandering sidewalk in-lieu of a straight sidewalk and landscape strip where feasible. The meandering sidewalk will be adjacent the curb through the driveway aprons and then meander back 4.5 ft with a standard landscape strip between the driveway aprons.

2. A 2-inch asphalt street overlay will be required where more than three utility trench crossings occur with 150 lineal ft. of street length or where utility trenches parallel the street centerline. Grinding of the existing asphalt to blend in the overlay will be required along all match lines.

3. The driveway for each lot shall be long enough so that parked cars do not extend into the access easement or right-of-way (20 ft. min.)

4. All street and driveway intersections shall not have any visual obstructions within the sight distance triangle. See Public Works Pre-approved Policy R.13 for the sight distance criteria and specifications.

5. Prior to the final of the building or grading permit, pay for the installation of stop and street signs at the new intersections.

6. Install new monuments in 132nd Ave. NE at the new intersection.

7. It shall be the responsibility of the applicant to relocate any above-ground or below-ground utilities which conflict with the project associated street or utility improvements.

8. Underground all new and existing on-site and street frontage overhead utility lines. The existing PSE high voltage lines can be left overhead as it is not technically feasible to underground them.

9. New street lights are required per Puget Power design and Public Works approval. Contact the INTO Light Division at PSE for a lighting analysis. If lighting is necessary, design must be submitted prior to issuance of a grading or building permit.

FIRE DEPARTMENT CONDITIONS

One additional hydrant is required on the 132nd Avenue NE ROW, across from the east entrance to the project. The new hydrant as well as the existing hydrant on NE 84th shall be equipped with 5" Stortz fittings.

The fire flow requirement for this project is 1,500 gpm. The extension of the main from NE 84th to 132nd Avenue NE should be able to provide this amount of fire flow.

Access will be as determined by Public Works.

BUILDING DEPARTMENT COMMENTS

Building permits must comply with the International Building, Residential and Mechanical Codes and the Uniform Plumbing Code as adopted and amended by the State of Washington and the City of Kirkland.

Structure must comply with Washington State Energy Code; and the Washington State Ventilation and Indoor Air Quality Code.

Plumbing meter and service line shall be sized in accordance with the currently adopted edition of the UPC.

Demolition permits required for removal of existing structures.

Prior to recording of the subdivision, the existing structures must be removed due to their proximity to proposed lot lines.

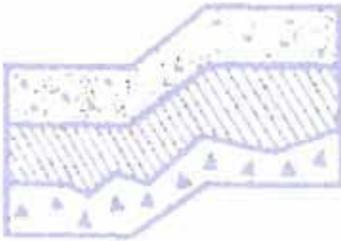
Geotechnical report required to address development activity. Report must be prepared by a Washington State licensed Professional Engineer. Recommendations contained within the report shall be incorporated into the design of the Short Plat and subsequent structures.

Prior to issuance of Building, Demolition or Landsurface Modification permit applicant must submit a proposed rat baiting program for review and approval. Kirkland Municipal Ordinance 9.04.050

GEOTECHNICAL REPORT

Harmon Ridge
132nd Avenue NE and NE 84th Street
Kirkland, Washington

Project No. T-6154



Terra Associates, Inc.

Prepared for:

Pacific Properties
Bellevue, Washington

January 25, 2008

TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

January 25, 2008
Project No. T-6154

Mr. Ryan Green
Pacific Properties
14410 Bel-Red Road
Bellevue, Washington 98007

Subject: Geotechnical Report
Harmon Ridge
132nd Avenue NE and NE 84th Street
Kirkland, Washington

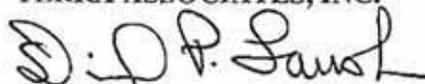
Dear Mr. Green:

As requested, we have conducted a geotechnical engineering study for the subject project. The attached report presents our findings and recommendations for the geotechnical aspects of project design and construction. Our field exploration indicates the site is underlain by weathered and unweathered glacial till generally consisting of medium dense to very dense silty sand with varying amounts of gravel. We did not observe groundwater seepage in the test pits excavated at the site.

In our opinion, the soil and groundwater conditions are suitable for the planned development. Undisturbed native soil subgrades or compacted structural fill placed above these native soils will provide suitable bearing for standard spread footing foundations, floor slabs, and pavements.

Detailed recommendations addressing these issues and other geotechnical design considerations are presented in the attached report. We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,
TERRA ASSOCIATES, INC.



David P. Sausch, L.G.S., S.E.
Engineering Geologist

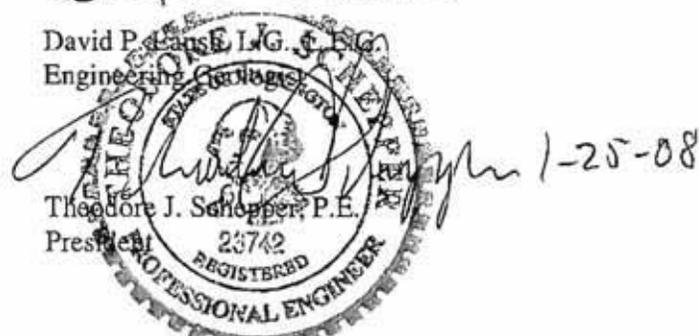


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**Geotechnical Report
Harmon Ridge
132nd Avenue NE and NE 84th Street
Kirkland, Washington**

1.0 PROJECT DESCRIPTION

The project will consist of developing the property with 12 residential building lots along with associated paved access and utility improvements. A preliminary grading and utility plan prepared by Core Design shows the property will be developed with a new street connecting NE 84th Street and 132nd Avenue NE along the northern property boundary with the 12 lots spaced south and adjacent the roadway. Based on the preliminary plan, site grading will be minor with two- to six-foot cuts and fills required to achieve building pad and roadway subgrade elevations. Walls are also being proposed to face vertical grade transitions along the western and southern property boundary.

Current design concepts for stormwater management include directing development stormwater to two detention vaults located in the western and eastern portions of the new access road. The western vault will be located in front of Lots 3, 4, and 5 with dimensions of 15 feet wide, 150 feet long, and 7 feet deep. The eastern vault will be located in front of Lots 9 and 10 with the dimensions of 20 feet wide, 80 feet long, and 7 feet deep.

We expect the residential structures will be one- to two-story, wood-framed buildings with their main floors framed over a crawl space or constructed at grade. Attached garages will likely have their floors constructed at grade. Foundation loads should be light, in the range of 1 to 2 kips per foot for bearing walls and 20 to 25 kips for isolated columns.

The recommendations contained in the following sections of this report are based on our understanding of these design features. If actual features vary or changes are made, we should review them in order to modify our recommendations, as required. We should review final design drawings and specifications to verify that our recommendations have been properly interpreted and incorporated into project design.

2.0 SCOPE OF WORK

Our scope of work was completed in accordance with our authorized proposal dated October 23, 2007. On November 6, 2007, we observed soil conditions at 6 test pits excavated at the site to maximum depths of 8 to 10 feet below existing surface grades. Using the information obtained from the subsurface exploration along with results of laboratory testing on soil samples, we performed analyses to develop geotechnical recommendations for project design and construction. Specifically, this report addresses the following:

- Soil and groundwater conditions
- Geologic hazards
- Site preparation and grading
- Excavations
- Foundation design criteria

January 25, 2008
Project No. T-6154

- Floor slabs
- Lateral earth pressures for detention vault and wall designs
- Subsurface drainage
- Utilities
- Pavements

It should be noted that the recommendations outlined in this report regarding drainage are associated with soil strength, design earth pressures, erosion, and stability. Design and performance issues with respect to moisture as it relates to the structure environment (i.e., humidity, mildew, mold) are beyond Terra Associates' purview. A building envelope specialist or contractor should be consulted to address these issues, as needed.

3.0 SITE CONDITIONS

3.1 Surface

The project site is a combination of 4 tax parcels measuring a combined 2.4 acres. Three of the parcels are occupied by single-family homes. Access to the existing western residence is off NE 84th Street, and access to the 2 residences on the eastern portion is off 132nd Avenue NE. The approximate location of the site is shown on Figure 1.

Site topography is relatively flat with a gentle negative slope to the northwest. The properties are bordered by single-family homes to the west, south, and northeast, a church to the northwest, and 132nd Avenue NE to the east. A concrete retaining wall supports a vertical grade transition on the western residence driveway from the elevated southwestern site corner. The wall is close to eight feet tall. Vegetation on the parcels generally consists of grass lawns with northwest plants and trees.

3.2 Soils

In general, soils we observed in the test pits consisted of 3 to 12 inches of sod and topsoil overlying weathered and unweathered horizons of glacial till consisting primarily of silty sand with gravel. The weathered glacial till underlying the organic surface soils extends to depths of about 1.5 to 3 feet. The weathered till is generally reddish-brown to mottled brown, and loose to medium dense. We also observed one to two feet of fill soil composed of brown to grayish-brown silty sand in Test Pits TP-1 and TP-6. Underlying the fill and weathered soils is unweathered grayish-brown to gray silty sand with gravel, (glacial till). The glacial till was observed in a moist, cemented, very dense condition. All of the test pits were terminated in very dense glacial till at depths of eight to ten feet below the existing ground surface.

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The *Geologic Map of the Kirkland Quadrangle, Washington*, by James P. Minard (1983), indicates the site is underlain by Vashon glacial till consisting of a compact mixture of silt, sand, and gravel. This mapping is consistent with our observations.

Detailed descriptions of the subsurface conditions encountered in the test pits are presented in the Test Pit Logs in Appendix A. The approximate test pit locations are shown on Figure 2.

3.3 Groundwater

We did not observe groundwater seepage in any of the test pits excavated on November 6, 2007. The weathered glacial till soils were found to be occasionally mottled, indicating that a seasonal perched water table develops at times during the wet winter season on the relatively impermeable glacial till. Perched groundwater levels and flow rates will fluctuate seasonally and typically reach their highest levels during and shortly following the wet winter months (October through May).

4.0 GEOLOGIC HAZARDS

4.1 Erosion

The soils encountered on the site are classified as Alderwood gravelly sandy loam (AgC) by the Soil Conservation Service (SCS). With the existing slope gradients over most of the site, these soils will have a slight to moderate potential for erosion when exposed. Appropriate erosion protection measures should be in place concurrent with the start of grading activities on the site.

4.2 Seismic

Based on the results of our field exploration and our knowledge of the area geology, per Chapter 16 of the 2003 International Building Code (IBC), site class "C" should be used in structural design.

Liquefaction is a phenomenon where there is a reduction or complete loss of soil strength due to an increase in water pressure induced by vibrations. Liquefaction mainly affects geologically recent deposits of loose, fine-grained sand and silty sand that are below the groundwater table. Soils of this nature derive their strength from intergranular friction. The generated water pressure or pore pressure essentially separates the soil grains and eliminates this intergranular friction; thus, eliminating the soil's strength.

Based on the soil and groundwater conditions we encountered, in our opinion, there is no risk for liquefaction to occur at this site during an earthquake.

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5.0 DISCUSSION AND PRELIMINARY RECOMMENDATIONS

5.1 General

Based on our study, in our opinion, there are no geotechnical constraints that would preclude development, as planned. The structures can be supported on conventional spread footings bearing on competent native soils or on structural fill placed above these native soils. Floor slabs and pavements can be similarly supported.

The native soils encountered at the site contain a sufficient amount of soil fines (silt-sized particles) that will make them difficult to compact as structural fill when too wet or dry. The ability to use native soil from site excavations as structural fill will depend on its moisture content and the prevailing weather conditions at the time of construction. If grading activities will take place during the wet winter months, the owner should be prepared to import clean granular material for use as structural fill and backfill.

Detailed recommendations regarding these issues and other geotechnical design considerations are provided in the following sections of this report. These recommendations should be incorporated into the final design drawings and construction specifications.

5.2 Site Preparation and Grading

To prepare the site for construction, all vegetation, organic surface soils, and other deleterious materials should be stripped and removed from the site. Based on our test pits, stripping depths ranging from 3 to 12 inches should be expected to remove organic surficial soils. Organic topsoil will not be suitable for use as structural fill, but may be used for limited depths in nonstructural areas. In the existing developed portions of the site, demolition of existing structures should include removal of existing foundations, floor slabs, underground septic systems, and other buried utilities. Abandon utility pipes that fall outside of new building areas can be left in place provided they are sealed to prevent intrusion of groundwater seepage or soil.

