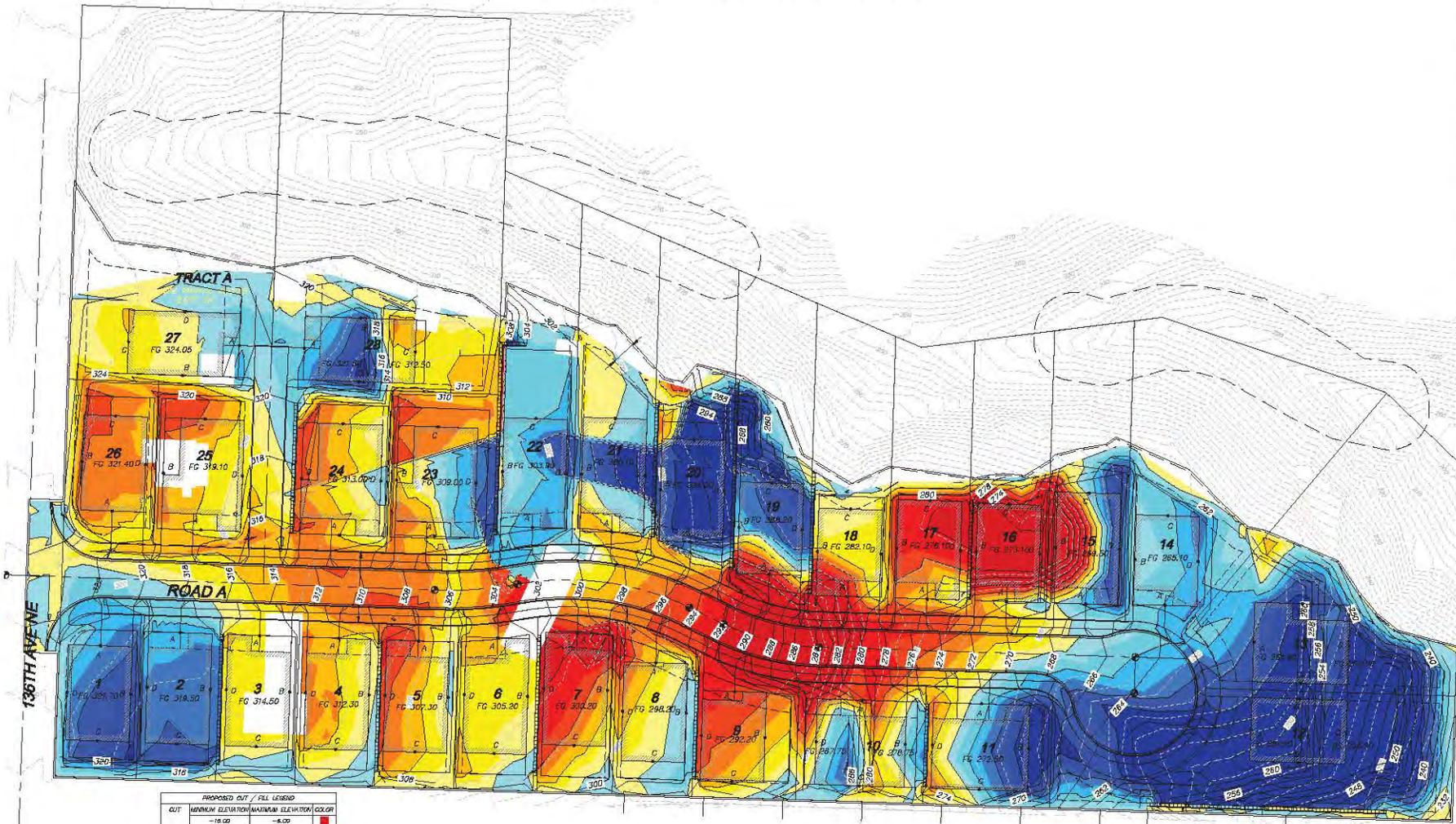


SW 1/4 SECTION 22, TOWNSHIP 26 N, RANGE 5 E, W.M.

CALLAN RIDGE PUD



PROPOSED CUT / FILL LEGEND			
CUT	MINIMUM ELEVATION	MAXIMUM ELEVATION	COLOR
-18.00	-18.00	-8.00	Red
-8.00	-8.00	-5.00	Orange
-5.00	-5.00	-4.00	Yellow-Orange
-4.00	-4.00	-3.00	Yellow
-3.00	-3.00	-2.00	Light Yellow
-2.00	-2.00	-1.00	Light Green
-1.00	-1.00	0.00	Light Blue
0.00	0.00	1.00	Blue
1.00	0.00	2.00	Dark Blue
2.00	0.00	3.00	Very Dark Blue
3.00	0.00	4.00	Black
4.00	0.00	5.00	Black
5.00	0.00	5.00	Black
5.00	5.00	15.00	Black
FILL	6.00	15.00	Black



DRS
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CONSULTING ENGINEERS
ENGINEERING PLANNING SURVEYING
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www.drseng.com

CALLAN RIDGE PUD
BUILDING HEIGHT EXHIBIT
1324 136TH AVENUE NE
KIRKLAND, WASHINGTON

GGM INVESTMENTS, LLC
9766 SE 36TH STREET, SUITE 105
MERCER ISLAND, WA
(206) 698-1147

DATE	REVISION	APP

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DRAFTED BY: CYW
DESIGNED BY: MAJ
PROJECT ENGINEER: MAJ
DATE: 10.13.16
PROJECT NO.: 12057

DRAWING: PT
SHEET: 1 OF 1

**CITY OF KIRKLAND
CAPITAL IMPROVEMENT PROGRAM
2017 TO 2022**

PROJECT #	TR 0127 000
DEPARTMENT	Public Works
DEPARTMENT CONTACT	Dave Snider

PROJECT TITLE	NE 132ND STREET/136TH AVENUE NE ROUND-A-BOUT		
PROJECT LOCATION	NE 132nd Street at 136th Avenue NE	PROJECT START	PROJECT STATUS
		2017	New Project

DESCRIPTION/JUSTIFICATION			
The construction of a three-legged round-a-bout at the intersection of NE 132nd Street and 136th Avenue NE in support of redevelopment in the Totem Lake Neighborhood.			

REASON FOR MODIFICATION (WHERE APPLICABLE)			

POLICY BASIS
Transportation Master Plan

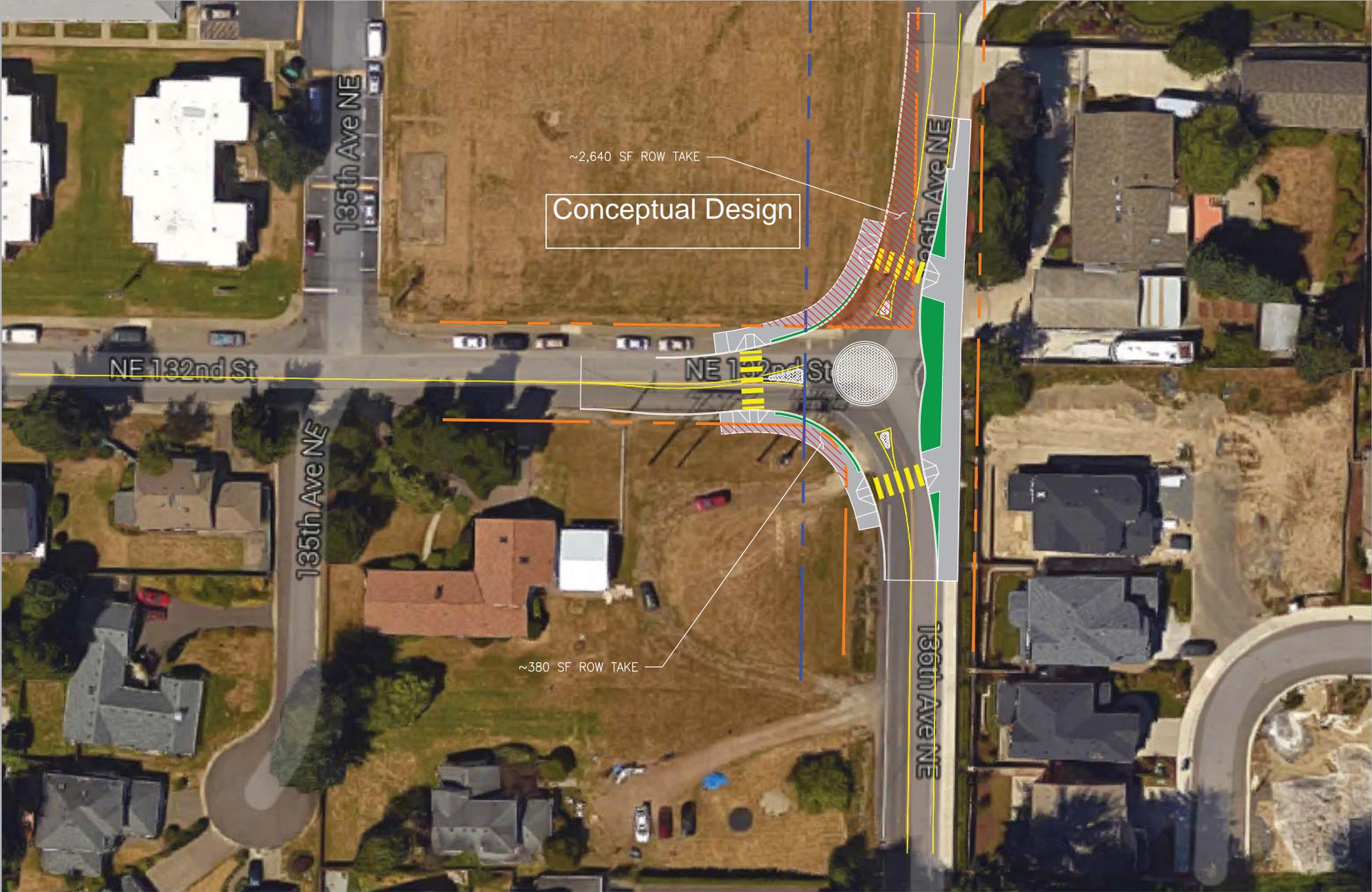
METHOD OF FINANCING (%)	
Current Revenue	17%
Reserve	0%
Grants	0%
Other Sources (Developer - \$266,000)	83%
Debt	0%
Unfunded	0%

CAPITAL COSTS	Prior Year(s)	2017	2018	2019	2020	2021	2022	2017-2022 TOTAL	Future Year(s)	Total Project
Planning/Design/Engineering	0	42,000	0	0	0	0	0	42,000	0	42,000
In-House Professional Svcs.	0	21,000	0	0	0	0	0	21,000	0	21,000
Land Acquisition	0	50,000	0	0	0	0	0	50,000	0	50,000
Construction	0	207,000	0	0	0	0	0	207,000	0	207,000
Comp. Hardware/Software	0	0	0	0	0	0	0	0	0	0
Equipment	0	0	0	0	0	0	0	0	0	0
Other Services	0	0	0	0	0	0	0	0	0	0
Total	0	320,000	0	0	0	0	0	320,000	0	320,000
NEW MAINT. AND OPER.	0	0	0	0	0	0	0	0	0	0
NEW FTE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**CITY OF KIRKLAND
CAPITAL IMPROVEMENT PROGRAM
2017 TO 2022**

PROJECT #	TR 0127 000
DEPARTMENT	Public Works
DEPARTMENT CONTACT	Dave Snider

PROJECT TITLE	NE 132ND STREET/136TH AVENUE NE ROUND-A-BOUT
CRITERIA	PROJECT IMPACTS (RESPOND TO ALL SECTIONS WHICH APPLY)
Amount of public disruption and inconvenience caused	<i>Temporary traffic and pedestrian delays during testing of installed system which is anticipated to last 1-2 months.</i>
Community economic impacts	<i>This project will allow the City to improve the transportation level of service and reduce intersection congestion.</i>
Health and safety, environmental, aesthetic, or social effects	<i>Congestion resulting from inadequate transportation systems lead to poor air quality, driver frustration, and possible traffic accidents.</i>
Responds to an urgent need or opportunity	<i>Development driven.</i>
Feasibility, including public support and project readiness	<i>Community support for traffic mitigation and improved mobility.</i>
Conforms to legal or contractual obligations	<i>Project will be designed and constructed to meet professional and legal requirements.</i>
Responds to state and/or federal mandate	<i>N/A</i>
Benefits to other capital projects	<i>N/A</i>
Implications of deferring the project	<i>Delays completion of the Transportation Network.</i>
CONFORMANCE WITH ADOPTED COMPREHENSIVE PLAN	Name of Neighborhood(s) in which located: <i>Totem Lake, North Rose Hill</i> Is there a specific reference to this project or land use in the immediate vicinity? How does the project conform to such references? Attachments <input type="checkbox"/> (Specify)
LEVEL OF SERVICE IMPACT	<input type="checkbox"/> Project provides no new capacity (repair, replacement or renovation). <input checked="" type="checkbox"/> Project provides new capacity. Amount of new capacity provided: 25% <input type="checkbox"/> Project assists in meeting/maintaining adopted level of service. <input type="checkbox"/> Project required to meet concurrency standards.





