CITY OF KIRKLAND
Parks and Community Services Department
123 Fifth Avenue, Kirkland, WA 98033
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MEMORANDUM

To: Kurt Triplett, City Manager

From: Lynn Zwaagstra, Director
Mary Gardocki, Park Planning and Development Manager

Date: March 10, 2023

Subject: Recreation and Aquatics Centers Feasibility Study (DRAFT)

RECOMMENDATION:

That City Council receives the draft Aquatics and Recreation Facility Feasibility Study that was part of the potential 2023 Parks Ballot Measure(s) exploratory process.

BACKGROUND DISCUSSION:

During the May 17, 2022 City Council meeting, staff received City Council's support to begin a Facility Feasibility Study process to evaluate the feasibility for an indoor aquatics and recreation center(s) to be considered as an element in the 2023 parks ballot measure. Staff completed the procurement process and selected Opsis Architecture (Portland, OR) as the consultant. The initial project scope of work included site analysis, market analysis, capital and operational analysis and the creation of four concept plans: one for a large facility, two options for medium facilities, a park redevelopment conceptual plan for Peter Kirk Park with a new facility.

During the November 15, 2022 City Council meeting staff presented a recommendation to narrow the site options and focus the study on only two potential sites for combined indoor facility(s): Houghton Park and Ride (HPR) and North Kirkland Community Center and Park (NKCC). This recommendation was reached based on consultant analysis and initial discussions by PFEC. Staff recommended and City Council concurred removing Juanita Beach Park as a site option due to site concerns and low scores using an evaluation matrix. Staff also recommended removing Peter Kirk Park & Community Center as a site option based on PFEC's feedback that the community is invested in this park and extensive engagement may be necessary to adequately explore options. City Council concurred with narrowing the site options.

Based on this direction, Opsis developed two (2) concepts for Houghton Park and Ride and there (3) concepts for NKCC with supporting capital and operating cost estimates for each. This information was presented to PFEC on January 26 and to City Council at the February 21 Study Session.

Staff continued to work with PFEC to further explain these concepts and answer questions to support their deliberations and to determine which items may be considered for the ballot measure(s), including a recreation and aquatics facilities. It is noted in the PFEC Report that PFEC was able to reach consensus for at least one (1) facility, although a specific option was not identified.

Feasibility Study Report
The attached draft report documents the entire planning and design process to date and the resulting five (5) viable design options being proposed.

This includes:

- Site Selection and Analysis
- Demographic and Market Analysis
- Stakeholder Input
- Facility Concept Design
- Capital and Operational Cost Analysis

Appendices include all supporting technical information provided by the sub-consultants and used to inform the concepts and ultimate design recommendations. The list of appendices include:

- Feasibility Study Cost Plan by DCW Cost Management
- Operational Plan HPR by Ballard*King
- Operational Plan NKCC by Ballard*King
- Civil Site Assessment by Station 10 Engineering
- Preliminary Geotechnical Findings by GeoEngineers
- Traffic & Parking Evaluation by TENW

Additionally, the following Opsis presentations were conducted throughout the development process and are available for review upon request. The presentations include:

1. Workshop 1 Presentation – 8/11/22 and 8/12/22
2. Workshop 2 Presentation – 9/16/22
3. Workshop 3 Presentation – 10/11/22
4. Workshop 4 Presentation – 11/9/22
5. Workshop 5 Presentation – 12/6/22
6. PFEC Presentation – 10/27/22
7. PFEC Presentation – 1/26/23
8. Council Presentation – 2/21/23

NEXT STEPS

Opsis is refining the report through professional design and formatting. The final report will be complete by March 31 and shared with stakeholders and the community.

Attachments:

Attachment A: Recreation and Aquatics Centers Feasibility Study (DRAFT)
Attachment B: Recreation and Aquatics Centers Feasibility Study (DRAFT) – Appendices (200+ pp) Optional

Attachment A

opsis

City of Kirkland

Recreation and Aquatics Centers Feasibility Study

A

by Opsis Architecture | March 2023

DRAFT

ACKNOWLEDGEMENTS

CITY OF KIRKLAND

City Council
Penny Sweet, Mayor
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Neal Black, Councilmember
Kelli Curtis, Councilmember
Amy Falcone, Councilmember
Toby Nixon, Councilmember
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TABLE OF CONTENTS

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DRAFT

EXECUTIVE SUMMARY

The Recreation and Aquatics Centers Feasibility Study (RAFS) is a comprehensive and fundamental planning effort for the City of Kirkland to develop and further document the need for recreation and aquatic opportunities for its community members. The City of Kirkland has been pursuing the construction of an aquatics and recreation center since 2001, most recently in November 2015 when voters declined to establish a Metropolitan Park District (MPD) to fund a facility, primarily due to concerns with the MPD structure. The Kirkland community continues to express interest in aquatics and recreation centers.