Once clearing and stripping operations are complete, cut and fill operations can be initiated to establish desired grades. Prior to placing fill, all exposed surfaces should be proofrolled using a large, heavy, vibratory roller to compact the loose upper soil and determine if any isolated soft and yielding areas are present. Proofrolling should also be performed in cut areas that will provide direct support for new construction. If excessively yielding areas are observed and cannot be stabilized in place by compaction, the affected soils should be excavated and removed to firm bearing and grade restored with new structural fill. If the depth of excavation to remove unstable soils is excessive, use of a geotextile reinforcing/separation fabric, such as Mirafi 500X or equivalent, can be considered in conjunction with structural fill. Our experience has shown that, in general, a minimum of 18 inches of a clean, granular structural fill over the geotextile fabric should establish a stable bearing surface.

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The vast majority of soils at the site contain a significant amount of fines, and will be difficult to compact as structural fill when too wet. Accordingly, the ability to use native soils from site excavations as structural fill will depend on their moisture content and the prevailing weather conditions when site grading activities take place. Native soils that are too wet to properly compact could be dried by aeration during dry weather conditions or mixed with an additive such as cement, cement kiln dust (CKD), or lime to stabilize the soil and facilitate compaction. If an additive is used, additional Best Management Practices (BMPs) for its use will need to be incorporated into the Temporary Erosion and Sedimentation Control plan (TESC) for the project.

If grading activities are planned during the wet winter months, or if they are initiated during the summer and extend into fall and winter, the owner should be prepared to import wet weather structural fill. For this purpose, we recommend importing a granular soil that meets the following grading requirements:

U.S. Sieve Size	Percent Passing
6 inches	100
No. 4	75 maximum
No. 200	5 maximum*

*Based on the 3/4-inch fraction.

Prior to use, Terra Associates, Inc. should examine and test all materials imported to the site for use as structural fill.

Structural fill should be placed in uniform loose layers not exceeding 12 inches and compacted to a minimum of 95 percent of the soil's maximum dry density, as determined by American Society for Testing and Materials (ASTM) Test Designation D-698 (Standard Proctor). The moisture content of the soil at the time of compaction should be within two percent of its optimum, as determined by this ASTM standard. In nonstructural areas, the degree of compaction can be reduced to 90 percent. Structural fill in utility easements and County rights-of-way must conform to the material and compaction specifications of the applicable jurisdiction.

5.3 Excavations

All excavations at the site associated with confined spaces, such as utility trenches and retaining walls, must be completed in accordance with local, state, or federal requirements. Based on current Washington Industrial Safety Health Act (WISHA) regulations, the upper loose to medium dense soils at the site would be classified as Type C soils. The deeper dense to very dense glacial till soils are classified as Type A soils. Accordingly, for temporary excavations less than 20 feet in depth, the side slopes in Type C soils should be laid back at a slope inclination no steeper than 1.5:1 (Horizontal:Vertical). Excavations less than 20 feet in depth in Type A soils can be laid back at a slope inclination of 0.75:1 or flatter. If the excavation in Type A soils is less than 8 feet in depth, then the bottom 3 ½ feet can be vertical with upper slopes inclined at 0.75:1. If there is insufficient room to complete the excavations in this manner, or if excavations greater than 20 feet deep are planned, the contractor may need to use temporary shoring to support the excavations.

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Groundwater seepage into site excavations should be expected, particularly during and shortly after the wet winter season. The rate of flow and volume is expected to be low. The contractor should be prepared to dewater excavations as required to prevent impacts to excavation stability and maintain relatively dry working conditions. We expect dewatering using conventional sump pumps along with collection trenches to direct intercepted groundwater seepage to the sump locations would be adequate for this purpose.

This information is provided solely for the benefit of the owner and other design consultants, and should not be construed to imply that Terra Associates, Inc. assumes responsibility for job site safety. It is understood that job site safety is the sole responsibility of the project contractor.

5.4 Foundations

Residential structures may be supported on conventional spread footing foundations bearing on competent native soils, or on structural fills placed above these native soils. Foundation subgrade should be prepared as recommended in Section 5.2 of this report.

Perimeter foundations exposed to the weather should bear at a minimum depth of 1.5 feet below final exterior grades for frost protection. Interior foundations can be constructed at any convenient depth below the floor slab. We recommend designing foundations bearing on a competent native soil subgrade or structural fill for a net allowable bearing capacity of 2,500 pounds per square foot (psf). For short-term loads, such as wind and seismic, a one-third increase in this allowable capacity can be used. With the anticipated loads and these bearing stresses applied, building settlements should be less than one-half inch total and one-quarter inch differential.

For designing foundations to resist lateral loads, a base friction coefficient of 0.35 can be used. Passive earth pressures acting on the sides of the footings can also be considered. We recommend calculating this lateral resistance using an equivalent fluid weight of 350 pounds per cubic foot (pcf). We recommend not including the upper 12 inches of soil in this computation because it can be affected by weather or disturbed by future grading activity. This value assumes the foundations will be constructed neat against competent soil and backfilled with structural fill, as described in Section 5.2 of this report. The recommended friction coefficient and passive earth pressure values include a safety factor of 1.5.

5.5 Floors Slabs

Slab-on-grade floors may be supported on subgrades prepared as recommended in Section 5.2 of this report. Immediately below the floor slabs, we recommend placing a four-inch thick capillary break layer of clean, free-draining, coarse sand or fine gravel that has less than three percent passing the No. 200 sieve. This material will reduce the potential for upward capillary movement of water through the underlying soil and subsequent wetting of the floor slabs.

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The capillary break layer will not prevent moisture intrusion through the slab caused by water vapor transmission. Where moisture by vapor transmission is undesirable, such as covered floor areas, a common practice is to place a durable plastic membrane on the capillary break layer and then cover the membrane with a layer of clean sand or fine gravel to protect it from damage during construction, and aid in uniform curing of the concrete slab. It should be noted that if the sand or gravel layer overlying the membrane is saturated prior to pouring the slab, it will be ineffective in assisting in uniform curing of the slab, and can actually serve as a water supply for moisture transmission through the slab that could affect floor coverings. Therefore, in our opinion, covering the membrane with a layer of sand or gravel should be avoided if floor slab construction occurs during the wet winter months and the layer cannot be effectively drained. We recommend floor designers and contractors refer to the 2003 American Concrete Institute (ACI) Manual of Concrete Practice, Part 2, 302.1R-96, for further information regarding vapor barrier installation below slab-on-grade floors.

5.6 Lateral Earth Pressure for Detention Vault and Wall Designs

Stormwater Detention Vault

Soils observed in the vault locations consist of silty sand with gravel (glacial till). Groundwater seepage was not observed. For design of the vault foundation, with bearing established on dense undisturbed glacial till, an allowable bearing capacity of 6,000 psf can be used.

The magnitude of earth pressure development on below-grade walls, such as detention vaults or site retaining walls, will partly depend on the quality of the wall backfill. We recommend placing and compacting wall backfill as structural fill. Wall backfill below structurally loaded areas, such as pavements or floor slabs, should be compacted to a minimum of 95 percent of its maximum dry density, as determined by ASTM Test Designation D-698 (Standard Proctor). In unimproved areas, the relative compaction can be reduced to 90 percent. To guard against hydrostatic pressure development, drainage must be installed behind the wall. A typical wall drainage detail is shown on Figure 3.

With wall backfill placed and compacted as recommended and drainage properly installed, unrestrained walls can be designed for an active earth pressure equivalent to a fluid weighing 35 pcf. For restrained walls, an additional uniform lateral pressure of 100 psf should be included. For evaluation of wall performance under seismic loading, an additional seismic earth pressure equivalent to $8H$ psf, where H is the height of the below-grade portion of the wall in feet, can be used. These values assume a horizontal backfill condition and that no other surcharge loading, such as traffic, sloping embankments, or adjacent buildings, will act on the wall. If such conditions exist, then the imposed loading must be included in the wall design. Friction at the base of the wall foundation and passive earth pressure will provide resistance to these lateral loads. Values for these parameters are provided in Section 5.4 of this report.

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MSE Retaining Walls

Site retaining walls constructed using mechanically stabilized earth (MSE) faced with segmental blocks may be used to accommodate vertical grade transitions in several areas of the site. Expected maximum exposed wall heights will be in the two- to six-foot range. For design of these wall systems, the following soil parameters can be used:

Foundation

Unit Weight – 135 pcf
Soil Friction – 38 degrees
Cohesion – 100 psf

Reinforced and Retained Soil

Unit Weight – 130 pcf
Soil Friction – 34 degrees
Cohesion – 0

A typical MSE wall faced with segmental blocks is shown on attached Figure 4.

5.7 Drainage

Surface

Final exterior grades should promote free and positive drainage away from the building areas. We recommend providing a gradient of at least three percent for a minimum distance of ten feet from the building perimeter, except in paved locations. In paved locations, a minimum gradient of two percent should be provided, unless provisions are included for collection and disposal of surface water adjacent to the structure.

Subsurface

We recommend installing a continuous drain along the outside lower edge of the perimeter building foundations. The foundation drains should be tightlined to an approved point of controlled discharge independent of the roof drain system. Subsurface drains must be laid with a gradient sufficient to promote positive flow to the point of discharge. All drains should be provided with cleanouts at easily accessible locations. These cleanouts should be serviced at least once every year.

5.8 Utilities

Utility pipes should be bedded and backfilled in accordance with American Public Works Association (APWA) specifications or local jurisdictional requirements. As a minimum, trench backfill should be placed and compacted as structural fill, as described in Section 5.2 of this report. As noted, successful use of on-site soils as fill will require close moisture control. When moisture cannot be controlled to facilitate proper compaction, trench backfill should consist of an imported granular soil that meets the grading requirements for wet weather fill as presented in Section 5.2 of this report.

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5.9 Pavements

Pavements should be constructed on subgrades prepared as described in Section 5.2 of this report. Regardless of the relative compaction achieved, the subgrade must be firm and relatively unyielding before paving. The subgrade should be proofrolled with heavy construction equipment to verify this condition.

The pavement section is dependent on the supporting capability of the subgrade soils and the traffic conditions to which it will be subjected. We understand that traffic will mainly consist of light passenger and bus traffic, with only occasional heavy traffic in the form of moving trucks and trash removal vehicles.

Based on this information, with a stable subgrade prepared as recommended, we recommend the following pavement sections:

- Two inches of hot mix asphalt (HMA) over four inches of crushed rock base (CRB)
- Two inches of HMA over three inches of asphalt-treated base (ATB)

The paving materials used should conform to the Washington State Department of Transportation (WSDOT) specifications for ½ class HMA, ATB, and CRB.

Long-term pavement performance will depend on surface drainage. A poorly-drained pavement section will be subject to premature failure as a result of surface water infiltrating into the subgrade soils and reducing their supporting capability. To improve performance, we recommend surface drainage gradients of at least two percent. Some longitudinal and transverse cracking of the pavement surface should be expected over time. Regular maintenance should be planned to seal cracks when they occur.