CITY OF KIRKLAND
Planning and Building Department
 123 5th Avenue, Kirkland, WA 98033
 425.587.3600 ~ www.kirklandwa.gov

DEVELOPMENT STANDARDS LIST

File: Callan Ridge Subdivision and PUD SUB16-00921 & ZON16-00927

PLANNING DEPARTMENT

TREE RETENTION STANDARDS

A tree retention plan was submitted with the preliminary subdivision in which the locations of all proposed improvements were known. KZC 95.30.4 & 95.30.5 known as an Integrated Development Plan, or IDP, applies in regards to tree retention. The approved IDP plan is included as Attachment 2 of the staff report. An arborist report was submitted by Greenforest Inc. There are approximately 254 significant trees on the site, of which 11 are viable high retention value trees and must be retained (see below), in addition to all trees within the stream buffer and steep slope. The City’s Contract Arborist reviewed the arborist’s report and proposed IDP identified the trees as high, moderate and low retention trees by number in the following chart. In summary the following conditions are recommended:

- Retain all trees within the stream, buffer and steep slope area to be identified as a native growth protection easement generally north of the top of the slope.
- High retention value trees which are not in the above area must be retained including trees #5820, 5821, 5822, 5823, 5861, 5917, 5919, 6460, 5610, 6434 and 6450.
- Moderate retention value trees retain if feasible include trees #6456, 6457 and 6438.
- Submit a critical area restoration plan pursuant to KZC 95.51 (6), to remove Nonnative Invasive and Noxious Plants and replant native vegetation within the stream buffer and slope: Per the KZC it is the responsibility of the property owner to remove nonnative invasive plants and noxious plants from the vicinity of any tree or other vegetation that the City has required to be planted or protected. Removal must be performed in a manner that will not harm the tree or other vegetation that the City has required to be planted or protected.
- ROW trees: Overhead power lines are adjacent to this properties frontage. Street trees selected for 136th Ave NE should be smaller stature to accommodate the clearance required for overhead power lines.

Significant Trees:	High Retention Value	Moderate Retention Value	Low Retention Value (V) – viable (NV) – not viable
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	Save Trees	(Retain if feasible)	
5820	X		
5821	X		
5822	X		
5823	X		
5824			Viable – possibly diseased
5861	X		
5862			Viable – suppressed by G
5917	X		
5919	X – still healthy with decay due to species		
6466			Not viable
6462			viable
6460	X		
6456		X	
6457		X	
5609			Not viable – thin canopy, yellow color, root zone compaction indicate disease presence
5610	X		
5611			Viable - suppressed
6447			Not viable - UDI
6438		X	
6434	X		
6450 (madrone)	X		
5481			Not viable - UDI
5479			Not viable - UDI
5478			Not viable - UDI
H			Not viable - UDI
5477			Not viable - UDI
5476			Not viable - UDI
5480			Not viable - UDI
5172			Not viable - UDI
5173			Not viable - UDI
I			Not viable - UDI
5215			Not viable - UDI
5214			Not viable - UDI
5340			Not viable
5136			Not viable - UDI
5135			Not viable - UDI
5134			Not viable - UDI

5133			Not viable - UDI
J			Not viable - UDI
K			Not viable - UDI
5157			Not viable - UDI
5156			Not viable - UDI
5155			Not viable - UDI
5757			Not viable - UDI
5756			Not viable - UDI
5758			Not viable - UDI
5759			Not viable - UDI
5755			Not viable - UDI
5807			Not viable - UDI
5816			Not viable - UDI
5854			Not viable - UDI
5855			Not viable - UDI
5911			Not viable - UDI
5910			Not viable - UDI
5909			Not viable - UDI
5908			Not viable - UDI

Modifications to the tree retention plan must be approved per KZC 95.30.(6).(b).

SUBDIVISION STANDARDS

KMC 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.

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

KMC 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.

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

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

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

KMC 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:

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

KMC 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.

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

KMC 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.

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

KMC 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.

KZC 118 Hazardous Liquid Pipelines:

If the subject property is within 150 feet of the Olympic Pipeline, include the following statement on the face of the plat "All development activity, landfilling, excavation and construction is subject to the setback requirements of KZC 118, Hazardous Liquid Pipelines"

KZC 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 occupancy:

KMC 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.

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

ZONING CODE STANDARDS

85.25.1 Geotechnical Report Recommendations. The geotechnical recommendations contained in the report by Earth Solutions NW, LLC 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.

90.80 Streams. No land surface modification may take place and no improvements may be located in a stream except as specifically provided in this Section.

90.90 Stream Buffers. No land surface modification may take place and no improvement may be located within the environmentally sensitive buffer for a stream, except as provided in this Section. Submit a vegetation restoration plan to remove nonnative vegetation while protecting the stream.

90.95 Stream Buffer Fence. Prior to development, the applicant shall install a six-foot high construction phase fence along the upland boundary of the entire stream buffer with silt screen fabric installed per City standard. The fence shall remain upright in the approved location for the duration of development activities. Upon project completion, the applicant shall install between the upland boundary of all stream buffers and the developed portion of the site, either 1) a permanent 3 to 4 foot tall split rail fence, or 2) permanent planting of equal barrier value.

95.50 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.

95.52 Prohibited Vegetation. Plants listed as prohibited in the Kirkland Plant List shall not be planted in the City.

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 detached dwelling unit.

105.47 Required Parking Pad. Except for garages accessed from an alley, garages serving detached dwelling units in low density zones shall provide a minimum 20-foot by 20-foot parking pad between the garage and the access easement, tract, or right-of-way providing access to the garage.

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 before 7:00 am. or after 8:00 pm Monday through Friday, or before 9:00 am or after 6:00 pm Saturday. No development activity or use of heavy equipment may occur on Sundays or on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas Day. The applicant will be required to comply with these regulations and any violation of this section will result in enforcement action, 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.

A detached dwelling unit may not have a fence over 3.5 feet in height within 3 feet of the property line abutting a principal or minor arterial except where the abutting arterial contains an improved landscape strip between the street and sidewalk. The area between the fence and property line shall be planted with vegetation and maintained by the property owner.

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. See conditions for PUD.

115.43 Garage Requirements for Detached Dwelling Units in Low Density Zones. Detached dwelling units served by an open public alley, or an easement or tract serving as an alley, shall enter all garages from that alley. Whenever practicable, garage doors shall not be placed on the front façade of the house. Side-entry garages shall minimize blank walls. For garages with garage doors on the front façade, increased setbacks apply, and the garage width shall not exceed 50% of the total width of the front façade. These regulations do not apply within the disapproval jurisdiction of the Houghton Community Council. Section 115.43 lists other exceptions to these requirements.

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 See Section 115.90 for a more detailed

explanation of these exceptions. See conditions for PUD.

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 Required Setback Yards. This section establishes what structures, improvements and activities may be within required setback yards as established for each use in each zone.

115.115.3.g Rockeries 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. See modification request and conditions of approval.

115.115.3.n Covered Entry Porches. In residential zones, covered entry porches on 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.

115.115.3.p HVAC and Similar Equipment: These may be placed no closer than five feet of a side or rear property line, and shall not be located within a required front yard; provided, that HVAC equipment may be located in a storage shed approved pursuant to subsection (3)(m) of this section or a garage approved pursuant to subsection (3)(o)(2) of this section. All HVAC equipment shall be baffled, shielded, enclosed, or placed on the property in a manner that will ensure compliance with the noise provisions of KZC 115.95.

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 be separated from other hard surfaced areas located in the front yard by a 5-foot wide landscape strip. Driveways 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.

152.22.2 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.

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.

85.45 Liability. The applicant shall enter into an agreement with the City, which runs with the property, in a form acceptable to the City Attorney, indemnifying the City for any damage resulting from development activity on the subject property which is related to the physical condition of the property (high landslide hazard area) (see Attachment @).

90.95 Stream Buffer Fence. Prior to development, the applicant shall install a six-foot high construction phase fence along the upland boundary of the entire stream buffer with silt screen fabric installed per City standard. The fence shall remain upright in the approved location for the duration of development activities. Upon project completion, the applicant shall install between

the upland boundary of all stream buffers and the developed portion of the site, either 1) a permanent 3 to 4 foot tall split rail fence, or 2) permanent planting of equal barrier value.

90.150 Natural Greenbelt Protective Easement. The applicant shall submit for recording a natural greenbelt protective easement, in a form acceptable to the City Attorney, for recording with King County (see Attachment @).

90.155 Liability. The applicant shall enter into an agreement with the City which runs with the property, in a form acceptable to the City Attorney, indemnifying the City for any damage resulting from development activity on the subject property which is related to the physical condition of the stream (see Attachment @).

95.30(4) 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.

95.34 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 6 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:

85.25.3 Geotechnical Professional On-Site. The geotechnical engineer shall submit a final report certifying substantial compliance with the geotechnical recommendations and geotechnical related permit requirements.

90.145 Bonds. The City may require a bond and/or a perpetual landscape maintenance agreement to ensure compliance with any aspect of the Drainage Basins chapter or any decision or determination made under this chapter. A @ is required for @. (see Attachment @).

95.51.2.a Required Landscaping. All required landscaping shall be maintained throughout the life of the development. The applicant shall submit an agreement to the city to be recorded with King County which will perpetually maintain required landscaping. Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built landscape plan and an agreement to maintain and replace all landscaping that is required by the City

95.51.2.b Tree Maintenance. For detached dwelling units, the applicant shall submit a 5-year tree maintenance agreement to the Planning and Building Department to maintain all pre-existing trees designated for preservation and any supplemental trees required to be planted.

95.51.3 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.

110.60.5 Landscape Maintenance Agreement. The owner of the subject property shall sign a landscape maintenance agreement, in a form acceptable to the City Attorney, to run with the subject property to maintain landscaping within the landscape strip and landscape island portions of the right-of-way (see Attachment @). It is a violation to pave or cover the landscape strip with impervious material or to park motor vehicles on this strip.