6.0 ADDITIONAL SERVICES

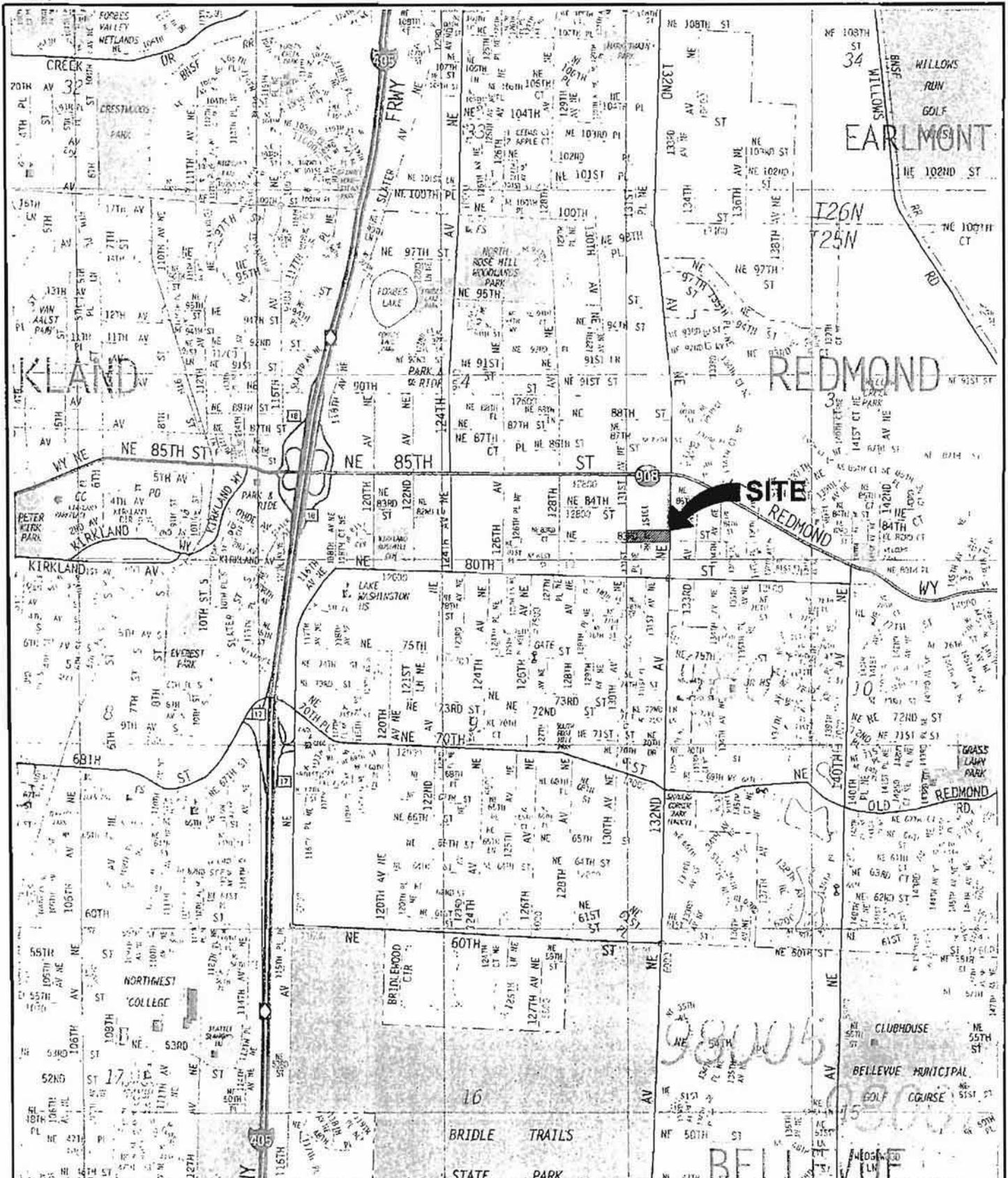
Terra Associates, Inc. should review the final project designs and specifications in order to verify that earthwork and foundation recommendations have been properly interpreted and incorporated into project design. We should also provide geotechnical services during construction to observe compliance with our design concepts, specifications, and recommendations. This will allow for expedient design changes if subsurface conditions differ from those anticipated prior to the start of construction.

7.0 LIMITATIONS

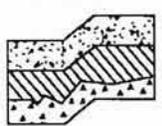
We prepared this report in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the Harmon Ridge project in Kirkland, Washington. This report is for the exclusive use of Pacific Properties and its authorized representatives.

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The analyses and recommendations presented in this report are based on data obtained from the on-site test pits. Variations in soil conditions can occur, the nature and extent of which may not become evident until construction. If variations appear evident, Terra Associates, Inc. should be requested to reevaluate the recommendations in this report prior to proceeding with construction.



REFERENCE: THOMAS GUIDE CD-ROM, KING/PIERCE/SNOHOMISH COUNTIES, 2004 NOT TO SCALE



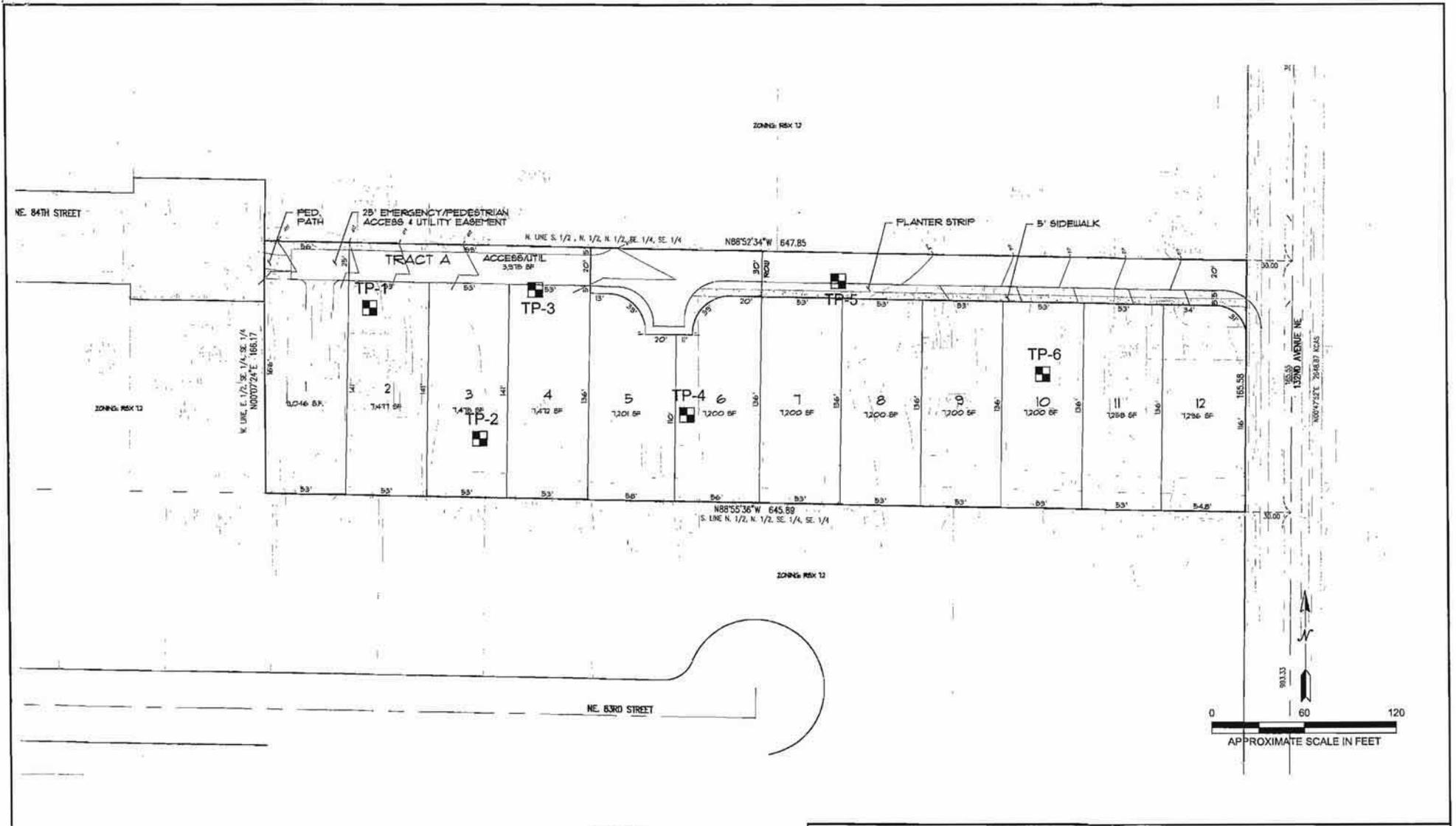
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VICINITY MAP
 HARMON RIDGE
 KIRKLAND, WASHINGTON

Proj. No. T-6154

Date JAN 2008

Figure 1



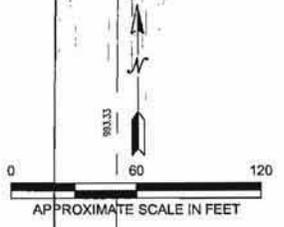
NOTES:
 1. THIS SITE PLAN IS SCHEMATIC. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. IT IS INTENDED FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR DESIGN OR CONSTRUCTION PURPOSES

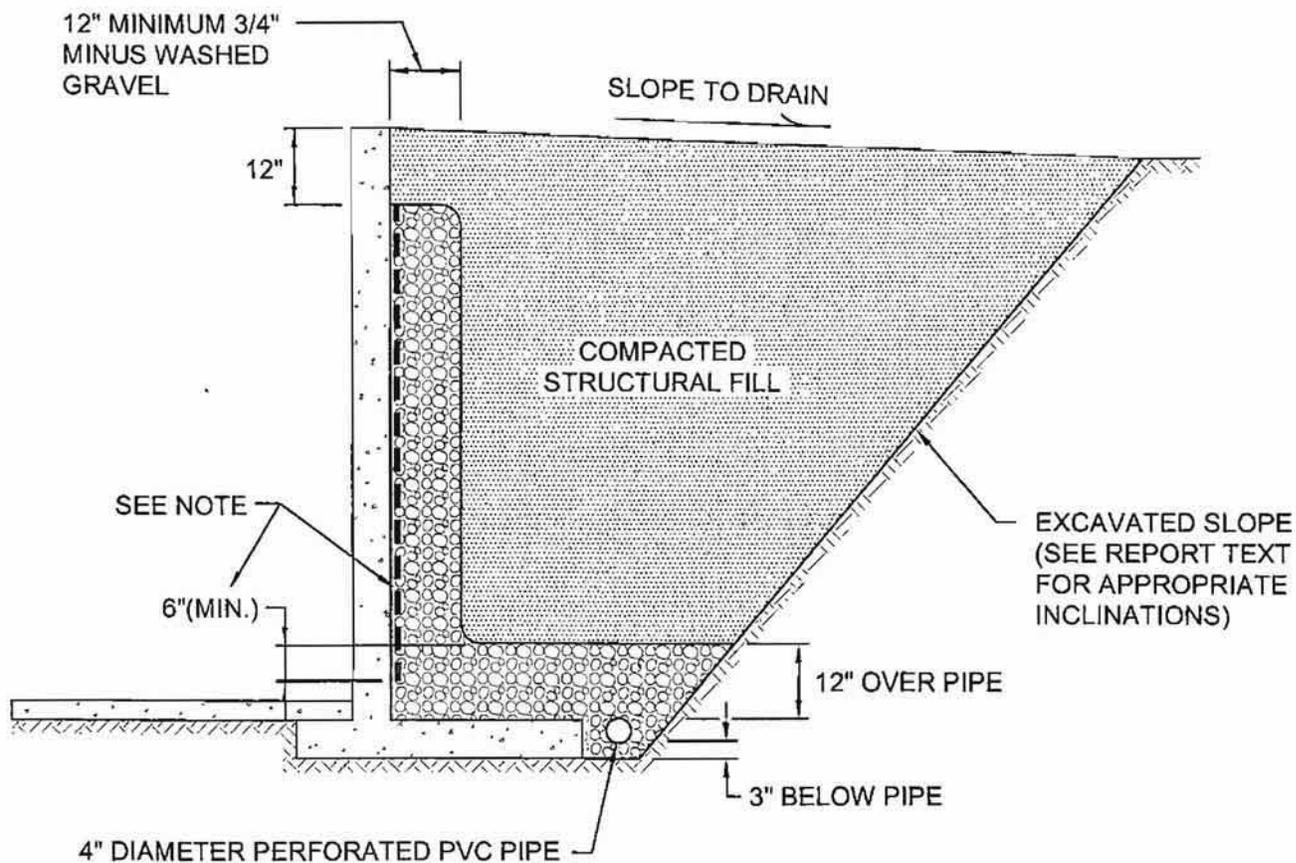
REFERENCE:
 SITE PLAN PROVIDED BY CLIENT

LEGEND:
 APPROXIMATE TEST PIT LOCATION

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EXPLORATION LOCATION PLAN HARMON RIDGE KIRKLAND, WASHINGTON		
Proj. No. T-6154	Date JAN 2008	Figure 2

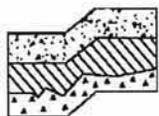




NOT TO SCALE

NOTE:

MIRADRAIN G100N PREFABRICATED DRAINAGE PANELS OR SIMILAR PRODUCT CAN BE SUBSTITUTED FOR THE 12-INCH WIDE GRAVEL DRAIN BEHIND WALL. DRAINAGE PANELS SHOULD EXTEND A MINIMUM OF SIX INCHES INTO 12-INCH THICK DRAINAGE GRAVEL LAYER OVER PERFORATED DRAIN PIPE.



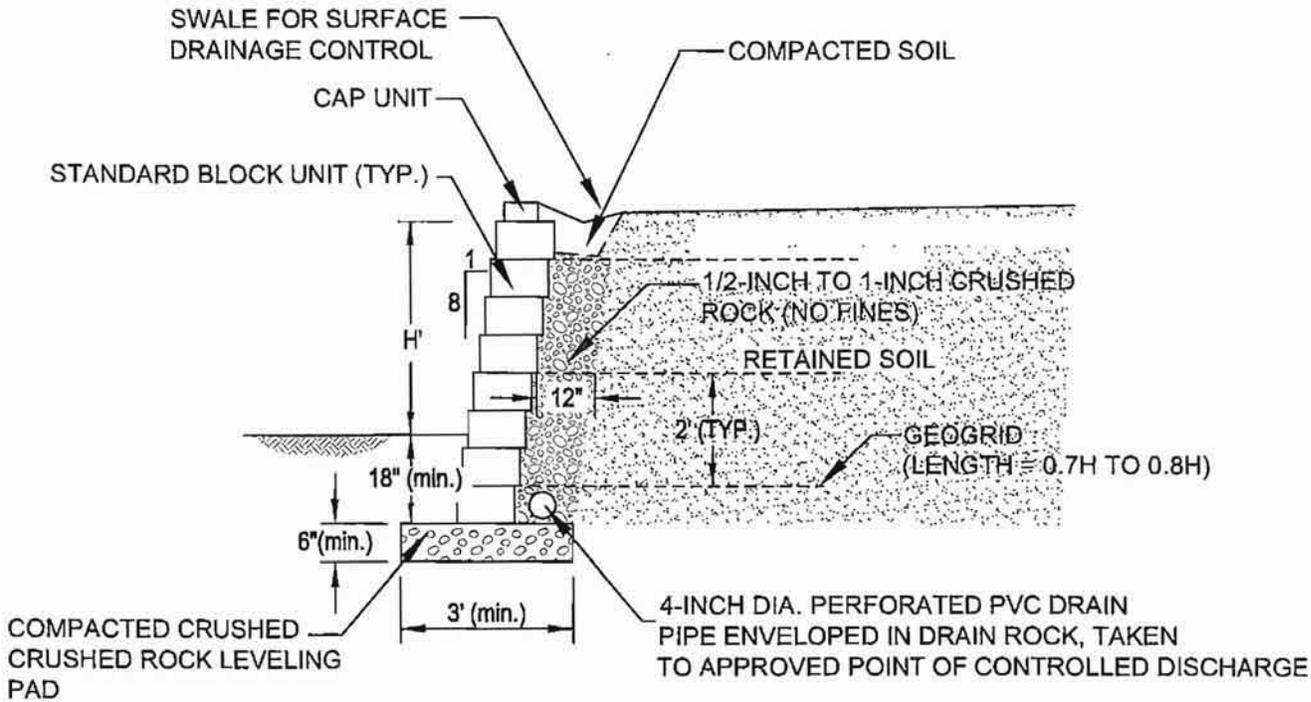
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TYPICAL WALL DRAINAGE DETAIL
 HARMON RIDGE
 KIRKLAND, WASHINGTON

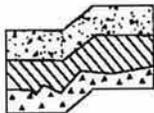
Proj. No. T-6154

Date JAN 2008

Figure 3



**MSE WALL DETAIL
NOT TO SCALE**



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TYPICAL MSE WALL
 HARMON RIDGE
 KIRKLAND, WASHINGTON

Proj. No. T-6154

Date JAN 2008

Figure 4

**APPENDIX A
FIELD EXPLORATION AND LABORATORY TESTING**

**Harmon Ridge
Kirkland, Washington**

On November 6, 2007, we investigated subsurface conditions at the site by excavating 6 test pits to a maximum depth about 10 feet below existing surface grades using a rubber-tire backhoe. The test pit locations are shown on Figure 2. The test pit locations were approximately determined by measurements from existing site features.

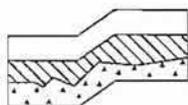
An engineering geologist from our office conducted the field exploration, maintained a log of each test pit, classified the soils encountered, collected representative soil samples, and observed pertinent site features. All soil samples were visually classified in accordance with the Unified Soil Classification System (USCS) described on Figure A-1. The Test Pit Logs are presented on Figures A-2 through A-7.

Representative soil samples obtained from the test pits were placed in sealed containers and taken to our laboratory for further examination and testing. The moisture content of each sample was measured and is reported on the Test Pit Logs. Grain size distribution analyses were performed on four samples obtained from the test pits. The results of the grain size analyses are shown on Figures A-8 and A-9.

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTION
COARSE GRAINED SOILS More than 50% material larger than No. 200 sieve size	GRAVELS More than 50% of coarse fraction is larger than No. 4 sieve	Clean Gravels (less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.
		Gravels with fines	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines.
			GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS More than 50% of coarse fraction is smaller than No. 4 sieve	Clean Sands (less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines.
		Sands with fines	SP	Poorly-graded sands or gravelly sands, little or no fines.
			SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS More than 50% material smaller than No. 200 sieve size	SILTS AND CLAYS Liquid limit is less than 50%		ML	Inorganic silts, rock flour, clayey silts with slight plasticity.
	SILTS AND CLAYS Liquid limit is greater than 50%		CL	Inorganic clays of low to medium plasticity, (lean clay).
			OL	Organic silts and organic clays of low plasticity.
	SILTS AND CLAYS Liquid limit is greater than 50%		MH	Inorganic silts, elastic.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of high plasticity.
HIGHLY ORGANIC SOILS			PT	Peat.

DEFINITION OF TERMS AND SYMBOLS

COHESIONLESS	<u>Density</u>	<u>Standard Penetration Resistance in Blows/Foot</u>	I 2" OUTSIDE DIAMETER SPLIT SPOON SAMPLER I 2.4" INSIDE DIAMETER RING SAMPLER OR SHELBY TUBE SAMPLER ▼ WATER LEVEL (DATE) Tr TORVANE READINGS, tsf Pp PENETROMETER READING, tsf DD DRY DENSITY, pounds per cubic foot LL LIQUID LIMIT, percent PI PLASTIC INDEX N STANDARD PENETRATION, blows per foot
	Very loose Loose Medium dense Dense Very dense	0-4 4-10 10-30 30-50 >50	
COHESIVE	<u>Consistency</u>	<u>Standard Penetration Resistance in Blows/Foot</u>	
	Very soft Soft Medium stiff Stiff Very stiff Hard	0-2 2-4 4-8 8-16 16-32 >32	



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UNIFIED SOIL CLASSIFICATION SYSTEM
HARMON RIDGE
KIRKLAND, WASHINGTON

Proj. No. T-6154

Date JAN 2008

Figure A-1

LOG OF TEST PIT NO. 1

FIGURE A-2

PROJECT NAME: Harmon Ridge PROJ. NO: T-6154 LOGGED BY: DPL
 LOCATION: Kirkland, Washington SURFACE CONDS: Grass Lawn APPROX. ELEV: 418'
 DATE LOGGED: November 6, 2007 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
		(1 to 3 inches MOSS/GRASS/SOD) FILL: brown to grayish-brown silty sand with gravel, roots, organics, moist.	Medium Dense	11.9		
		Light brown to grayish-brown silty SAND with gravel, fine grained, slightly cemented with depth, moist. (SM)	Medium Dense to Dense	6.8		
5				4.2		
		Gray silty SAND with gravel, fine grained, cemented, moist. (SM) (Glacial Till)	Dense to Very Dense	7.2		
10				8.2		
		Test pit terminated at 10 feet. No groundwater seepage observed.				
15						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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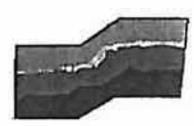
LOG OF TEST PIT NO. 2

FIGURE A-3

PROJECT NAME: Harmon Ridge PROJ. NO: T-6154 LOGGED BY: DPL
 LOCATION: Kirkland, Washington SURFACE CONDS: Grass Lawn APPROX. ELEV: 420'
 DATE LOGGED: November 6, 2007 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
		Grass/sod over dark brown organic SILT, wet.	Soft			
		Brown silty SAND with gravel, fine grained, roots, moist. (SM)	Medium Dense	17.1		
5		Light brown to grayish-brown silty SAND with gravel, fine grained, slightly cemented, moist. (SM)	Medium Dense to Dense	7.2 5.0		
		Gray silty SAND with gravel, fine grained, cemented, moist. (SM) (Glacial Till)	Dense to Very Dense	7.4		
10		Test pit terminated at 9.5 feet. No groundwater seepage observed.		10.6		
15						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. 3

FIGURE A-4

PROJECT NAME: Harmon Ridge PROJ. NO: T-6154 LOGGED BY: DPL
 LOCATION: Kirkland, Washington SURFACE CONDS: Grass Lawn APPROX. ELEV: 418'
 DATE LOGGED: November 6, 2007 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
		Grass/sod over brown organic SILT, wet.	Soft			
		Brown silty SAND with gravel, slight mottling, fine grained, moist. (SM)	Medium Dense	14.6		
5		Gray silty SAND with gravel, fine grained, cemented, moist. (SM) (Glacial Till)	Dense to Very Dense	9.2 8.1		
10		Test pit terminated at 8.5 feet. No groundwater seepage observed.		8.9		
15						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. 4

FIGURE A-5

PROJECT NAME: Harmon Ridge PROJ. NO: T-6154 LOGGED BY: DPLLOCATION: Kirkland, Washington SURFACE CONDS: Grass Lawn APPROX. ELEV: 420'DATE LOGGED: November 6, 2007 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
		Grass/sod over dark brown organic SILT, wet.	Soft			
		Reddish-brown to brown silty SAND with gravel, fine grained, roots, moist. (SM)	Medium Dense	16.0		
5		Grayish-brown silty SAND with gravel, fine grained, moist. (SM)	Medium Dense to Dense	10.9		
		Gray silty SAND with gravel, fine grained, cemented, moist. (SM) (Glacial Till)	Dense to Very Dense	8.2 8.4		
10		Test pit terminated at 8 feet. No groundwater seepage observed.				
15						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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Environmental Earth Sciences

LOG OF TEST PIT NO. 5

FIGURE A-6

PROJECT NAME: Harmon Ridge PROJ. NO: T-6154 LOGGED BY: DPL
 LOCATION: Kirkland, Washington SURFACE CONDS: Grass Lawn APPROX. ELEV: 420'
 DATE LOGGED: November 6, 2007 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
		Grass/sod over dark brown organic SILT, wet.	Soft			
		Light brown silty SAND with gravel, roots, mottled, fine grained, moist. (SM)	Medium Dense	12.7		
5		Gray silty SAND with gravel, fine grained, cemented, moist. (SM) (Glacial Till)	Dense to Very Dense	5.5		
				7.7		
10		Test pit terminated at 8 feet. No groundwater seepage observed.				
15						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. 6