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.

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.

PUBLIC WORKS CONDITIONS

Public Works Staff Contacts

Building and Land Surface Modification (Grading) Permit Process:

John Burkhalter, Development Engineer Supervisor

Phone: 425-587-3846 Fax: 425-587-3807

E-mail: jburkhalter@kirklandwa.gov

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.
2. This project will be subject to Public Works Permit and Connection Fees. It is the applicant's responsibility to contact the Public Works Department by phone or in person to determine the fees. The applicant should anticipate the following fees:
 - o Surface Water Connection Fees (paid with the issuance of a Building Permit)
 - o Water and Sewer Connection Fees (Check with local utility district(s))
 - o Side Sewer Inspection Fee (Check with local utility district(s))
 - o Water Meter Fee (Check with local utility district(s))
 - o Right-of-way Fee
 - o Review and Inspection Fee (for utilities and street improvements).
 - o Building Permits associated with this proposed project will be subject to the traffic, park, and school impact fees per Chapter 27 of the Kirkland Municipal Code. The impact fees shall be paid prior to issuance of the Building Permit(s). Any existing buildings within this project which are demolished will receive a Traffic Impact Fee credit, Park Impact Fee Credit and School Impact Fee Credit. This credit will be applied to the first Building Permits that are applied for within the project. The credit amount for each demolished building will be equal to the most currently adopted Fee schedule.
3. Prior to submittal of a Building or Zoning Permit, the applicant must apply for a Concurrency Test Notice. Contact Thang Nguyen, Transportation Engineer, at 425-587-3869 for more information. A separate Concurrency Permit will be created.
4. 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 G-7, Engineering Plan Requirements. This policy is contained in the Public Works Pre-Approved Plans and Policies manual.
5. 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.
6. 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).
7. A completeness check meeting is required prior to submittal of any Building Permit applications.
8. Because this project is within 150' of the Olympic Pipe Line (Gas), the applicant is required to locate the eastern edged of the pipeline easement on all plans and is required to give notice

to Olympic Pipeline prior to any construction on this property. The City will not issue any construction related permits until proof of notice has been given and acknowledged by Olympic Pipe Line. Contact information:

Holly Williamson
Olympic Pipe Line Field Project Coordinator
2319 Lind AVE SW
Renton, WA 98057
Holly.Williamson@bp.com
425-235-7767

9. The required tree plan shall include any significant tree in the public right-of-way along the property frontage.

10. All subdivision recording documents shall include the following language:

o Utility Maintenance: Each property owner shall be responsible for maintenance of the sanitary sewer, storm water stub, rain garden, permeable pavement, or any infiltration facilities (known as Low Impact Development) 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, surface water stub, rain garden, permeable pavement, or any infiltration facilities, 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.

o 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.

If the lots have on-site private storm water facilities, include this language on the subdivision recording document:

o Maintenance of On-site Private Stormwater Facilities: Each Lot within the Subdivision has a stormwater facility (infiltration trench, dry wells, dispersion systems, rain garden, and permeable pavement) which is designed to aid storm water flow control for the development. The stormwater facility within the property shall be owned, operated and maintained by the Owner. The City of Kirkland shall have the right to ingress and egress the Property for inspection of and to reasonable monitoring of the performance, operational flows, or defects of the stormwater/flow control facility.

If the City of Kirkland determines related maintenance or repair work of the stormwater facility is required, the City of Kirkland shall give notice to the Owner of the specific maintenance and/or repair work required. If the above required maintenance or repair is not completed within the time set by the City of Kirkland, the City of Kirkland may perform the required maintenance or repair, or contract with a private company capable of performing the stormwater facility maintenance or repair and the Owner will be required to reimburse the City for any such work performed.

The Owner is required to obtain written approval from the City of Kirkland prior to replacing, altering, modifying or maintaining the storm water facility.

If the project contains LID storm improvements that will be installed as a condition of the new home Building Permit, then include this condition on the Short Plat recording documents:

o Installation of Low Impact Development (LID) storm drainage improvements with Building Permits: All LID storm drainage features depicted on Sheet ____ of ____ of issued permit LSM1X-

0XXXX shall be installed in conjunction with the construction of each new home on lots X to X. The LID improvements include, but are not limited to the rain gardens and the pervious driveways. The Building Permit for the new signal family home on lots X to X will not receive a final inspection until said LID improvements are installed. The pervious access road/Tract serving lots X and X shall be constructed or secured by a performance bond prior to recording of the short plat

Sanitary Sewer and Water System Conditions:

1. Woodinville Water District approval required for sewer and water service. A letter of sewer/water availability is required; call WWD at 425-487-4100.

Surface Water Conditions:

1. Provide temporary and permanent storm water control per the 2009 King County Surface Water Design Manual and the Kirkland Addendum (Policy D-10). See Policies D-2 and D-3 in the PW Pre-Approved Plans for drainage review information, or contact city of Kirkland Surface Water staff at (425) 587-3800 for help in determining drainage review requirements. The drainage review levels can be determined using the Drainage Review Flow Chart. Summarized below are the levels of drainage review based on site and project characteristics:

- Full Drainage Review
- A full drainage review is required for any proposed project, new or redevelopment, that will:

- Adds 5,000ft² or more of new impervious surface area or 10,000ft² or more of new plus replaced impervious surface area,

- Propose 7,000ft² or more of new pervious surface or,

- Be a redevelopment project on a single or multiple parcel site in which the total of new plus replaced impervious surface area is 5,000ft² or more and whose valuation of proposed improvements (including interior improvements but excluding required mitigation and frontage improvements) exceeds 50% of the assessed value of the existing site improvements.

2. A preliminary drainage report (Technical Information Report) must be submitted with the subdivision application. This must include a downstream analysis for all projects (except small project Type 1).

3. Evaluate the feasibility and applicability of dispersion, infiltration, and other stormwater low impact development facilities on-site (per section 5.2 in the 2009 King County Surface Water Design Manual). If feasible, stormwater low impact development facilities are required. See PW Pre-Approved Plan Policy L-1 or L-2 (depending on drainage review) for more information on this requirement.

4. Because this project site is one acre or greater, the following conditions apply:

- Amended soil requirements (per Ecology BMP T5.13) must be used in all landscaped areas.

- If the project meets minimum criteria for water quality treatment (5,000ft² pollution generating impervious surface area), the enhanced level of treatment is required if the project is multi-family residential, commercial, or industrial. Enhanced treatment targets the removal of metals such as copper and zinc.

- The applicant is responsible to apply for a Construction Stormwater General Permit from Washington State Department of Ecology. Provide the City with a copy of the Notice of Intent for the permit. Permit Information can be found at the following website: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/>

- o 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 PW Dept. pre-construction meeting with a completed SWPPP.

- Turbidity monitoring by the developer/contractor is required if a project contains a lake, stream, or wetland.

- A Stormwater Pollution Prevention and Spill (SWPPS) Plan must be kept on site during all

phases of construction and shall address construction-related pollution generating activities. Follow the guidelines in the 2009 King County Surface Water Design Manual for plan preparation.

5. If a storm water detention system is required, it shall be designed to Level II standards. Historic (forested) conditions shall be used as the pre-developed modeling condition.

6. This project is creating or replacing more than 5000 square feet of new impervious area that will be used by vehicles (PGIS - pollution generating impervious surface). Provide storm water quality treatment per the 2009 King County Surface Water Design Manual. The enhanced treatment level is encouraged when feasible for multi-family residential, commercial, and industrial projects less than 1 acre in size.

7. Provide a level one off-site analysis (based on the King County Surface Water Design Manual, core requirement #2).

8. 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.

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.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx>

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

9. A Hydraulic Project Approval (HPA) from WA State Department of Fish and Wildlife (WDFW) may be required for this project. Contact WDFW at 425-313-5681 or Christa.Heller@dfw.wa.gov for determination, obtain an HPA if required, and submit a copy to COK. If an HPA is not required, the applicant may be required to provide written documentation from WDFW as verification. More information on HPAs can be found at the following website: <http://wdfw.wa.gov/licensing/hpa/>

10. Provide an erosion control report and plan with Building or Land Surface Modification Permit application. The plan shall be in accordance with the 2009 King County Surface Water Design Manual.

11. Construction drainage control shall be maintained by the developer and will be subject to periodic inspections. During the period from May 1 and September 30, all denuded soils must be covered within 7 days; between October 1 and April 30, all denuded soils must be covered within 12 hours. Additional erosion control measures may be required based on site and weather conditions. Exposed soils shall be stabilized at the end of the workday prior to a weekend, holiday, or predicted rain event.

12. Provide collection and conveyance of right-of-way storm drainage

13. Provide a separate storm drainage connection for each lot. All roof and driveway drainage must be tight-lined to the storm drainage system or utilize low impact development techniques. The tight line connections shall be installed with the individual new houses.

14. Provide a plan and profile design for the storm sewer system.

15. Provide a 15' wide access easement to the storm detention control manhole; easement must be improved with 10' of asphalt and drainage control to protect against erosion.

16. A storm sewer "Joint Maintenance Agreement" must be recorded with the property for the jointly used storm sewer lines.

Street and Pedestrian Improvement Conditions:

1. The subject property abuts 136th Ave NE and proposed to create a new street. These streets are 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:

136th Ave NE

- A. Provide a note on the plans to replace any curb, gutter and sidewalk along the property frontage per the City of Kirkland Construction Inspector's Direction.
- B. Provide street trees 30' on center behind the sidewalk per the City of Kirkland Policy R-10.

New Plat Road

- A. Provide a 24' wide road from curb to curb. Terminate the road in a cul-de-sac 70' in diameter per CK-R.15.
 - B. Provide storm drainage, curb and gutter, 4.5' planter strip with street trees 30' on center, and 5' sidewalk along both sides and around the cul-del-sac.
 - C. Provide street and stop signs as necessary.
 - D. Dedicate sufficient right-of-way to encompass all required improvements (45' along road and 82' at cul-de-sac).
2. When three or more utility trench crossings occur within 150 lineal ft. of street length or where utility trenches parallel the street centerline, the street shall be overlaid with new asphalt or the existing asphalt shall be removed and replaced per the City of Kirkland Street Asphalt Overlay Policy R-7.
 - Existing streets with 4-inches or more of existing asphalt shall receive a 2-inch (minimum thickness) asphalt overlay. Grinding of the existing asphalt to blend in the overlay will be required along all match lines.
 - Existing streets with 3-inches or less of existing asphalt shall have the existing asphalt removed and replaced with an asphalt thickness equal or greater than the existing asphalt provided however that no asphalt shall be less than 2-inches thick and the subgrade shall be compacted to 95% density.
 3. Meet the requirements of the City of Kirkland Driveway Pre-Approved Policy R-4.
 4. 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.) and wide enough to park two cars (20 ft. min.).
 5. 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.
 6. Prior to the final of the building or grading permit, pay for the installation of stop and street signs at the new intersections.
 7. Install new monuments at the intersection of 136th Ave NE and the new access road and the center of the cul-de-sac.
 8. 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.
 9. Underground all new and existing on-site utility lines and overhead transmission lines.
 10. Underground any new off-site transmission lines.
 11. Zoning Code Section 110.60.9 establishes the requirement that existing utility and transmission (power, telephone, etc.) lines on-site and in rights-of-way adjacent to the site must be underground. The Public Works Director may determine if undergrounding transmission lines in the adjacent right-of-way is not feasible and defer the undergrounding by signing an agreement to participate in an undergrounding project, if one is ever proposed. In this case, the Public Works Director has determined that undergrounding of existing overhead utility on 136th Ave NE is not feasible at this time and the undergrounding of off-site/frontage transmission lines should be deferred with a Local Improvement District (LID) No Protest Agreement. The final recorded subdivision mylar shall include the following note:
Local Improvement District (LID) Waiver Agreement. Chapter 110.60.7.b of the Kirkland Zoning

Code requires all overhead utility lines along the frontage of the subject property to be converted to underground unless the Public Works Director determines that it is infeasible to do so at the time of the subdivision recording. If it is determined to be infeasible, then the property owner shall consent to the formation of a Local Improvement District, hereafter formed by the City or other property owners. During review of this subdivision it was determined that it was infeasible to convert the overhead utility lines to underground along the frontage of this subdivision on 136th Ave NE. Therefore, in consideration of deferring the requirement to underground the overhead utility lines at the time of the subdivision recording, the property owner and all future property owners of lots within this subdivision hereby consent to the formation of a Local Improvement District hereafter formed by the City or other property owners

12. New street lights may be 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. New street lighting must be LED.

13. A striping plan for the street must be submitted with the building or grading permit.

FIRE DEPARTMENT COMMENTS

Contact: Grace Steuart at 425-587-3660; or gsteuart@kirklandwa.gov

HYDRANTS

Hydrants shall be spaced so that there is a hydrant within 300 feet of any lot. There is an existing hydrant on 136th Ave NE directly across from the property. It appears one additional hydrant will be required, approximately in the vicinity of Lots 9 & 19 to meet the distance requirement.

All hydrants which serve the property shall be equipped with 5" Storz fittings.

FIRE FLOW

Fire flow requirement for single family development is 1,000 gpm. A certificate of water availability shall be obtained from the Water Purveyor, Woodinville Water.

SPRINKLER THRESHOLD

Per Kirkland Municipal Code, all new buildings which are 5,000 gross square feet or larger require fire sprinklers. This requirement also applies to new single family homes; the garage is included in the gross square footage. (This comment is included in the short plat conditions for informational purposes only.)

BUILDING DIVISION

You may contact Tanya Elder at 425-587-3614 for Building Department questions related to this permit.

1. The approved plans shall not be changed, modified, or altered without authorization from the building official. The approved plans are required to be on the job site.
2. This SUB Permit does not authorize any cutting or digging for new footings or foundations. A SEPERATE BUILDING PERMIT MUST BE ISSUED PRIOR TO ANY FOOTING OR FOUNDATION WORK.
3. No excavation or fill is authorized to encroach upon a neighboring property without explicit agreement by the adjoining property owner.

4. Separate demolition permit(s) are required prior to removal of any existing structures.
5. Separate building permit(s) are required for construction of any new buildings.

From: George Miller <miller_geo@hotmail.com>
Sent: Monday, June 20, 2016 4:54 PM
To: Susan Lauinger
Subject: ZON16-00927 & SUB16-00921

Hello, our address is 13625 NE 135th Place, and a green belt separates our home from the proposed development. We were curious how this green belt area will be handled, including on going maintenance of the large evergreen trees.

Best Regards,
George and Marjaneh Miller
(206)391-1962
miller_geo@hotmail.com

From: Karen Walter <KWalter@muckleshoot.nsn.us>
Sent: Monday, June 20, 2016 2:09 PM
To: Susan Lauinger
Subject: RE: Callan Ridge Notice of Application and Optional SEPA - ZON16-00927 & SUB16-00921

Susan,

We have reviewed the proposed Callan Ridge plat project referenced above and have some questions as noted below:

What analysis has been done to determine the feasibility of treating and infiltrating stormwater from this project? Per the checklist the project proposes to discharge to the on-site stream, an unnamed tributary to the Sammamish River. Ideally, if the site is conducive (and the presence of Alderwood sandy loam soils suggests it may be), the stormwater from this project should be treated and infiltrated, thus avoid a new discharge to the stream. This is important as farther downstream at the Astronics expansion project site, this same stream will be enhanced by removing existing infrastructure and planting native trees and shrubs in the riparian corridor.

We appreciate the opportunity to review this proposal and look forward to the City's responses.

Thank you,
 Karen Walter
 Watersheds and Land Use Team Leader

*Muckleshoot Indian Tribe Fisheries Division
 Habitat Program
 39015 172nd Ave SE
 Auburn, WA 98092
 253-876-3116*

From: Angela Martin [<mailto:aamartin@kirklandwa.gov>]
Sent: Friday, May 27, 2016 1:45 PM
To: Susan Lauinger
Subject: Callan Ridge Notice of Application and Optional SEPA - ZON16-00927 & SUB16-00921

Attached for your information are the Notice of Application, Environmental Checklist, Traffic Study and Site Plan for **Callan Ridge, File No. ZON16-00927 & SUB16-00921.**

If you have any questions you may contact **Associate Planner, Susan Lauinger** at slauinger@kirklandwa.gov or 425-587-3252.

Thank you,

Angela Martin
 Planning & Building Department
 Office Specialist
 425-587-3237
aamartin@kirklandwa.gov



Please don't print this e-mail unless you really need to. Reduce, Reuse, Recycle

From: Mark Hopwood <markhop@live.com>
Sent: Thursday, June 02, 2016 9:00 PM
To: Susan Lauinger
Subject: Regarding permit number ZON16-00927 & SUB1600921

I am for this development with a few restrictions. My main concerns center around safety and aesthetics. Both impacting each other.

Allowing the front yard setback variance lot coverage and height calculation changes proposed in the permits PUD would be a short term oversight with long term implications. These changes are not in keeping with the Kirkland neighborhood feel and make for less aesthetically pleasing neighborhoods that don't fit in. It unfairly punishes those already living here and would adversely impact the views of those already existing houses nearby. The lot coverage and setbacks and others all combine for less visual sight lines of the surrounding beauty and impact traffic safety at intersections.

These changes also make it so more vehicles will need to park in the street that is already too narrow or again detract from the beauty of the area.

Speaking of vehicles as part of the approval of this parcel the city needs to request that the intersection of 132nd St and 136th ave ne be turned into a 3way stop. Traffic at this residential intersection at peak times is impossible to navigate safely for several reasons.

1. Cars parked along 132nd between 136th ave ne and 135th Ave ne obstruct visibility.
2. The current intersection entices cars to cut the corner going over the center line.
3. Speeding through these residential streets with houses and apparent driveways is a frequent occupancy
4. Peak traffic means cars trying to turn onto 136th towards the subject property wait a long time. Same for those turning off of 136th.

By turning this into a 3way stop it would be consistent with other similar intersections on 132nd St where it turns into 90th Ave ne and intersects with 134th st. It would also encourage traffic to take alternate routes away from the residential houses and parks along this stretch of road. All of which will improve pedestrian and car safety as well as improve the quality of life for these new houses. Traffic is only going to get worse as the other 150 or so houses being built along the same road are completed and they add 200 or more cars traveling this road.

Another worry is the stretch of 136th Ave ne fronting this property. The cars parked on this road make it too narrow already. During construction this will be difficult to pass. And after the new houses are completed this will be a dangerous intersection to pass through as cars will be traveling close to the developments exit road which will have even further visibility issues if the PUD changes are also approved.

I'm all for the development of the property but lets not alter the rules for the benefit of one and lets address the safety of the roads leading to this area before someone get hurt.

Thanks for helping make all of Kirkland a place everyone wants to live.

Mark Hopwood
MARKHOP@live.com
13624 ne 13th St
Kirkland WA 98034

**CITY OF KIRKLAND**

Planning and Building Department
123 Fifth Avenue, Kirkland, WA 98033
www.kirklandwa.gov ~ 425.587.3600

DETERMINATION OF NON-SIGNIFICANCE (DNS)

Case No.: SEP16-00926

DATE ISSUED: August 10, 2016

Project Name: Callan Ridge PUD

Project Location: 13224; 13236 & 13240—136th Ave NE

Project Description: 28 lot subdivision and Planned Unit Development

Proponent: GGM Investments, LLC

Project Planner: Susan Lauinger

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.
- This DNS is issued after using the Optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

Responsible official:

August 8, 2016

Eric R. Shields, AICP, Planning Director Date
City of Kirkland
Planning & Building Department
123 Fifth Avenue, Kirkland, WA 98033 - (425) 587-3600

- You may appeal this determination to the Planning & Building Department at City of Kirkland, 123 Fifth Avenue, Kirkland, WA 98033 no later than 5:00 PM on August 24, 2016 by a Written Notice of Appeal. You should be prepared to make specific factual objections and reference case number SEP16-00926. Contact Susan Lauinger, project planner in the Planning & Building Department at (425) 587-3252 to ask about the procedures for SEPA appeals. See also KMC 24.02.230 Administrative Appeals.

Distribute this notice with a copy of the Environmental Checklist to:GENERAL NOTICING Department of Ecology - Environmental Review

- Muckleshoot Tribal Council - Environmental Division, Tribal Archeologist
- Muckleshoot Tribal Council - Environmental Division, Fisheries Division Habitat
- Cascade Water Alliance – Director of Planning
- Kingsgate Neighborhood Association
- Lake Washington School District No. 414: Budget Manager and Director of Support Services

AGENCIES WITH JURISDICTION, AFFECTED AGENCIES, AND/OR INTERESTED PARTIES

- Department of Fish and Wildlife – Olympia
- Washington State Department of Transportation – Local and Development Services Manager
- Muckleshoot Tribal Council - Environmental Division, Fisheries Division Habitat Program
- U.S. Army Corps of Engineers - Seattle
- Eastside Audubon Society
- Woodinville Water District - General Manager
- Seattle City Light - Department of Finance and Administration
- Parties of Record

cc: Applicant
Planning Department File, Case No. SUB16-00921

Distributed by:

(Justine Lybeck, Office Specialist)

August 10, 2016



CITY OF KIRKLAND
Planning & Building Department
 123 Fifth Avenue, Kirkland, WA 98033
 425.587.3600 - www.kirklandwa.gov

MEMORANDUM

To: Eric R. Shields, AICP, Planning Director

From: Susan Lauinger, Associate Planner

Date: August 8, 2016

Files: SEP16-00926; ZON16-00927 and SUB16-00921

Subject: ENVIRONMENTAL DETERMINATION FOR CALLAN RIDGE PUD AND 28 LOT SUBDIVISION

Address: 13224, 13236, & 13240 136th Ave NE + two adjacent vacant lots; Parcel numbers: 2226059117 and 2226059098 (see Enclosure 1).

PROPOSAL

American Classic Homes has applied for a 28-lot Preliminary Subdivision and Planned Unit Development (PUD) on 5 parcels (see Enclosure 2). The properties are in an RSA 6 zone within the Kingsgate Neighborhood, which allows a maximum density of 6 dwelling units per acre and a minimum lot size of 5,100 square feet. The proposal includes five separate parcels, three with existing homes and two that are vacant. All existing structures are proposed to be removed. There is a steep ravine along the north of the site and an intermittent stream at the bottom of the ravine.

The site is located at the northeast tip of the City limits with the closest intersection at 136th Avenue NE and NE 132nd Street, about 2 blocks east of 132nd Square Park. Access to the site will be taken from 136th Avenue NE via a new east/west public right-of-way ending in a cul-de-sac (see Enclosure 2).

ANALYSIS

SEPA rules require that an environmental and traffic review be completed for subdivision applications involving nine or more new lots. The Callan Ridge project includes application for 28 lots. The entirety of these rules can be found in Chapter 197-11 of the Washington Administrative Code (WAC).