FIGURE A-7

PROJECT NAME: Harmon Ridge PROJ. NO: T-6154 LOGGED BY: DPL
 LOCATION: Kirkland, Washington SURFACE CONDS: Grass Lawn APPROX. ELEV: 415'
 DATE LOGGED: November 6, 2007 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
		FILL: moss/grass over brown silty sand, fine grained, wet.	Medium Dense			
5		Gray silty SAND with gravel, fine grained, cemented, moist. (SM) (Glacial Till)	Dense to Very Dense	9.4 7.8		
10		Test pit terminated at 8 feet. No groundwater seepage observed.				
15						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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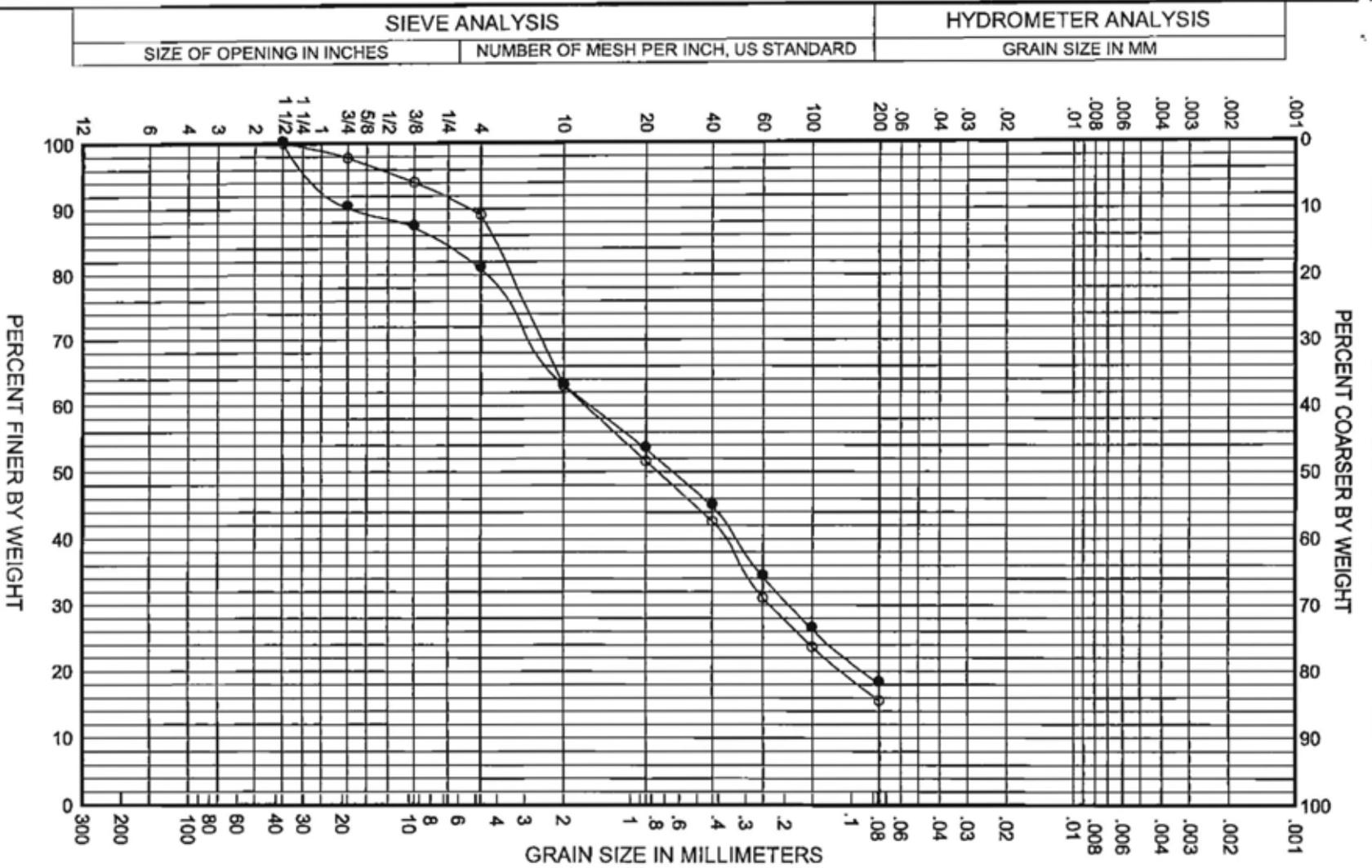
**APPENDIX A
FIELD EXPLORATION AND LABORATORY TESTING**

**Harmon Ridge
Kirkland, Washington**

On November 6, 2007, we investigated subsurface conditions at the site by excavating 6 test pits to a maximum depth about 10 feet below existing surface grades using a rubber-tire backhoe. The test pit locations are shown on Figure 2. The test pit locations were approximately determined by measurements from existing site features.

An engineering geologist from our office conducted the field exploration, maintained a log of each test pit, classified the soils encountered, collected representative soil samples, and observed pertinent site features. All soil samples were visually classified in accordance with the Unified Soil Classification System (USCS) described on Figure A-1. The Test Pit Logs are presented on Figures A-2 through A-7.

Representative soil samples obtained from the test pits were placed in sealed containers and taken to our laboratory for further examination and testing. The moisture content of each sample was measured and is reported on the Test Pit Logs. Grain size distribution analyses were performed on four samples obtained from the test pits. The results of the grain size analyses are shown on Figures A-8 and A-9.



COBBLES	COARSE	FINE	COARSE	MEDIUM	FINE	FINES
	GRAVEL			SAND		

Key	Exploration Number	Depth (ft.)	USCS	Description	Moisture Content (%)	LL	PL
●	TP-4	6.5	SM	silty SAND with gravel	8.2		
○	TP-6	3.5	SM	silty SAND	7.8		



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GRAIN SIZE ANALYSIS
 HARMON RIDGE
 KIRKLAND, WASHINGTON

Proj. No. T-6154 Date JAN 2008 Figure A-9

Web Case Comments

Permit Number: PSB08-00001
Project Name: 12 LOT SUBDIVISION
Opened for Comment: 02/21/2008 9:29AM
Closed for Comment: 03/18/2008 12:00AM

Permit Status: P
Comments on this Case: 1

Permit Details:

Proposal to combine four parcels totalling 2.46 acres and subdivide into 12 single family lots in an RSX 7.2 zone located in the South Rose Hill neighborhood.

Comments:

ERICA SPELLMAN, 13011 NE 83RD ST KIRKLAND WA 98033, 03/18/2008 1 of 1

The speed at which this blockbuster project has been hurtled through to reach this point of public comment is startling to me. I am a long time homeowner living on NE 83rd st and the last thing I want to see across the street is a large group of tightly packed McMansions. We remain a quiet, relatively inexpensive neighborhood full of families with children. Approving such a project as it stands today only serves the interests of the developers and builders whose only motivation is pure profit.

I beg you to consider major modifications and alternatives to this tired old scenario. Are these homes as green as possible? Are they going to be affordable or will they simply be more giant houses in the 6,7,800,000 range? Couldn't they be something more useful to our community and continue to raise the bar here in Kirkland for our forward thinking? More affordable cottages all the way up to 2000 sq foot examples of green - inside and out?

I reject this project as it stands today. Kirkland can do far better for our land, our people and standard of living.

Please, no more.

Thank you for your consideration.

ATTACHMENT <u>5a</u>
<u>55</u>

Caryn Saban

From: ronwhanson@comcast.net
Sent: Thursday, November 06, 2008 2:21 PM
To: Caryn Saban
Subject: Fwd: psb08-00001

Bonnie Kosmyna Letter (Attachment 5b)

----- Forwarded Message -----

From: "b kosmyna" <b.kosmyna@comcast.net>
To: ronwhanson@comcast.net
Sent: Sunday, June 8, 2008 7:21:45 PM GMT -08:00 US/Canada Pacific
Subject: psb08-00001

Dear Ron Hanson,

Hello, my name is Bonnie Kosmyna. I live at 13026 Ne 83rd street. My property will be sharing a backyard fence with lot/cottage #7 or 8. I have lived at this property for 22 years. I understand the need for affordable housing in our area and the high demand to live in the Rosehill area. I have two concers. One is the sheer number of dwelling spaces that are being cramed into that area and what that will mean to our neighborhood. The second is the landscaping that now exists on the adjacent property. The trees and bushes have been growing for those 22 years. I haven't had to plant anything on my side because there was this natural barrier: to light and sound. It is upsetting to think that we will sit on our back deck or hot tub and have someone looking out of their windows in to our yard. My request is to keep as much of the existing greenery as a buffer between the new houses and the existing fencing. The shock of having backyard neighbors would be considerably lessened and appreciated as well as helping and maintaining the environment. Thank you for your consideration.
Bonnie Kosmyna

From: Steve Tindall
Sent: Monday, March 17, 2008 9:57 AM
To: ronwhanson@msn.com
Cc: 'Rob Jammerman'; steve@SteveTindall.com; Paul Isenburg (pauli@windemere.com); Jerzy Staszak (JerzyStaszak@MSN.Com); baggfamily@earthlink.net
Subject: PSB08-00001: New development in South Rose Hill

Mr. Hanson- Please send me a short reply to this email so I know it was received.

My name is Steve Tindall, and I live on NE 84th Street one house away from the proposed subdivision. My neighbor to the east, Jerzy Staszak, is adjacent to the proposed development, and I've cc'd him on this email. Carter Bagg and Paul Isenburg also live on NE 84th Street, and I have copied them as well.

At an early stage in the planning process, there was some discussion about connecting NE 84th Street through from 128th Ave NE to 132nd Ave NE. Most of the residents on NE 84th Street would actively oppose this street modification due to increased traffic. I contacted Rob Jammerman at the city and after a brief discussion, he indicated that the city was not planning to pursue this option. I have included the email thread confirming this. I'd like to express my appreciation to Mr. Jammerman and the city planning department for recognizing the neighborhood concerns and taking them into account early in the process. I am and sending you the email thread of correspondence between Mr. Jammerman and myself, and copying Mr. Jammerman, so that these plans can be part of the record.

In addition, I thought I'd provide a brief synopsis of issues or areas of concerns I am aware of. I think all my neighbors generally share the view on one issue: Don't increase any traffic, and I think that is accommodated by not extending NE 84th to 132nd, per comments above.

Regarding other possible issues:

If I understand correctly, the two existing Harmon houses will be torn down, and those lots will be consolidated into the subdivision. Given that plan, my neighbor Jerzy Staszak (12861 NE 84th, south side of street) will actually be on the border of the new subdivision. How will this seem to change for him? Without knowing the plan, it's hard to predict whether or not there would be any problem. However, if the change adversely impacts him, there may be

ATTACHMENT <u>5c</u>
<u>psb08-00001</u>

- If it simply seems that there are some different and newer houses next door that are similar distance as the current houses, but do not share the same driveway or street access, he is probably fine. In fact he's probably very happy.
- If the new houses are 5 feet from him and two stories, he might have an issue. Still, it is his driveway and garage on that side and perhaps no big deal in any case.

Emergency vehicle access and turnaround.

- Rob alerted me that there may be some requirement for emergency vehicle turnaround or access. We are anxious to see the plans for that aspect, and hope it will not impact us too much.

The idea of locating an area to do a 3 point turn directly adjacent to my neighbor (Staszak) would seem to address several issues:

- Will provide a buffer zone between him and the subdivision. Perhaps not necessary, but not a bad thing.
- Allow a dedicated location turn around that will accommodate all vehicles per city standards, and,
- Will reduce the pressure on access into the Buddhist parking areas. In particular, I wonder how things change if the Buddhists decided to sell to a developer, and the property was subdivided. Would we wish we had taken a step when we could have...

I think my neighbors would share this view for the most part, but clearly there are specific individual interests that might vary.

Steve Tindall

Steve and Donna Tindall
12859 NE 84th Street
Kirkland, WA 98033

(425) 822-4373 Home - Evening

(425) 951-1632 Steve Office

Steve@SteveTindall.Com



CITY OF KIRKLAND
123 FIFTH AVENUE, KIRKLAND, WASHINGTON 98033-6189
(425) 587-3225

DETERMINATION OF NONSIGNIFICANCE (DNS) .

CASE #: SEP08-00003

DATE ISSUED: 7/11/2008

DESCRIPTION OF PROPOSAL

Subdivision consisting of 12 lots on a 2.46 acre site in the single family RSX 7.2 zone

PROPONENT: **LAUREL HILL PARTNERS, LLC**

LOCATION OF PROPOSAL

8325 132ND AVENUE NE

LEAD AGENCY is **The City of Kirkland**

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21.030 (2) (c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public upon request.

There is no comment period for this DNS.

Responsible official:

7/8/08
Date

Eric Shields, Director
Department of Planning and Community Development
425-587-3225

Address: City of Kirkland
123 Fifth Avenue
Kirkland, WA 98033-6189

You may appeal this determination to the Planning Department at Kirkland City Hall, 123 Fifth Avenue, Kirkland, WA 98033 no later than 5:00 p.m., Friday, July 25, 2008 by WRITTEN NOTICE OF APPEAL.

You should be prepared to make specific factual objections. Contact the Planning Department at 425-587-3225 to read or ask about the procedures for SEPA appeals.

Please reference case # SEP08-00003.

cc: Case # PSB08-00001

Distributed By:

7/11/2008
Date:



Greenforest Incorporated



Consulting Arborist

11/4/2007

Ryan Green
Pacific Properties, Inc.
14410 Bel Red Road
Bellevue WA 98007

RE: Arborist Inspection and Report at Harmon Ridge

Dear Mr. Green:

You contacted me and contracted my services as a consulting arborist. Pacific Properties, Inc. proposes an 11-lot single family subdivision on +/- 2.4 acres within the City of Kirkland. The property is located east of 132nd Ave NE, aligned with NE 84th Street, in Kirkland WA.

My assignment is to tag and inspect trees at the above referenced site, and prepare a Tree Plan III consistent with City of Kirkland standard requirements.

I visited the site 10/23/2007. I inventoried, tagged and visually inspected significant trees, ≥ 6 " diameter (DBH). This report establishes the condition of these significant trees.

The site consists of four separate tax parcels, three of which contain single family residences with modest, maturing landscapes. The fourth parcel contains out buildings and pasture. The south property line of all four parcels is lined with trees, mostly native conifers.

One hundred forty-eight (148) significant trees stand on these four parcels (#1001 – 1148).

An additional six (6) trees (#2001 – 2006) stand on adjoining parcels, and are included because their driplines extend onto the subject property.

TREE INSPECTION

Ryan Green - Pacific Properties, Inc.
 RE: Arborist Inspection and Report at Harmon Ridge
 11/4/2007
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I marked each tree with 1" x 3.5" aluminum tag indicating tree number. I visually inspected each tree from the ground and rated both tree health and structure.

A tree's structure is distinct from its health. This inspection identifies what is visible with both. Structure is the way the tree is put together or constructed, and identifying obvious defects can be helpful in determining if a tree is predisposed to failure. Health deals with disease and insect infestation.

No invasive procedures were performed on any trees. The results of this inspection are based on what is visible at the time of the inspection.

The attached tables provide the following information for each tree:

Tree number as shown on tag in the field.

Tree Species common name.

DBH stem diameter in inches measured 4.5 feet from the ground.

Dripline canopy radius measured in feet.

Structure and Health rating ('1' indicates no visible health-related problems or structural defects, '2' indicates minor visible problems or defects that may require attention if the tree is retained, and '3' indicates significant visible problems or defects and tree removal is recommended.

Visible defects Obvious structural defects or diseases visible at time of inspection, which includes:

Dead – the tree is dead.

Diseased – the tree is diseased, and its health or structure is affected.

Lean – the trunk has a significant lean.

Stem Decay – visible evidence of internal wood decay.

Stunted/ Chlorotic – the tree is stunted in its normal growth, or has chlorotic foliage.

Suppressed – the tree is growing inside or within the canopy of another tree. It should not be retained as a stand-alone tree, but could be retained in a group.

Topped – the tree was previously topped.

Viability a determination by the arborist whether the tree is viable for retention, and if so, in a group or as a stand-alone tree. Non-viable tree are recommended for removal, and reasons are reported.

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Table number 1 (attached) summarizes the results of this inspection, listing trees by number, common name, DBH, dripline, structure and health ratings, visible defects and viability.

Table number 2 (also attached) provides limits of disturbance for each tree.

Special Instruction and Tree Protection Measures Around Retained Trees

Minimum four (4) foot temporary chainlink fence shall be installed at the driplines of all retained trees or at the limits of disturbance when construction or access is required within the dripline. Fence shall completely encircle the retained trees. Install fence posts using pier block only. Any modifications to the fencing material and location must be approved by a City planner.

No stockpiling of materials, vehicular or pedestrian traffic, material storage or use of equipment or machinery shall be allowed within the protective fencing. Fencing shall not be moved or removed unless approved by a City planner. Any work, activity or soil disturbance within the protection fencing, or critical root zone, shall be reviewed, approved and monitored by the project arborist.

Instructions and specifications for pruning roots or branches shall be addressed individually for specific trees based on the proposed encroachment.

Fencing signage as detailed (see attached) must be posted every fifteen (15) feet along the fencing.

Sincerely,

GreenForest, Inc.



By Fauro Greenforest, M. S.

ASCA Registered Consulting Arborist #379
ISA Certified Arborist # PN -0143

Attachments:

1. Assumptions
2. Table No. 1 – Inspection Results
3. Table No. 2 – Limits of Disturbance
4. Tree Protection and Fencing Sign Detail

Ryan Green - Pacific Properties, Inc.
RE: Arborist Inspection and Report at Harmon Ridge
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Assumptions & Limiting Conditions

- 1) A field examination of the site was made 10/23/2007. My observations and conclusions are as of that date.
- 2) Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/arborist can neither guarantee nor be responsible for the accuracy of information provided by others.
- 3) Trees #2001 – 2006 stand on adjoining parcels, and are included because their driplines extend onto the subject property. The inspection of these trees is limited to visual observation from the subject property, and although they appear healthy, no opinion is implied or offered as to their structural integrity. A complete evaluation of the potential for these trees to fail requires excavation and examination of the base of the subject tree and permission of the property owner.
- 4) Construction activities can significantly affect the condition of retained trees. All retained trees should be inspected after construction is completed, and then inspected regularly as part of routine maintenance.
- 5) Unless stated other wise: 1) information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection; and 2) the inspection is limited to visual examination of the subject trees without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied that problems or deficiencies of the subject tree may not arise in the future.
- 6) All trees possess the risk of failure. Trees can fail at any time, with or without obvious defects, and with or without applied stress.
- 7) The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made.
- 8) This report and any values/opinions expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

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Table No. 1. Tree Inspection Results

Tree No.	Tree species	DBH	Dripline	Structure	Health	Visible defects	Viable tree?
1001	Pine	30	16	3	2	Stem decay	No; diseased.
1002	Red maple	14	18	1	1		Yes; alone
1003	Western red-cedar	22	18	1	2	Topped	Yes; alone
1004	Birch	12	14	1	2	Topped	Yes; grove
1005	Birch	8	6	1	2	Suppressed	Yes; grove
1006	Birch	6	10	1	2	Suppressed	Yes; grove
1007	Douglas-fir	28	30	1	1		Yes; alone
1008	Western red-cedar	18	16	1	1		Yes; grove
1009	Douglas-fir	18	18	1	1		Yes; grove
1010	Western red-cedar	14	12	1	1		Yes; grove
1011	Red maple	14	16	1	2	Topped	Yes; alone
1012	Douglas-fir	16	12	1	1		Yes; grove
1013	Western red-cedar	16	12	1	1		Yes; grove
1014	Douglas-fir	16	14	1	1		Yes; grove
1015	Western red-cedar	14	12	1	1		Yes; grove
1016	Douglas-fir	18	16	1	1		Yes; grove
1017	Western red-cedar	8	6	1	1		Yes; alone
1018	Douglas-fir	16	14	1	1		Yes; grove
1019	Douglas-fir	26	22	1	1		Yes; alone
1020	Douglas-fir	6	8	1	1		Yes; grove
1021	Western red-cedar	10	14	1	2	Topped	Yes; grove
1022	Douglas-fir	24	22	1	1		Yes; alone
1023	Western red-cedar	8	6	1	1		Yes; alone
1024	Douglas-fir	16	12	1	1		Yes; alone
1025	Douglas-fir	18	16	1	1		Yes; grove
1026	Douglas-fir	14, 18	20	1	2	Multiple attachment	Yes; grove
1027	Western red-cedar	8	6	1	1		Yes; alone
1028	Douglas-fir	14	12	1	1		Yes; grove
1029	Douglas-fir	18	16	1	1		Yes; grove
1030	Douglas-fir	18	16	1	1		Yes; grove
1031	Western red-cedar	12, 10, 6	12	1	2	Multiple attachment	Yes; grove
1032	Silver maple	22	30	1	2		No; inappropriate species for site.
1033	Holly	6	10	1	1		Yes; alone
1034	Douglas-fir	32	28	1	1		Yes; grove
1035	Douglas-fir	20	18	1	1		Yes; grove
1036	Douglas-fir	24	22	1	1		Yes; grove
1037	Douglas-fir	20	24	1	1		Yes; grove
1038	Horsechestnut	10	14	1	2	Suppressed	Yes; grove

Ryan Green - Pacific Properties, Inc.
 RE: Arborist Inspection and Report at Harmon Ridge
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Tree No.	Tree species	DBH	Dripline	Structure	Health	Visible defects	Viable tree?
1039	Douglas-fir	18	16	1	1		Yes; alone
1040	Douglas-fir	16	18	1	1		Yes; alone
1041	Douglas-fir	18	16	1	1		Yes; grove
1042	Douglas-fir	26	22	1	1		Yes; alone
1043	Cherry	8	10	1	3	Suppressed	No; dead or dying.
1044	Scots Pine	28	18	1	1		Yes; alone
1045	Japanese maple	8	14	1	1		Yes; alone
1046	Douglas-fir	28	26	1	1		Yes; alone
1047	Douglas-fir	18	16	1	1		Yes; alone
1048	Douglas-fir	20	18	3	1	Stunted, chlorotic	No; diseased.
1049	English hawthorn	6	10	3	1	Diseased	No; diseased.
1050	English hawthorn	8	10	3	1	Diseased	No; diseased.
1051	Apple	16	14	3	2	Diseased	No; diseased.
1052	Mt ash	8	14	3	1	Diseased	No; diseased.
1053	Mt Ash	(2) 10	16	3	2	Diseased	No; diseased.
1054	Holly	(4) 10	14	1	3	Multiple attachment	No; hazardous
1055	Douglas-fir	16	18	1	1		Yes; alone
1056	Douglas-fir	14	16	1	1		Yes; alone
1057	Mt. Ash	10	8	3	2	Stem decay	No; diseased.
1058	Douglas-fir	16	18	1	1		Yes; alone
1059	Deodar cedar	28	24	1	1		Yes; alone
1060	Magnolia	6	18	1	2	Suppressed	Yes; alone
1061	Douglas-fir	26	28	1	1		Yes; alone
1062	Holly	10, 12	14	1	1		Yes; alone
1063	Douglas-fir	30	26	1	1		Yes; alone
1064	Douglas-fir	26	22	1	1		Yes; alone
1065	Western red-cedar	20	16	1	1		Yes; alone
1066	Apple	8	14	3	1	Diseased	No; diseased.
1067	Holly	8	8	1	1		Yes; alone
1068	Douglas-fir	26	24	1	1		Yes; alone
1069	Western red-cedar	12, 14	16	1	1		Yes; alone
1070	Western red-cedar	6	8	1	1		Yes; grove
1071	Western red-cedar	6, 10	12	1	1		Yes; grove
1072	Western red-cedar	8	10	1	1		Yes; grove
1073	Western red-cedar	8	10	1	1		Yes; grove
1074	Western red-cedar	8	8	1	1		Yes; grove
1075	Bigleaf maple	10	12	1	3	Topped	No; hazardous
1076	English laurel	6	18	1	2	Topped	No; diseased.
1077	English laurel	8	18	1	3	Topped	No; dead or dying.
1078	English laurel	10	16	1	3	Topped	No; dead or dying.
1079	Walnut	6	10	1	1		Yes; alone

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Tree No.	Tree species	DBH	Dripline	Structure	Health	Visible defects	Viable tree?
1080	Western red-cedar	6	8	1	1		Yes; alone
1081	Western red-cedar	6	8	1	1		Yes; alone
1082	Western red-cedar	6	8	1	1		Yes; alone
1083	Western red-cedar	6	8	1	1		Yes; alone
1084	Western red-cedar	6	8	1	1		Yes; alone
1085	Western red-cedar	6	8	1	1		Yes; alone
1086	Western red-cedar	6	8	1	1		Yes; alone
1087	Western red-cedar	6	8	1	1		Yes; alone
1088	Western red-cedar	6	8	1	1		Yes; alone
1089	Western red-cedar	6	8	1	1		Yes; alone
1090	Douglas-fir	10	14	1	1		Yes; grove
1091	Douglas-fir	6	8	1	2	Suppressed	Yes; grove
1092	Douglas-fir	8	6	1	2	Suppressed	Yes; grove
1093	Douglas-fir	12	14	1	1		Yes; grove
1094	Douglas-fir	20	18	1	1		Yes; grove
1095	Douglas-fir	8	10	1	2	Suppressed	Yes; grove
1096	Douglas-fir	14	16	1	1		Yes; grove
1097	Douglas-fir	6	10	1	2	Suppressed	Yes; grove
1098	Douglas-fir	12	8	1	1		Yes; grove
1099	Douglas-fir	16	14	1	1		Yes; grove
1100	Douglas-fir	14	16	1	1		Yes; grove
1101	Douglas-fir	18	18	1	1		Yes; grove
1102	Cherry	12, 12, 10	24	3	2	Diseased	No; diseased.
1103	Apple	6	10	3	3	Diseased	No; diseased.
1104	Plum	8	12	2	3	Diseased	No; diseased.
1105	Bigleaf maple	14, 14, 16	25	1	3	Multiple attachment	No; hazardous
1106	Deodar cedar	18	16	1	2	Suppressed	Yes; grove
1107	Bigleaf maple	12	16	1	2	Suppressed	Yes; grove
1108	Scots pine	10	12	2	3	Suppressed	No; dead or dying.
1109	Bigleaf maple	(4) 12	25	1	2	Multiple attachment	No; hazardous
1110	Douglas-fir	12	6	1	2	Suppressed	No; dead or dying.
1111	Douglas-fir	10	6	1	2	Suppressed	No; diseased.
1112	Mugho pine	6	8	3	2	Suppressed	No; inappropriate species for site.
1113	Douglas-fir	10	6	3	1	Suppressed	No; dead or dying.
1114	Bigleaf maple	18	20	1	1		Yes; alone
1115	Douglas-fir	16	16	1	1		Yes; grove
1116	Bigleaf maple	10	12	2	3	Topped	No; dead or dying.
1117	Douglas-fir	12	10	1	1		Yes; grove
1118	Douglas-fir	10	12	1	1		Yes; alone
1119	Douglas-fir	10	8	1	2	Suppressed	Yes; grove