SEPA rules provide a mechanism for local jurisdictions to use when their regulations do not provide standards that would mitigate or otherwise reduce the harm to the environment from the proposed action. When a development action is found to have *probable significant adverse environmental impacts*, it may be given a Determination of Significance (DS). If no probable significant adverse environmental impacts are found in environmental review, the project is given a Determination of Non-significance (DNS). If the project has impacts, but they can be mitigated, the City could issue an MDNS, or Mitigated DNS.

The SEPA "threshold determination" is the formal decision as to whether the proposal is likely to cause a significant adverse environmental impact for which mitigation cannot be identified. Where City regulations have been adopted to address an environmental impact, it is presumed that such regulations are adequate to achieve sufficient mitigation (see Washington Administrative Code (WAC) section 197-11-660(1)(e) and (g)). Therefore, when requiring project mitigation based on adverse environmental impacts, the City would first consider whether a regulation has been adopted for the purpose of mitigating the environmental impact in question.

As required, the applicant has submitted an environmental checklist and the City has reviewed that checklist (see Enclosure 3).

In addition to reviewing the environmental checklist, I have visited the site and have reviewed the following documents:

- Geotechnical Report by Earth Solutions NW, LLC dated April 12th, 2016 (see Enclosure 4).
- Traffic Impact Analysis prepared by TraffEx NW dated April 8th, 2016 (see Enclosure 5).
- City's Traffic Impact Analysis Review prepared by Thang Nguyen, City Transportation Engineer dated June 16, 2016 (see Attachment 6).
- Wetland and Stream report prepared by Sewall Wetland Consulting, Inc. dated November 24th, 2015 (see Enclosure 7).

The following issues are briefly addressed as they relate to the specific site and proposal.

Geologic Hazard Area:

The City's sensitive area maps indicate that there is a possible high landslide hazard area on the subject property, which consists of 5 separate parcels (see Enclosure 2).

Topography generally descends to the east from 136th Avenue NE and slopes are roughly 10% for 450 lineal feet. Steeper slopes are located along the north and east property boundaries and are associated with a ravine that has a roughly 40% slope. An intermittent stream runs along portions of the bottom of the ravine.

The vegetation on the flat portions of the site near the existing three homes consists mostly of large grassy areas with some tall hedges, and shrubs and landscaping that is typical of single family homes. The sloped area is heavily vegetated with a mix of coniferous and deciduous trees, understory forest plants, and some noxious weed cover such as Himalayan Blackberry.

The applicant was required to obtain a geotechnical report prepared by a qualified Geotechnical Engineer, which can be found as Enclosure 4.

Chapter 85 of the Kirkland Zoning Code (KZC) sets forth the regulations for properties that are identified as having possible geological hazards. These regulations do not require specific slope setbacks, but instead rely upon the expertise of the geotechnical engineer. In this case, the engineer for Earth Solutions NW, LLC recommends a 15' setback from the top of the slope. Other recommendations include: lowering the grade at Lots 15-18 due to fill placed in the past, and the geotechnical engineer review the grading permit. If the recommendations in the report are followed, the engineer has indicated that landslide potential is mitigated. The City will require that the recommendations be followed as part of the subdivision review.

Traffic:

The applicant submitted a traffic impact analysis report prepared by TraffEX (see Enclosure 5). The City's traffic engineer has reviewed the project for compliance with traffic impacts including volume and safety and found that no additional mitigations are needed in conjunction with the proposed Callan Ridge project (see Enclosure 6).

The applicant submitted a Planned Unit Development (PUD) permit with the 28-lot subdivision. As part of the application, the applicant is offering to fund a roundabout at the intersection of 136th Avenue NE and NE 132nd Street. This will be further analyzed as part of the PUD request.

Stream and wetland report

The City's sensitive area maps indicate a stream along the north boundary of the subject property. The applicant submitted a wetland/stream report by Sewall Wetland Consulting (see Enclosure 7). No wetlands were found, but an intermittent, discontinuous stream was found at the bottom of the steep ravine on the site. The report indicates that the stream flows only during storm events. Sewell Consulting conducted a site visit with Department of Fish and Wildlife (F&W) staff to determine the status of the stream. F&W determined that the drainage, although intermittent and discontinuous, is technically a stream per their regulations. This type of stream most closely corresponds with a Class C stream in the Kirkland Zoning Code, which requires a 25' setback and a 10' building buffer setback. The stream setback is fully encompassed within the slope setback required by the geotechnical engineer (See Enclosure 2, page 2). This project will not encroach in to the stream setback or building buffer setback

Conclusions:

I have had an opportunity to visit the site and review the environmental checklist for the project referenced above and all of the documents referenced in this memo. I have not found any probable, significant, adverse environmental impacts that cannot be mitigated through existing City regulations found in the Kirkland Municipal Code and Zoning Code.

Should you have any questions, please contact me.

Enclosures:

1. Vicinity Map
2. Short Plat Plans
3. Environmental Checklist
4. Geotechnical Reports prepared by Earth Solutions NW, LLC
5. Traffic Impact Analysis by TraffEX
6. City Traffic Engineer traffic review
7. Wetland and Stream report prepared by Sewell Wetland Consulting, Inc

Review by Responsible Official:

I concur

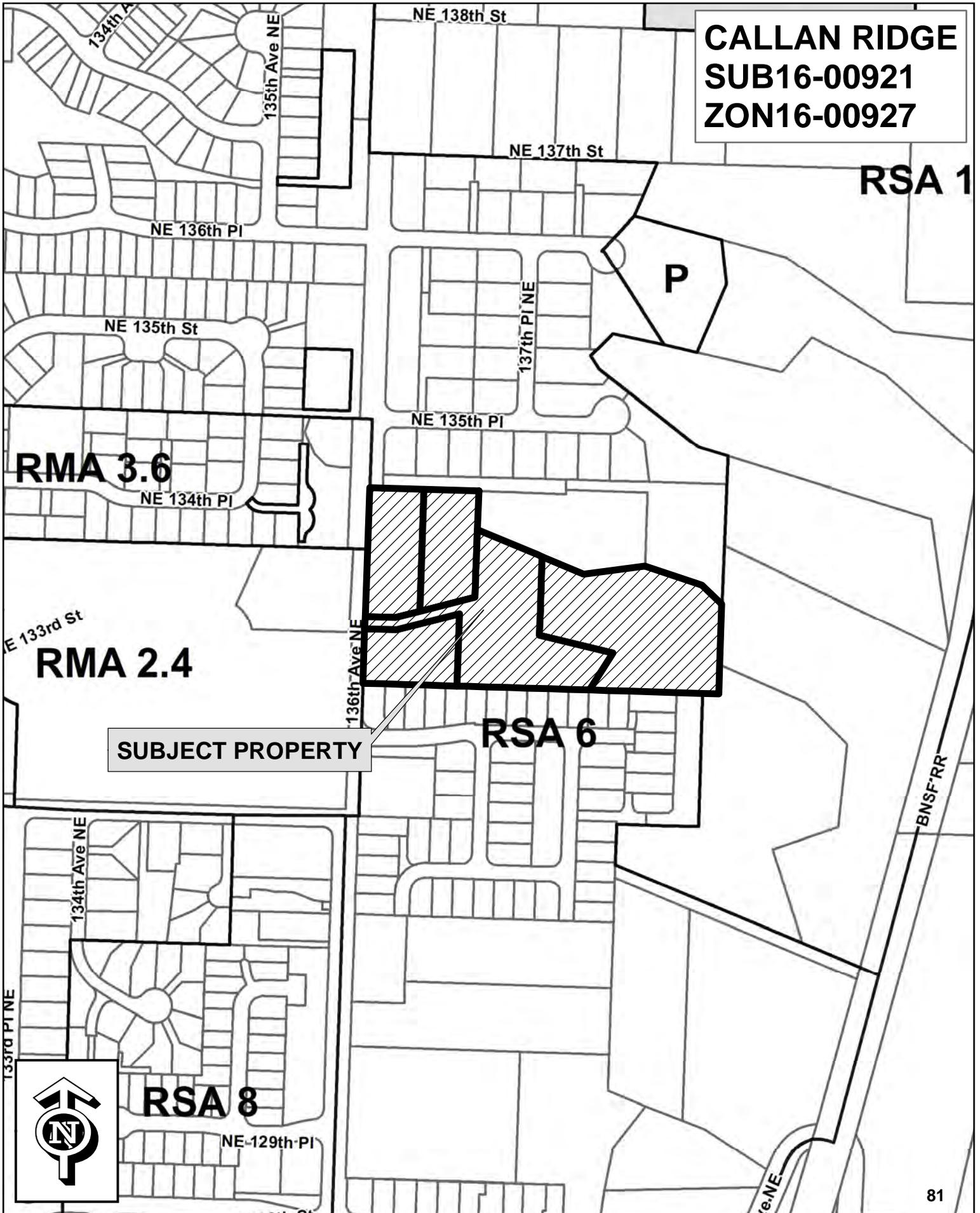
I do not concur

Comments: _____



Eric R. Shields, AICP
Planning Director

August 8 2016
Date



**CALLAN RIDGE
SUB16-00921
ZON16-00927**

RSA 1

P

RMA 3.6

RMA 2.4

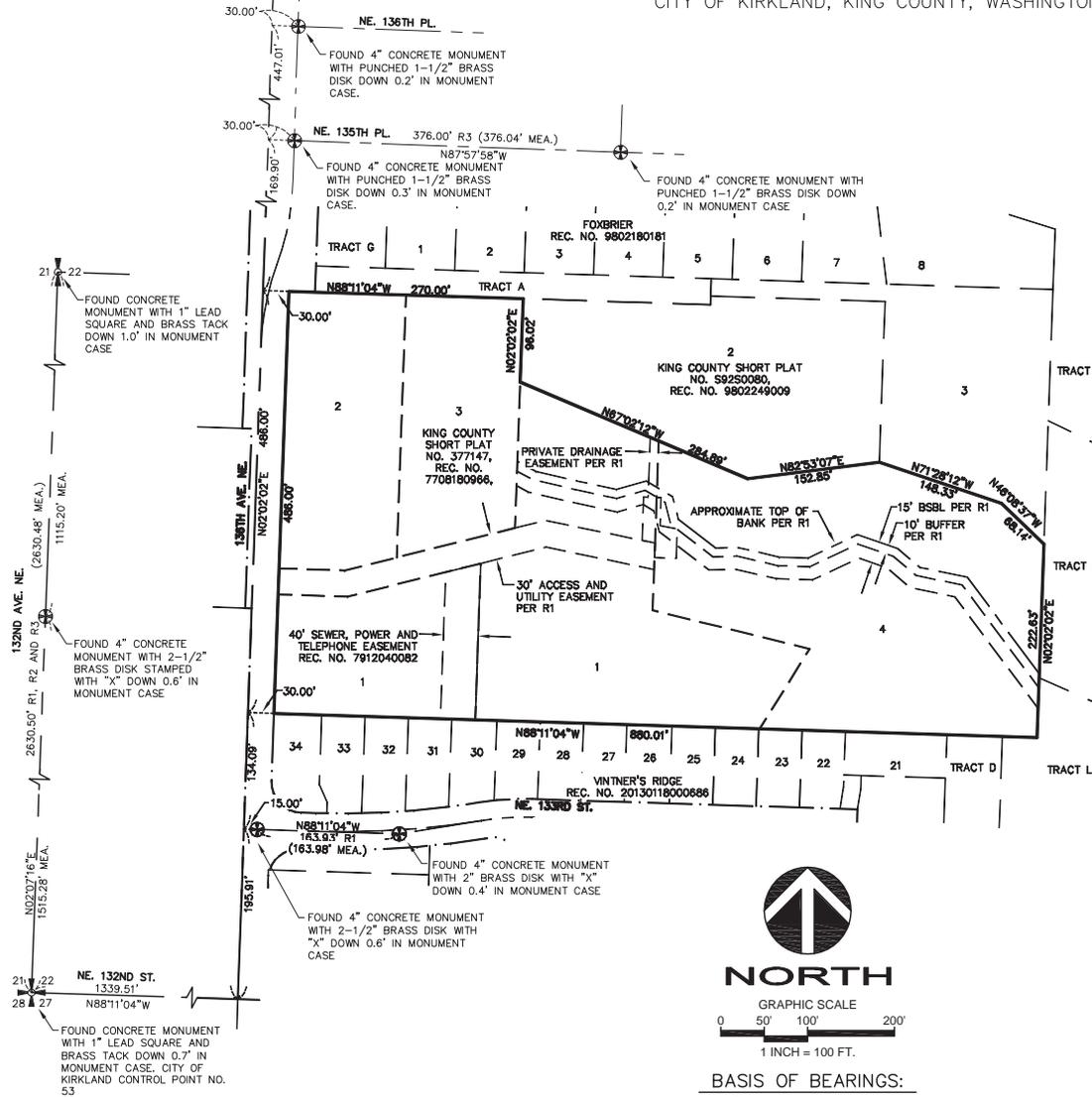
SUBJECT PROPERTY

RSA 6

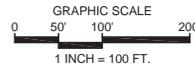
RSA 8

BNSF RR

CALLAN RIDGE PRELIMINARY PLAT
A PORTION OF THE SE. 1/4 OF THE SW. 1/4
SECTION 22, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M.,
CITY OF KIRKLAND, KING COUNTY, WASHINGTON



NORTH



BASIS OF BEARINGS:

N02°07'16"E BETWEEN THE MONUMENTS FOUND AT THE SOUTHWEST CORNER AND THE WEST QUARTER CORNER OF SECTION 27-26-5 PER REFERENCES 1, 2 AND 3

LEGEND:

- FOUND MONUMENT AS NOTED
- FOUND 1-3/8" PUNCHED BRASS DISC STAMPED "BRH LS 28072" EXCEPT AS NOTED OTHERWISE
- ROAD SIGNAGE
- POWER METER
- POWER POLE
- STREET LIGHT
- STREET LIGHT CONTROL BOX
- FIRE HYDRANT
- WATER VALVE
- STORM DRAIN MANHOLE
- CATCH BASIN
- SANITARY SEWER MANHOLE
- GAS VALVE
- GAS METER
- DECIDUOUS TREE
- EVERGREEN TREE
- VBF VERTICAL BOARD FENCE
- CLF CHAINLINK FENCE
- SRF SPLIT RAIL FENCE
- SS SANITARY SEWER LINE
- ST STORM LINE
- OP OVERHEAD POWER
- P POWER POINT
- G GAS POINT
- W WATER POINT
- C CABLE POINT
- EDGE OF PAVEMENT

VERTICAL DATUM:

NAVD 88 PER CITY OF KIRKLAND VERTICAL CONTROL

BENCHMARK:

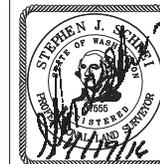
CITY OF KIRKLAND CONTROL POINT NUMBER 53, FOUND 4"x4" CONCRETE MONUMENT WITH TACK IN LEAD PLUG DOWN 0.7" IN MONUMENT CASE AT THE INTERSECTION OF 132ND AVENUE NE, AND NE. 132ND STREET, AKA THE NORTHWEST CORNER OF SECTION 27-26-5, ELEVATION=310.16 FEET.

REFERENCES:

1. KING COUNTY SHORT PLAT NO. S9250080, RECORDED UNDER RECORDING NUMBER 9802249009.
2. THE PLAT OF VINTNER'S RIDGE RECORDED UNDER RECORDING NUMBER 20130118000686.
3. THE PLAT OF FOXBRIER RECORDED UNDER RECORDING NUMBER 9802180181.



D.R. STRONG
CONSULTING ENGINEERS
ENGINEERS PLANNERS SURVEYORS
601 7TH AVENUE KIRKLAND, WA 98033
O 425.827.3083 F 425.827.2423
www.dstrong.com



A PORTION OF
THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER
OF SECTION 22, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M.
CITY OF KIRKLAND, KING COUNTY, WASHINGTON

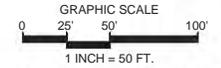
DWN. BY	SJS	DATE	04/14/16	PROJECT NO.	12057
CHKD. BY		SCALE	1"=100'	SHEET	2 OF 83

CALLAN RIDGE PRELIMINARY PLAT

A PORTION OF THE SE. 1/4 OF THE SW. 1/4
SECTION 22, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M.,
CITY OF KIRKLAND, KING COUNTY, WASHINGTON



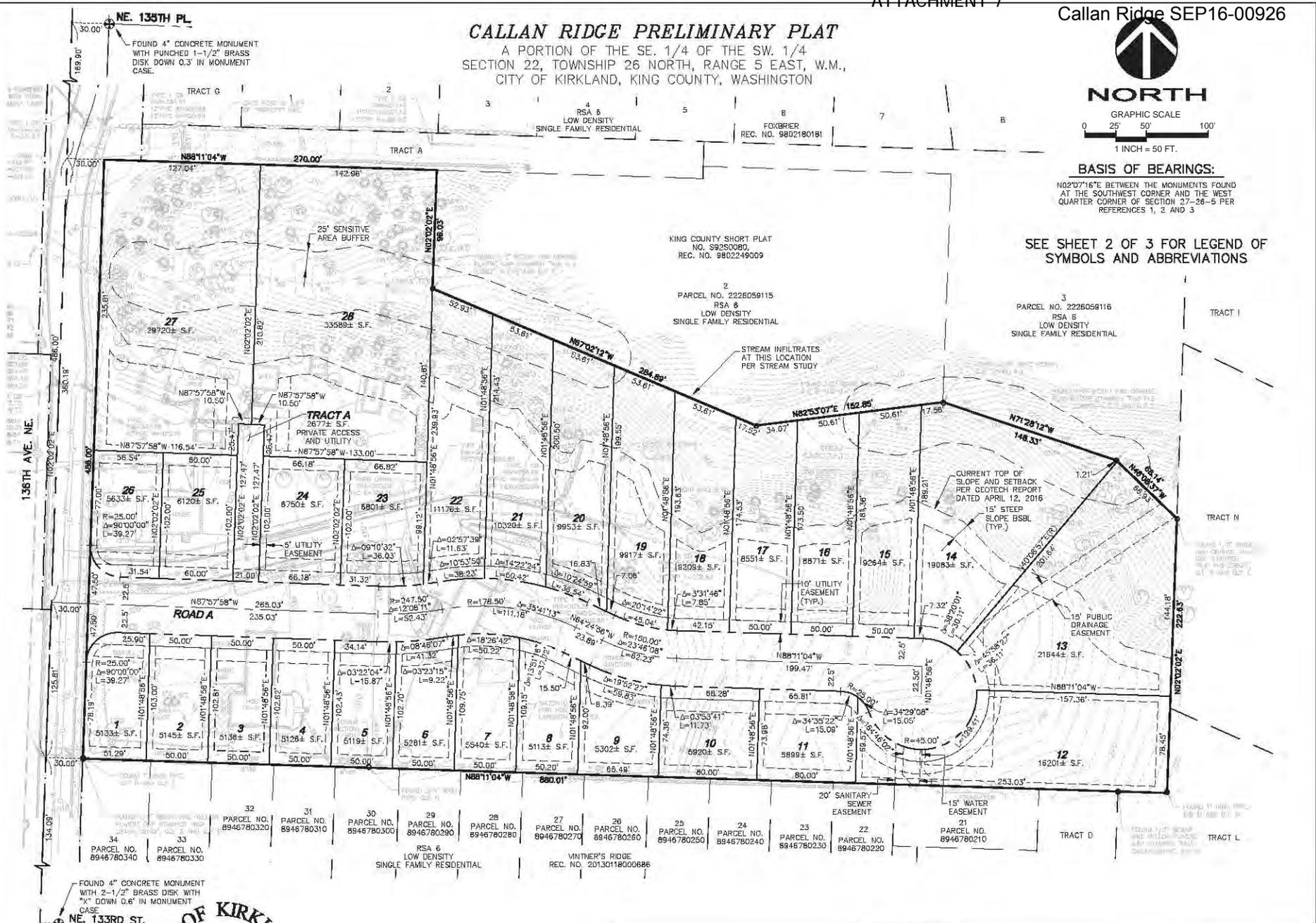
NORTH



BASIS OF BEARINGS:

N02°07'16"E BETWEEN THE MONUMENTS FOUND
AT THE SOUTHWEST CORNER AND THE WEST
QUARTER CORNER OF SECTION 27-26-5 PER
REFERENCES 1, 2 AND 3

SEE SHEET 2 OF 3 FOR LEGEND OF
SYMBOLS AND ABBREVIATIONS



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A PORTION OF
THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER
OF SECTION 22, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M.
CITY OF KIRKLAND, KING COUNTY, WASHINGTON

DWN. BY	SJS	DATE	04/14/16	PROJECT NO.	12057
CHKD. BY		SCALE	1"=50'	SHEET	3 OF 84



CITY OF KIRKLAND
Planning and Community Development Department
 123 Fifth Avenue, Kirkland, WA 98033
 425.587-3225 - www.kirklandwa.gov

SEPA ENVIRONMENTAL DOCUMENTS

If an application for a land use or building permit is subject to environmental review under Chapter 43.21C RCW, all SEPA environmental documents must be submitted with the filing of a land use permit or building permit application or the City will not accept the application.

The following is a list of the environmental documents that must be submitted with the land use or building permit application:

1. **Environmental Checklist.** The checklist form can be obtained from the Kirkland Planning Department.
2. **Road concurrency test decision memo.** Applicants must pass road concurrency *before* submitting for a land use or building permit and the environmental documents. Concurrency application forms are available from Public Works or the Planning Departments. If the application passes road concurrency, the Public Works Department's Transportation Engineer will provide the applicant or applicant's traffic engineer with a concurrency test decision memo and traffic information that needs to be included in the Traffic Impact Analysis. A copy of this memo must be submitted to show that road concurrency has been passed.
3. **Traffic Impact Analysis.** Traffic Impact Analysis Guidelines can be obtained from the Planning or Public Works Departments. The Traffic Impact Analysis is to be completed after the road concurrency test has been successfully passed. Information from the City's Transportation Engineer is to be included in the Traffic Impact Analysis along with all other information specified in the guidelines.
4. **Other supplemental environmental information.** Ask the assigned planner at the pre-application meeting what other environmental information will be required with the environmental submittal. All studies and reports must be prepared by a licensed and qualified specialist in the field and approved by the City. Supplemental impact assessment reports or studies that may be required include, but not be limited to the following:

- Lighting
- Environmental health hazard
- Historic
- Wetland and/or stream delineation and analysis, prepared or reviewed by the City's consultant
- Hydrology
- Wildlife
- Views
- Noise
- Geotechnical soils analysis

YOU ARE ENCOURAGED TO MEET WITH A PLANNER FROM THE DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT PRIOR TO AND DURING PROJECT DESIGN TO DISCUSS PROJECT DESIGN AND PROJECT COMPLIANCE WITH CITY REGULATIONS AND TO OBTAIN GUIDANCE ON THE ENVIRONMENTAL MATERIALS THAT YOU MUST SUBMIT.



CITY OF KIRKLAND ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), Chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the City identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the City decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant requiring preparation of an EIS. Answer the questions briefly with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the City staff can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The City may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impacts.

Use of Checklist for Non-project Proposals:

Complete this checklist for non-project proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON-PROJECT ACTIONS (Part D).

For non-project actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable: **Callan Ridge**
2. Name of applicant: **GGM Investments, LLC**

3. Address and phone number of applicant and contact person:
Contact: Carol Rozday
Address: 9675 SE 36TH ST, Suite 105 Mercer Island, WA 98040,
Phone: (206) 315-8130
4. Date checklist prepared: **April 19, 2016**
5. Agency requesting checklist: **City of Kirkland**
6. Proposed timing or schedule (including phasing, if applicable): **Plat construction is estimated to begin in Summer 2017.**
7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No
8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Tree Inventory and Arborist Report: Calvert Anderson – Greenforest Incorporated, April 1, 2016
Geotechnical Engineering Study: Calvert/ Anderson Property – Earth Solutions NW, LLC, April 12, 2016
Level One Downstream Analysis – D.R. STRONG Consulting Engineers, April 2016
Traffic Impact Analysis: Calvert Anderson PUD – TraffEx, April 8, 2016
9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No
10. List any government approvals or permits that will be needed for your proposal, if known.

Preliminary Plat
SEPA Determination
Forest Practices Permit (may be required)
Drainage Plan Approval
Grading Plan Approval
Water and Sewer Construction Plan Approval
NPDES Permit
Vault/Wall/Structural Permits
Final Plat Approval
Residential Building Permits
Right of Way Permits
Demolition Permit

- 11. Give brief, complete description of your proposal, including the proposed uses, the size and scope of the project and site including dimensions and use of all proposed improvements. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

This application proposes to subdivide five existing parcels totaling 7.35 acres into 28 single-family residential lots. The dimensional requirements of the proposed lots and buildings shall meet those set forth in KZC 18.10 for the RSA 6 zone. The northern portion of the site will remain undeveloped due to steep slope and sensitive areas.

- 12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The location of the project is 13240, 13224, & 13234 136th Ave NE Kirkland, Washington in the NW 1/4 of Section 22, Township 26 N, Range 5 E, W.M. The legal description and topographic survey have been included with the preliminary plat set. See Exhibit A for Vicinity Map.

TO BE COMPLETED BY APPLICANT

EVALUATION FOR
AGENCY USE ONLY
REVIEWED BY:

B. ENVIRONMENTAL ELEMENTS

1. EARTH

a. General description of the site (circle one): Flat, rolling, hilly, steep, slopes, mountainous, other

Developable area slopes generally from west to east from +/- 5-35%.

b. What is the steepest slope on the site (approximate percent slope)? +/- 80% in the steep slope area of the Site, in proposed lots 17 & 18.

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

The USGS Soil Survey indicates Alderwood series gravelly sandy loam with 8-15% (AgC) and 15-30% (AgD) slopes throughout the site. The Geotechnical Engineer's report is consistent with both the geologic map and soil survey designations.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

According to City of Kirkland GIS maps and the Geotechnical Engineering Report by Earth Solutions NW (April 2016), the steep slope area of the Site is considered to be within a high hazard landslide area.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

The purpose of the grading is to construct the proposed roadways and install plat infrastructure as required. Additionally, grading will be required to provide building pads for the residences. Anticipated required cut volume is 12,330 cy and approximate required fill volume is 13, 306 cy. 976 cy of structural fill will be needed on site.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Yes; Erosion control Best Management Practices (BMP's) will be used to minimize the effects of erosion during clearing and construction activities. BMP's such as perimeter protection, sediment retention, stockpiling and cover measures will be utilized to reduce potential erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt, buildings)?
+/- 46%

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

A temporary erosion and sedimentation control plan (TESC plan) will be prepared and implemented prior to commencement of construction activities. During construction, erosion control measures may include: silt fences, temporary sediment traps, chemical treatment for water quality, stabilized construction entrances, and other measures in accordance with local and state requirements. At project completion, permanent measures will include storm detention and water quality facilities.

2. AIR

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

Short-term emissions will be those associated with construction and site development activities. These will include dust and emissions from construction equipment. Long-term impacts will result from increased vehicle traffic, lawn equipment and others typical of a residential neighborhood.

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

Off-site sources of emissions or odors are those that are typical of residential neighborhoods. These will include automobile emissions from traffic on adjacent roadways and fireplace emissions from nearby homes.

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

The Washington Clean Air Act requires the use of all known, available, and reasonable means of controlling air pollution, including dust. Construction impacts will not be significant and could be controlled by measures such as washing truck wheels before exiting the site and maintaining gravel construction entrances, if required. In addition, dirt-driving surfaces will be watered during extended dry periods to control

3. WATER

a. Surface

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

Yes, there is an unnamed class 3 stream located on the north side of the Site. The stream flows into the Sammamish River.

Per KZC Chapter 90
Stream is a Class C

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Yes, grading for lots will require work within 200 feet of the described waters. Available plans are attached.

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

No grading will take place in the steep slope and sensitive areas.

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

No, there will be surface water withdrawals or diversions.

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

No.

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

discharge.

No, a public sanitary sewer system will be installed to serve the future homes.

b. Ground

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn, public water mains will be installed as part of the plat construction. No water will be discharged to groundwater, except through incidental infiltration of stormwater.

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

The site will be served by gravity sanitary sewer (piped). There will be no waste material discharged to the ground from the development. Post development stormwater runoff from roadways and home sites will be collected and conveyed to drainage facilities which will meet flow control and water quality requirements before discharging into the stream.

c. Water Runoff (including storm water):

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

Stormwater runoff from the developed site will be collected and conveyed to the detention vault located near the southeast corner of the site.

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

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

A City approved storm drainage system will be designed and implemented in order to mitigate any adverse impacts from stormwater runoff. The system will include temporary erosion control barriers during site construction. Treatment measures during construction could include treatment of turbid water through settling or other treatment as allowed by DOE (e.g. chitosan). The permanent system will ensure that prior to the release of stormwater into the downstream system, the system will have significantly reduced the potential impacts to ground and surface water.

4. PLANTS

- a. Place an "X" next to the types of vegetation found on the site:

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

- b. What kind and amount of vegetation will be removed or altered?
All vegetation within the developable area will be removed at the time of development. Landscaping will be installed in accordance with the provisions of the City Code.

- c. List threatened or endangered species known to be on or near the site.
None known or documented within the project area.

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:
Landscaping will be in conformance with City code.

5. ANIMALS

- a. What kinds of birds and animals have been observed on or near the site or are known to be on or near the site?

birds: hawk, heron, eagle, Songbirds, other:

mammals: deer, bear, elk, beaver, other:

fish: bass, salmon, trout, herring, shellfish, other

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

None to our knowledge

- c. Is the site part of a migration route? If so, explain.

Western King County as well as the rest of Western Washington, is in the migration path of a wide variety of non-tropical songbirds, and waterfowl, including many species of geese.

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

None proposed.

6. ENERGY AND NATURAL RESOURCES

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity and/or natural gas will serve as the primary energy source for heating and cooling for each home. These forms of energy are immediately available to the site. The builder will provide the appropriate heating and cooling systems which will be energy efficient and cost effective for the home-buyer.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

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

The required measures of the International Residential Code and State Energy Code will be incorporated in the construction. Energy conservation fixtures and materials are encouraged in all new construction.

7. ENVIRONMENTAL HEALTH

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

No. The Olympic Pipeline runs north/south to the west of the site. The road construction that will occur within the Olympic Pipeline easement will be done under the guidance and supervision of the pipeline operator. All work must be authorized by the pipeline operator before beginning.

- 1) Describe special emergency services that might be required.

No special emergency services will be required.

- 2) Proposed measures to reduce or control environmental health hazards, if any:

None.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

The primary source of off-site noise in the area originates from vehicular traffic present on adjacent streets.

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

Short-term impacts will result from the use of construction equipment during construction. Construction will occur during the day-light hours, and in compliance with all noise ordinances. Construction noise is generated by heavy equipment, hand tools and the transporting of construction materials and equipment. Long-term impacts will be those associated with typical residential areas and traffic.

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

Construction will be performed during normal daylight hours and/or per City of Kirkland requirements. Construction equipment will be equipped with noise mufflers and idling time will be encouraged to be kept at a minimum.

8. LAND AND SHORELINE USE

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

**Site: Single Family Residential
North: Single Family Residential
South: Single Family Residential
East: Greenbelt/Urban Separator Tracts
West: Multi-Family Residential**

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

No.

c. Describe any structures on the site.

There are three single-family homes along with detached garages and sheds currently located on the site.

d. Will any structures be demolished? If so, what?

All existing structures will be removed.

e. What is the current zoning classification of the site?

RSA 6

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

LDR

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

Not applicable.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

There exists a stream, high landslide hazard area, and steep slope area along the northern portion of the Site.

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

Approximately 70 people (28 x 2.5 persons per dwelling unit)

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

Approximately 8 people will be displaced as a result of the completed project.

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

None proposed because the current property owners are a proponent of the redevelopment of the property.

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

The proposed development is compatible with the prescribed land use codes and designations for this site. Per the City Zoning Code, the development is consistent with the density requirements and land use of this property.

9. HOUSING

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

The project contains 28 new homes; these homes are anticipated to be in the middle to high income price range.

- b. Approximately how many units, if any, would be eliminated? Indicate whether ATTACHMENT 7 high, middle, or low-income housing.

Three high income homes will be eliminated.

- c. Proposed measures to reduce or control housing impacts, if any:
None proposed because the current property owners are a proponent of the redevelopment of the property.

10. AESTHETICS

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

The maximum building height will conform to City of Kirkland Standards. The exterior building materials may include any of the following: wood, hardwood, manonry, cedar shakes and/or asphalt shingles.

- b. What views in the immediate vicinity would be altered or obstructed?
Views in the vicinity are not likely to be enhanced, extended or significantly obstructed by development of this project.

- c. Proposed measures to reduce or control aesthetic impacts, if any:
Landscaping will be installed by the applicant and future residences to provide an additional visual buffer.

11. LIGHT AND GLARE

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

Light and glare will be produced from building lighting as typical with single family residences. Light will also be produced from vehicles using the site. The light and glare will occur primarily in the evening and before dawn.

- b. Could light or glare from the finished project be a safety hazard or interfere with views?
Not to our knowledge.

- c. What existing off-site sources of light or glare may affect your proposal?
The primary off-site source of light and glare will be from vehicles traveling along the area roadways. Adjacent residential uses and streetlights may also create light and glare.

- d. Proposed measures to reduce or control light and glare impacts, if any:
Street lighting will be installed in a manner that directs light downward.

12. RECREATION

- a. What designated and informal recreational opportunities are in the immediate vicinity?
132nd Square Park is less than one-half mile from the site. Sammamish Valley Park and Sammamish River Trail Site are within one mile of the site.
- b. Would the proposed project displace any existing recreational uses? If so, describe.
No.
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
Park mitigation fees will be provided by the applicant.

13. HISTORICAL AND CULTURAL PRESERVATION

- a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.
None known.
- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.
None known.
- c. Proposed measures to reduce or control impacts, if any:
None, there are no known impacts. If an archeological site is found during the course of construction, the State Historical Preservation Officer will be notified.

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

Access will be from 136th Avenue NE.

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

Transit Service is available to the site and is provided by Metro Transit. The nearest transit stop is approximately 0.25 miles from the Site at 132nd Avenue NE and NE 132nd Street.