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Tree No.	Tree species	DBH	Dripline	Structure	Health	Visible defects	Viable tree?
1120	Douglas-fir	10	8	1	2	Suppressed	Yes; grove
1121	Douglas-fir	14	16	1	2	Lean	Yes; grove
1122	Douglas-fir	10	8	1	2	Suppressed	Yes; grove
1123	Douglas-fir	12	14	1	2	Suppressed	Yes; grove
1124	Douglas-fir	18	16	1	1		Yes; grove
1125	Douglas-fir	12	12	1	2	Suppressed	Yes; grove
1126	Douglas-fir	12	10	1	2	Suppressed	Yes; grove
1127	Western red-cedar	14	12	1	1		Yes; grove
1128	Western red-cedar	10	8	1	1		Yes; grove
1129	Western red-cedar	10	10	1	1		Yes; grove
1130	Western red-cedar	16	14	1	1		Yes; grove
1131	Pine	12	8	1	1		Yes; alone
1132	Pine	16	18	1	1		Yes; alone
1133	Spruce	14	12	1	1		Yes; alone
1134	Pine	12	8	1	1		Yes; alone
1135	Pine	14	12	1	1		Yes; alone
1136	Pine	14	12	1	1		Yes; alone
1137	Pine	10	12	1	1		Yes; alone
1138	Pine	12	16	1	1		Yes; alone
1139	Pine	16	18	1	1		Yes; alone
1140	Pine	14	12	1	1		Yes; alone
1141	Pine	6	0	1	3	Dead	No; dead tree.
1142	Pine	12	16	1	1		Yes; alone
1143	Pine	10	10	1	1		Yes; alone
1144	Pine	14	16	1	1		Yes; alone
1145	Pine	12	12	1	1		Yes; alone
1146	Pine	18	16	1	1		Yes; alone
1147	Pine	12	14	1	1		Yes; alone
1148	Pine	14	18	1	3	Lean	No; hazardous
2001	Douglas-fir	24	18				Yes; alone
2002	Pine	18	14				Yes; alone
2003	Pine	16	16				Yes; alone
2004	Pine	22	16				Yes; alone
2005	Alder	12	14				Yes; alone
2006	Cherry	24	35				Yes; alone

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Table No. 2. Limits of Disturbance in feet as radius from tree trunk.

Tree no.	Species	DBH	Dripline	Limits of Disturbance			
				North	East	South	West
1001	Pine	30	16	11	11	11	11
1002	Red maple	14	18	10	ND	10	10
1003	Western red-cedar	22	18	12	ND	12	12
1004	Birch	12	14	8	ND	8	8
1005	Birch	8	6	5	ND	5	5
1006	Birch	6	10	6	ND	6	6
1007	Douglas-fir	28	30	14	14	14	14
1008	Western red-cedar	18	16	9	11	ND	11
1009	Douglas-fir	18	18	10	12	ND	12
1010	Western red-cedar	14	12	6	8	ND	8
1011	Red maple	14	16	8	10	ND	10
1012	Douglas-fir	16	12	6	8	ND	8
1013	Western red-cedar	16	12	6	8	ND	8
1014	Douglas-fir	16	14	6	8	ND	8
1015	Western red-cedar	14	12	6	8	ND	8
1016	Douglas-fir	18	16	10	12	ND	12
1017	Western red-cedar	8	6	4	6	ND	6
1018	Douglas-fir	16	14	8	10	ND	10
1019	Douglas-fir	26	22	12	12	ND	12
1020	Douglas-fir	6	8	5	7	ND	7
1021	Western red-cedar	10	14	8	10	ND	10
1022	Douglas-fir	24	22	12	12	ND	12
1023	Western red-cedar	8	6	6	8	ND	8
1024	Douglas-fir	16	12	6	8	ND	8
1025	Douglas-fir	18	16	10	12	ND	12
1026	Douglas-fir	14, 18	20	12	12	ND	12
1027	Western red-cedar	8	6	4	6	ND	6
1028	Douglas-fir	14	12	6	8	ND	8
1029	Douglas-fir	18	16	8	10	ND	10
1030	Douglas-fir	18	16	8	10	ND	10
1031	Western red-cedar	12, 10, 6	12	4	6	ND	6
1032	Silver maple	22	30	12	14	ND	14
1033	Holly	6	10	6	8	ND	8
1034	Douglas-fir	32	28	12	14	ND	14
1035	Douglas-fir	20	18	10	12	ND	12
1036	Douglas-fir	24	22	10	12	ND	12
1037	Douglas-fir	20	24	10	12	ND	12
1038	Horsechestnut	10	14	8	10	ND	10
1039	Douglas-fir	18	16	8	10	ND	10
1040	Douglas-fir	16	18	8	10	ND	10
1041	Douglas-fir	18	16	8	10	ND	10

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Tree no.	Species	DBH	Dripline	Limits of Disturbance			
				North	East	South	West
1042	Douglas-fir	26	22	10	12	ND	12
1043	Cherry	8	10	6	6	ND	6
1044	Scots Pine	28	18	12	12	12	12
1045	Japanese maple	8	14	9	9	9	9
1046	Douglas-fir	28	26	16	16	16	16
1047	Douglas-fir	18	16	11	11	11	11
1048	Douglas-fir	20	18	12	12	12	12
1049	English hawthorn	6	10	7	7	7	7
1050	English hawthorn	8	10	7	7	7	7
1051	Apple	16	14	9	9	9	9
1052	Mt ash	8	14	9	9	9	9
1053	Mt Ash	(2) 10	16	10	10	10	10
1054	Holly	(4) 10	14	10	10	10	10
1055	Douglas-fir	16	18	ND	11	11	11
1056	Douglas-fir	14	16	ND	10	10	10
1057	Mt. Ash	10	8	6	6	6	6
1058	Douglas-fir	16	18	11	11	11	11
1059	Deodar cedar	28	24	15	15	15	15
1060	Magnolia	6	18	6	6	6	6
1061	Douglas-fir	26	28	17	17	17	17
1062	Holly	10, 12	14	8	8	8	8
1063	Douglas-fir	30	26	16	16	16	16
1064	Douglas-fir	26	22	14	14	14	14
1065	Western red-cedar	20	16	11	11	11	11
1066	Apple	8	14	9	9	9	9
1067	Holly	8	8	6	6	6	6
1068	Douglas-fir	26	24	15	15	15	15
1069	Western red-cedar	12, 14	16	11	11	11	11
1070	Western red-cedar	6	8	6	6	6	6
1071	Western red-cedar	6, 10	12	8	8	8	8
1072	Western red-cedar	8	10	7	7	7	7
1073	Western red-cedar	8	10	7	7	7	7
1074	Western red-cedar	8	8	6	6	6	6
1075	Bigleaf maple	10	12	8	8	8	8
1076	Laurel	6	18	6	6	ND	6
1077	Laurel	8	18	6	6	ND	6
1078	Laurel	10	16	6	6	ND	6
1079	Walnut	6	10	4	4	4	4
1080	Western red-cedar	6	8	4	6	ND	6
1081	Western red-cedar	6	8	4	6	ND	6
1082	Western red-cedar	6	8	4	6	ND	6
1083	Western red-cedar	6	8	4	6	ND	6
1084	Western red-cedar	6	8	4	6	ND	6

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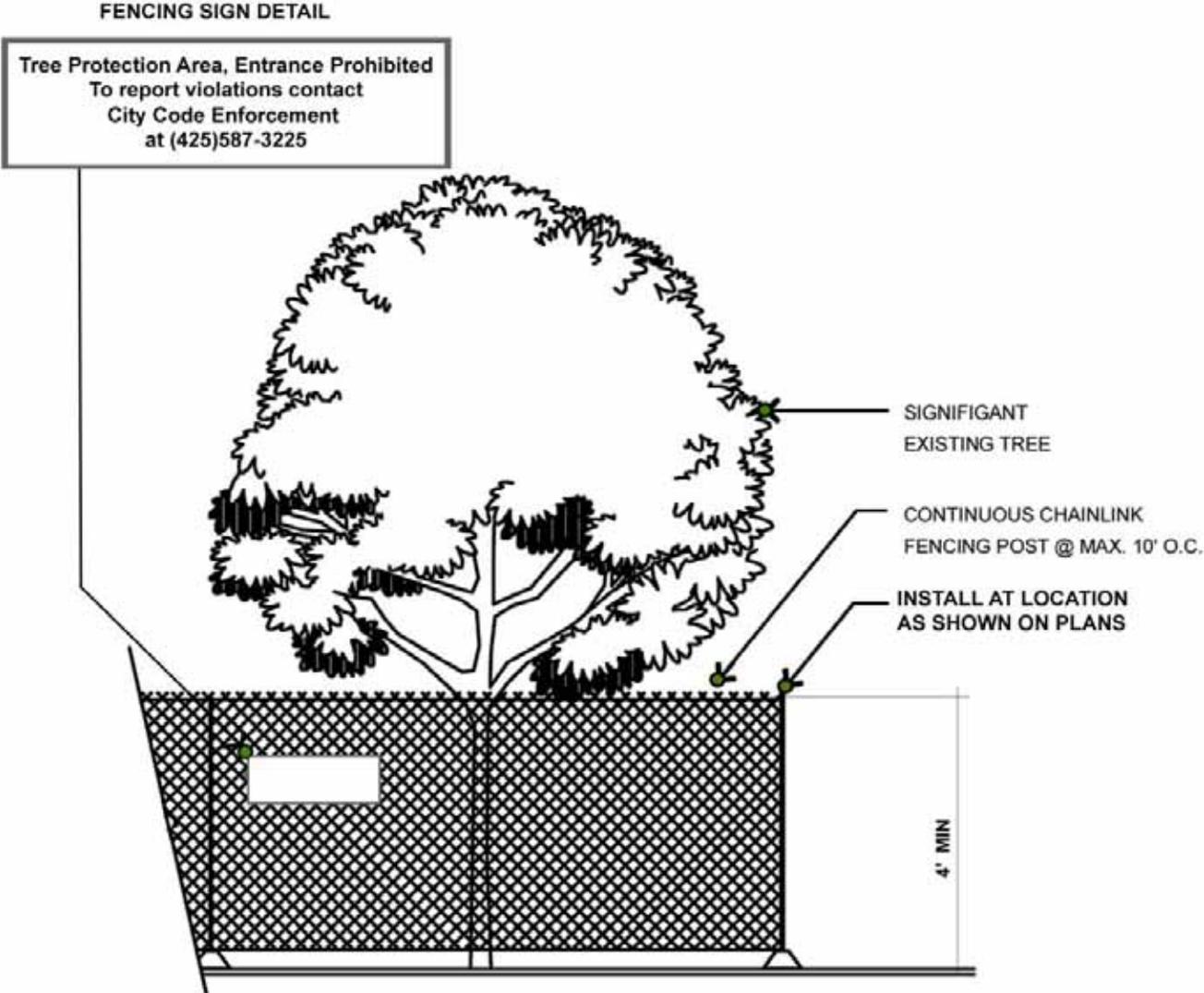
Tree no.	Species	DBH	Dripline	Limits of Disturbance			
				North	East	South	West
1085	Western red-cedar	6	8	4	6	ND	6
1086	Western red-cedar	6	8	4	6	ND	6
1087	Western red-cedar	6	8	4	6	ND	6
1088	Western red-cedar	6	8	4	6	ND	6
1089	Western red-cedar	6	8	4	6	ND	6
1090	Douglas-fir	10	14	7	7	7	7
1091	Douglas-fir	6	8	5	5	5	5
1092	Douglas-fir	8	6	5	5	5	5
1093	Douglas-fir	12	14	8	8	8	8
1094	Douglas-fir	20	18	10	10	10	10
1095	Douglas-fir	8	10	6	6	6	6
1096	Douglas-fir	14	16	8	8	8	8
1097	Douglas-fir	6	10	6	6	6	6
1098	Douglas-fir	12	8	6	6	6	6
1099	Douglas-fir	16	14	8	8	8	8
1100	Douglas-fir	14	16	8	8	8	8
1101	Douglas-fir	18	18	10	10	10	10
1102	Cherry	12, 12, 10	24	12	12	12	12
1103	Apple	6	10	7	7	7	7
1104	Plum	8	12	6	6	6	6
1105	Bigleaf maple	14, 14, 16	25	14	14	14	14
1106	Deodar cedar	18	16	10	10	10	10
1107	Bigleaf maple	12	16	8	8	8	8
1108	Scots pine	10	12	6	6	6	6
1109	Bigleaf maple	(4) 12	25	12	12	12	12
1110	Douglas-fir	12	6	5	5	5	5
1111	Douglas-fir	10	6	5	5	5	5
1112	Mugho pine	6	8	5	5	5	5
1113	Douglas-fir	10	6	5	5	5	5
1114	Bigleaf maple	18	20	10	10	10	10
1115	Douglas-fir	16	16	8	8	8	8
1116	Bigleaf maple	10	12	6	6	6	6
1117	Douglas-fir	12	10	6	8	ND	8
1118	Douglas-fir	10	12	7	9	ND	9
1119	Douglas-fir	10	8	6	8	ND	8
1120	Douglas-fir	10	8	6	8	ND	8
1121	Douglas-fir	14	16	8	10	ND	10
1122	Douglas-fir	10	8	6	8	ND	8
1123	Douglas-fir	12	14	7	9	ND	9
1124	Douglas-fir	18	16	8	10	ND	10
1125	Douglas-fir	12	12	6	8	ND	8
1126	Douglas-fir	12	10	5	7	ND	7
1127	Western red-cedar	14	12	6	8	ND	8

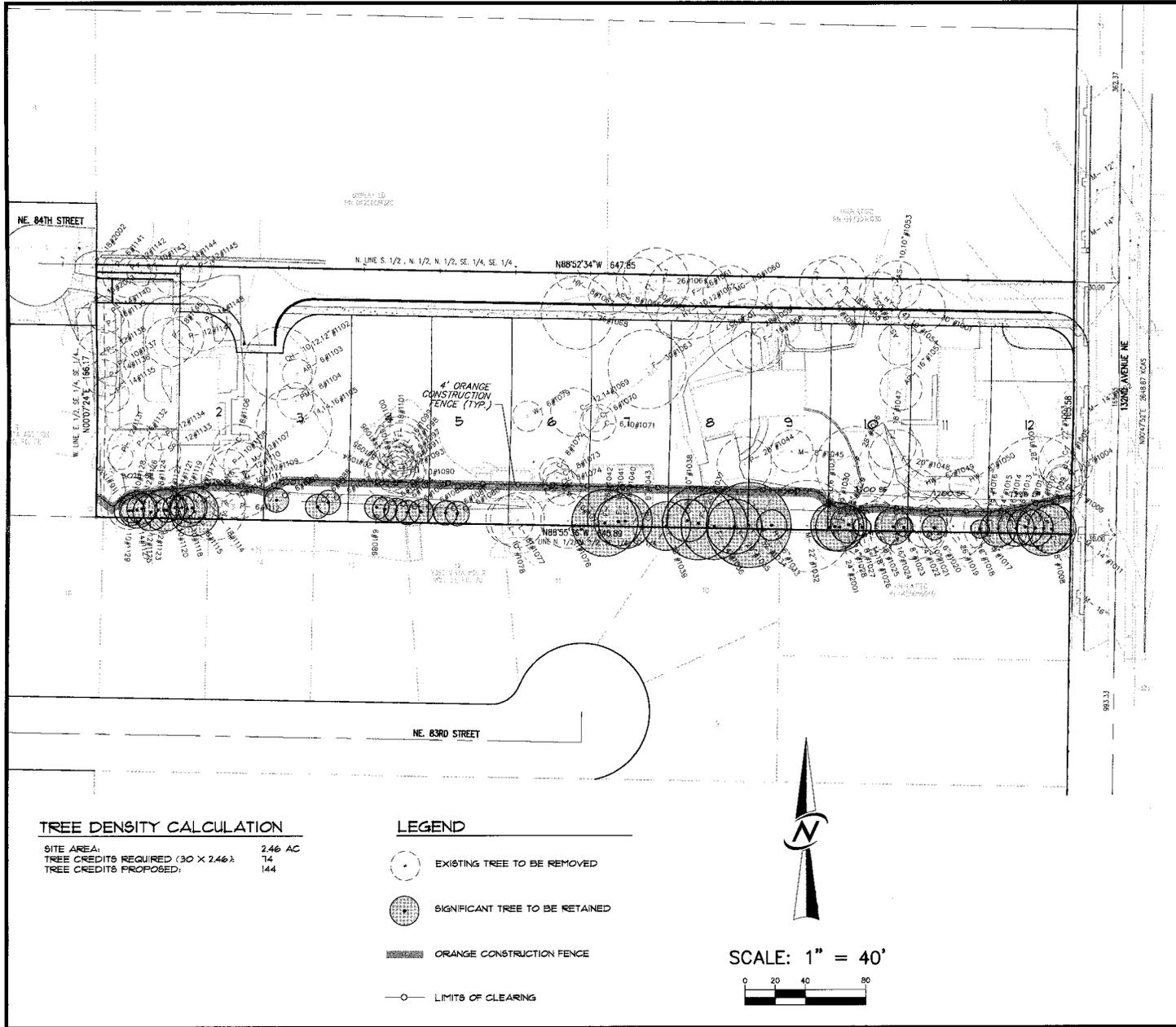
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Tree no.	Species	DBH	Dripline	Limits of Disturbance			
				North	East	South	West
1128	Western red-cedar	10	8	5	7	ND	7
1129	Western red-cedar	10	10	5	7	ND	7
1130	Western red-cedar	16	14	8	10	ND	10
1131	Pine	12	8	6	6	6	6
1132	Pine	16	18	11	11	11	11
1133	Spruce	14	12	8	8	8	8
1134	Pine	12	8	6	6	6	6
1135	Pine	14	12	8	8	8	8
1136	Pine	14	12	8	8	8	8
1137	Pine	10	12	8	8	8	8
1138	Pine	12	16	10	10	10	10
1139	Pine	16	18	11	11	11	11
1140	Pine	14	12	ND	8	6	8
1141	Pine	6	0	0	0	0	0
1142	Pine	12	16	ND	9	7	9
1143	Pine	10	10	ND	8	6	8
1144	Pine	14	16	ND	9	7	9
1145	Pine	12	12	ND	8	6	8
1146	Pine	18	16	11	11	11	11
1147	Pine	12	14	9	9	9	9
1148	Pine	14	18	11	11	11	11
2001	Douglas-fir	24	18	12	14	ND	14
2002	Pine	18	14	ND	8	6	ND
2003	Pine	16	16	6	7	ND	ND
2004	Pine	22	16	ND	PL	ND	ND
2005	Alder	12	14	6	6	ND	ND
2006	Cherry	24	35	PL	ND	ND	ND

(PL=property line, ND = no disturbance)

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TREE DENSITY CALCULATION

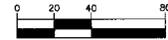
SITE AREA:	2.46 AC
TREE CREDITS REQUIRED (30 X 2.46):	74
TREE CREDITS PROPOSED:	144

LEGEND

-  EXISTING TREE TO BE REMOVED
-  SIGNIFICANT TREE TO BE RETAINED
-  ORANGE CONSTRUCTION FENCE
-  LIMITS OF CLEARING



SCALE: 1" = 40'





ENGINEERING · PLANNING · SURVEYING

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+252.886.7877 Fax +252.886.7963

PRELIMINARY TREE RETENTION PLAN
HARMON RIDGE
LAUREL HILL PARTNERS, LLC
4470 BEL-RED ROAD
BELLEVUE, WASHINGTON 98007

DATE: JANUARY 30, 2008

DESIGNED: _____

DRAWN: _____

APPROVED: _____

GARY SHARNBERG
PROJECT MANAGER

SHEET 5 OF 5

PROJECT NUMBER
07085

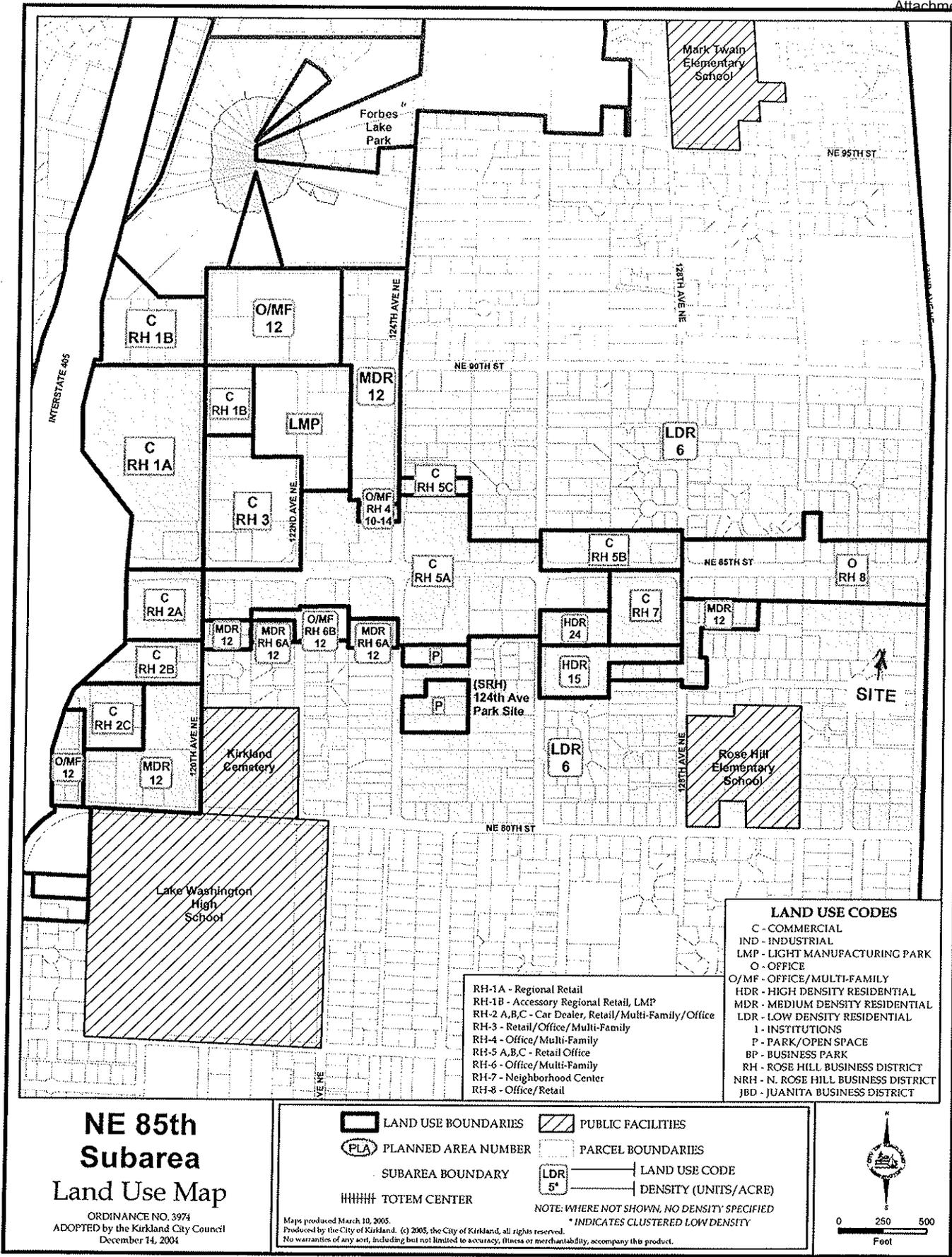


Figure NE85-2: NE 85th Subarea Land Use

XV.L-5

City of Kirkland

ENCLOSURE 8
 psb 08-00001
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