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

The completed project will provide garage and driveway parking spaces. Each residence will have a minimum of two spaces for a total minimum of 56 spaces. Additional parking spaces will be located on one side of the main plat road. Parking spaces associated with the existing single family residence will be eliminated.

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

A new 24-foot wide public plat access road is proposed. Approximately 35,901 s.f. of right of way will be dedicated to the City.

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

BNSF railroad tracks are located approximately 500 feet east of the Site. However, there are no known impacts.

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

According to the Traffic Impact Analysis, a total of 293 net new trips would be generated by the completed project. Peaks hours will generally be between 7AM and 9AM and 4PM and 6PM.

- g. Proposed measures to reduce or control transportation impacts, if any:
None proposed.

15. PUBLIC SERVICES

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.
Yes, the need for public servies will typical of a single family development of this size. The development is located in Lake Washington School District #414.

- b. Proposed measures to reduce or control direct impacts on public services, if any.
The roads and homes will be constructed to meet all applicable standards and codes of the County and the International Residential Code. The proposed development will contribute to the local tax base and provide additional tax revenue for the various public services. The impact to the schools, parks and traffic will be mitigated through the payment of impact fees.

16. UTILITIES

- a. What utilities (e.g.: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other) are currently available at the site?
**Electricity
Natural gas
Water
Refuse service
Telephone
Sanitary sewer.**

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
**Electricity will be provided by Puget Sound Energy (PSE)
Natural Gas will be provided by PSE
Water Service will be provided by Woodinville Water District
Sanitary Sewer will be provided by Woodinville Water District
Telephone Service will be provided by Frontier or Comcast
Refuse Service will be provided by Waste Management
Cable Television will be provided by Comcast**

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

[Statutory Authority: RCW 43.21C.110. 84-05-020 (Order DE 83-39), § 197-11-960, filed 2/10/84, effective 4/4/84.]



Geotechnical Engineering
Geology
Environmental Scientists
Construction Monitoring



**GEOTECHNICAL ENGINEERING STUDY
CALVERT / ANDERSON PROPERTY
RESIDENTIAL PLAT
136th AVENUE NORTHEAST
KIRKLAND, WASHINGTON**

ES-2471

PREPARED FOR
GGM INVESTMENTS, LLC

April 12, 2016


Scott S. Riegel, L.E.G.
Project Manager



Kyle R. Campbell, P.E.
Principal

GEOTECHNICAL ENGINEERING STUDY
CALVERT/ANDERSON PROPERTY
RESIDENTIAL PLAT
136TH AVENUE NORTHEAST
KIRKLAND, WASHINGTON

ES-2471

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Important Information About Your Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply the report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that

have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely on Your ASFE-Member Geotechnical Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.



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April 12, 2016
ES-2471

Earth Solutions NW LLC

- Geotechnical Engineering
- Construction Monitoring
- Environmental Sciences

GGM Investments, LLC
9675 Southeast 36th Street, Suite 105
Mercer Island, Washington 98040

Attention: Ms. Carol Rozday

Dear Ms. Rozday:

Earth Solutions NW, LLC (ESNW) is pleased to present this report titled "Geotechnical Engineering Study, Calvert/Anderson Property Residential Plat, 136th Avenue Northeast, Kirkland, Washington". Based on the results of our study, in our opinion, the proposed residential development is feasible from a geotechnical standpoint. In general, the subject property is generally underlain by medium dense to very dense glacial deposits. Isolated areas of fill are present and addressed in this report.

Geotechnical recommendations related to the proposed site development are provided in this geotechnical engineering study. If you have any questions regarding the content of this study, please call.

Sincerely,

EARTH SOLUTIONS NW, LLC

A handwritten signature in black ink, appearing to read "S. Riegel", is written over a circular stamp or seal that is partially obscured.

FOR: Scott S. Riegel, L.E.G.
Project Manager

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**GEOTECHNICAL ENGINEERING STUDY
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INTRODUCTION

General

This geotechnical engineering study was prepared for the proposed construction of a residential plat located in the east Totem Lake area of Kirkland, Washington. The purpose of this study was to excavate a series of test pits at accessible areas of the subject site, perform geotechnical analyses, and develop geotechnical recommendations for the proposed site development with a focus on the feasibility of constructing a site access roadway across a section of a steep slope. Our scope of services for completing this geotechnical engineering study included the following:

- Subsurface exploration and sampling;
- Laboratory testing of soil samples;
- Engineering analysis; and,
- Preparation of this report.

The following documents and/or resources were reviewed as part of this report preparation:

- Preliminary Site Plan prepared by D.R. Strong Engineers, Inc., dated January 21, 2015;
- Kirkland Municipal Code Chapter 85 – Geologically Hazardous Areas;
- Geologic Map of King County, Booth 2006, and;
- King County USDA Soil Conservation Survey.

Project Description

Based on preliminary project plans, 28 single-family residential lots will be created on the site. Egress will be provided via a new roadway alignment which will be accessed off 136th Avenue Northeast designated Northeast 133rd Street. A stormwater detention vault will be located in the southeastern corner of the site, within a topographic low area. The approximate location of the detention vault is depicted on Plate 2.

The Calvert property has been modified using hardscape elements such as modular block walls, rockeries and concrete retaining walls and general uncontrolled fill placement in other areas. As such, grading may be relatively extensive and could require cuts and fills of 10 to 12 feet or more to reconfigure the site.

Cuts of up to about 16 feet may be required to construct the detention vault, with the deepest cuts made along the western or up-slope side. Grading plans are being developed at this time; however, we anticipate retaining walls will be utilized along lot boundaries to accommodate the grade changes required to construct the building pads.

The proposed residential structures will consist of relatively lightly-loaded wood framing supported on conventional foundations with either crawlspaces or slab on grade floors. Based on our experience with similar developments, we anticipate wall loads on the order of 2 kips per lineal foot and slab-on-grade loading of 150 pounds per square foot (psf).

If the above design assumptions are incorrect or change, ESNW should be contacted to review the recommendations in this report, and provide supplement recommendations, if necessary.

Surface

The subject site is located along the east side of 136th Avenue Northeast in the east Totem Lake area of Kirkland, Washington. The approximate location of the subject property is illustrated on the Vicinity Map (Plate 1). The overall site consists of three adjoining properties listed as 13224, 13236 and 13240 – 136th Avenue Northeast that total about 12.26 acres. The project area is bordered to the north by a natural drainage ravine, to the south by existing residential development, to the east by a steep slope open area that descends to the valley floor and to the west by 136th Avenue Northeast. The approximate limits of the project area and the currently proposed layout of the building lots are illustrated on the Test Pit Location Plan (Plate 2). Topography generally descends gently to the east from 136th Avenue Northeast across the property. Steep slopes are located along portion of the north and east property boundaries and are associated with a natural drainage ravine. Based on information provided by the current property owner (Calvert), grading has occurred within some areas of the ravine area including, but not limited to, constructing a crude roadway crossing the ravine and removal of sandy alluvial deposits.

Subsurface

A representative of ESNW observed, logged and sampled six test pits in July 2012 and seven test pits in October 2015 excavated within the accessible areas of the site for purposes of assessing soil conditions and characterizing and classifying the site soils. Because the site is currently under ownership outside our client, test pit locations were primarily governed by limiting disturbance to improved areas. The approximate locations of the test pits are illustrated on the Test Pit Location Plan (Plate 2). Please refer to the test pit logs provided in appendix A for a more detailed description of the subsurface conditions.

Topsoil

A maximum of six inches of topsoil and sod was encountered in our test pits with an average depth of about four inches.

Fill

Fill was encountered at several test pit locations and primarily consisted of loose to medium dense silty sand (Unified Soil Classification SM). The fill contained scattered organic material and construction debris. Fill depths ranged from about four feet (TP-5) to 13 feet (TP-1). Approximate areas where non-engineered fills were placed are delineated on Plate 2. Areas of fill are also likely present near the existing structures.

Fill was encountered at test pit locations TP-105 and TP-108 extending to depths of about three and eight feet, respectively. The fill at location TP-108 consisted of medium dense silty sand and contained concrete pieces and debris near the base (seven feet below grade).

Native Soil

The native soil consisted predominantly of medium dense to very dense silty sand with gravel (SM). Scattered cobbles were observed at some test pit locations. Relatively clean sand (SP-SM) deposits were encountered at test pit location (TP-6).

Test pits excavated on October 2015 were focused along the top of the steep slope areas. In these test pits, underlying the fill (where encountered) medium dense to very dense silty sand with gravel (SM) and sand (SP-SM) native deposits were encountered extending to the maximum termination depth of about 15 feet below existing grades.

Groundwater

Groundwater seepage was not observed at the test pits at the time of our fieldwork (July 31, 2012 and October 21, 2015). Groundwater seepage rates and elevations fluctuate depending on many factors, including precipitation duration and intensity, the time of year, and soil conditions. In general, groundwater seepage flow rates are higher during the wetter, winter months. Therefore, groundwater seepage should be expected in site excavations, particularly in the winter and spring months. Because the predominant soil on this site is glacial till, water that is exposed during grading will be in a perched condition and will not be an established groundwater table.

Geological Hazard Areas

We reviewed Chapter 85 of the Kirkland Zoning Code (KZC) relating to geologically hazardous areas classifications, mitigation and development standards.

Erosion Hazard Areas KZC 85.13-2

KZC defines Erosion hazard Areas as follows:

Those areas containing soils which, according to the USDA Soil Conservation Service King County Soil Survey dated 1973, may experience severe to very severe erosion hazard. This group of soils includes, but is not limited to, the following when they occur on slopes of 15 percent or greater: Alderwood gravelly sand loam (AgD), Kitsap silt loam (KpD), Ragnar Indianola Association (RdE) and portions of the Everett gravelly sand loams (EvD) and Indianola Loamy fine sands (InD).

Based on review of the USDA SCS mapping resource, the development envelope is underlain by Alderwood series (AgC) 8 – 15 percent slope soils. The steeper sloped areas off the east side of the project are mapped as Alderwood series (AgD). The steeper slopes off the north side of the site would also be classified as AgD series soils. The topographic information was used to estimate slope gradients across the development envelope of the site. We have delineated areas that meet the slope criteria for potential erosion hazard (slopes of at least 15 percent). It is important to note that the majority of these areas were created during past grading.

The site development plans include regrading much of the site and such will result in exposed soil areas. Sediment-laden surface water should not be allowed to flow over the steep slope areas to the north and east of the project envelope. In our opinion, standard erosion hazard mitigation methods will provide an adequate level of safety with respect to erosion and off-site migration/transport of soil. ESNW should review the erosion control plan to confirm adequate measures are included and to provide supplemental recommendations.

High Landslide Hazard Areas KZC 85.13-4a

Kirkland classifies potential landslide hazard areas as either high or moderate. High potential landslide hazard areas are defined as follows:

Areas sloping 40 percent or greater, areas subject to previous landslide activities and areas sloping between 15 percent and 40 percent with zones of emergent groundwater or underlain by or embedded with impermeable silts or clays.

The slopes along the north and east site boundaries meet the criteria for High Landslide Hazard where slopes are inclined at least 40 percent. These areas are delineated on the referenced plan prepared by D.R. Strong. Test pits excavated near the top of the steep slope areas revealed generally firm glacial deposits.

Moderate Landslide Hazard Areas KZC 85.13-4b

Moderate potential landslide hazard areas are defined as follows:

Areas sloping between 15 percent and 40 percent and underlain by relatively permeable soils consisting largely of sand and gravel or highly competent glacial till.