The ongoing needs and interests for additional aquatics and recreation centers were recently documented through community feedback during the 2022 update to the Parks, Recreation and Open Space (PROS) Plan. The PROS Plan process included completion of a community needs assessment survey that received over 3,000 responses. Additional feedback was gathered through various stakeholder and community group meetings, open houses, and public hearings. Aquatics and recreation centers emerged as one of the highest needs of the community during that process.

The Kirkland City Council has expressed the desire to pursue a potential ballot measure in November of 2023 to invest in aquatics and recreational facilities and other parks amenities and programs. In preparation for the ballot measure City Council recognized that additional planning and design is necessary in determining the size, configuration, features and costs of construction/operations for future recreation and aquatics facilities.

The framework for this study is built upon the PROS Plan and the multiple efforts by city leadership to deliver a better quality of life through health and wellness opportunities for everyone in Kirkland's diverse and vibrant community. In July 2022 Opsis and its design partners, initiated work with the Parks and Community Services Department (PCS) to develop a robust facility feasibility study to identify, evaluate and select potential site locations and develop design concepts for five recreation and aquatic facilities. Background information produced for the study include market analysis, preliminary geotechnical, environmental, traffic and parking evaluations. The information developed by the consultant team helped inform the site selection process and was foundational in the development of the concept designs and costs outlined in the study.

Site Selection and Analysis

Site selection was an integral part of the planning process. Four sites located within Kirkland were evaluated to support recreation and aquatic facilities. The four sites included Houghton Park & Ride, Juanita Beach Park, North Kirkland Community Center Park and Peter Kirk Park. These sites were offered by the City for analysis by Opsis: Houghton Park and Ride (which the City is intending to acquire with funds included in the Preliminary 2023-2024 budget), North Kirkland Community Center and Park, Peter Kirk Community Center and Park, and Juanita Beach Park. These four sites were chosen because they are publicly owned, or soon to be publicly owned, spaces that are large enough for development of facilities. Also, they are in different areas of the city, located close to current or future public transportation, and are easy to access.

Site evaluation criteria was developed to provide a framework for comparing the sites to one another. The criteria included development capacity, economic viability, stewardship of funding, support of diversity, equity, inclusion & belonging and regulatory approval. The primary criteria categories were further defined with sub-categories providing 18 areas of comparison. The criteria was evaluated on a 4-

point scale with "excellent" being the highest score and "poor" being the lowest. Utilizing this methodology revealed that Houghton Park & Ride and North Kirkland Community Center Park were best suited to support the development of recreation and aquatics facilities. Greater detail regarding the site selection process is contained within the body of this report.

Demographic and Market Analysis

The initial demographics and market analysis was developed in parallel with the site selection process to help inform the evaluation site criteria and provide data driven information to assist the design and PCS team in making informed decisions. Nationally recognized sports and recreation consultant Ballard*King & Associates used their years of experience working with communities throughout the country to quantify and qualify the various needs of the Kirkland community as well as what types of facilities can be supported. Their analysis highlighted that a growing number of families, adults, and seniors need more indoor places to play, recreate, and swim and that Kirkland is a stable and growing community with community members that have the ability to pay for the programs and services outlined in this study. Looking at national benchmarks reveals that the City is comparatively behind other communities of its size in terms of providing recreation and aquatic opportunities for its population.

Stakeholder Input and Engagement

The robust community engagement included in the PROS Plan provided the impetus for this feasibility work. Community engagement and input for this study was sought through City staff and the Parks Funding and Exploratory Committee (PFEC). The design team had two touch points with PFEC during the study including a virtual meeting in October 2022 and an in-person presentation with questions and answers in January 2023. During the October meeting, a preference for the Houghton Park and Ride site and North Kirkland Community Center and Park site was revealed. Both Peter Kirk Park and Juanita Beach sites were eliminated from further consideration at that time due to site complexity, nostalgia and low scores from the criteria review. The PFEC and City Council provided input and feedback on the types of programs proposed for the facilities. This input and final site selections informed the concept designs developed for the study. The January meeting included a review of the final concept designs at each site including, capital, operating and potential annual costs to Kirkland taxpayers.

Facility Concept Design

The concept designs were developed using program data refined through a month's long iterative process with PCS. The final program and required space needs are a direct reflection of the market analysis and seek to provide needed opportunities and activities for the Kirkland community. The concepts embrace the idea of creating equitable allocation of recreation, aquatic and community activities by providing complementary services at Houghton Park & Ride and North Kirkland Community Center/Park.

A total of five concept options were developed which include:

- Houghton Park and Ride
  - Option A – Recreation/Aquatics/Community (103,000 square foot facility)
  - Option B – Recreation/Aquatics/Community (86,000 square foot facility)
- North Kirkland Community Center Park
  - Option A - Recreation/Aquatics/Community (74,000 square foot facility)
  - Option B1- Recreation/Community (49,000 square foot facility)
  - Option B2 - Aquatics/Community (49,000 square foot facility)

The larger Houghton Park and Ride (HPR) site and location, allows for access to multimodal transportation and is adjacent to major arterial roadways including I-405, making it best suited to

accommodate th e larger build out of both program areas and parking identified for both concept options. The major differences between HPR Option s A and B are the utilization of a 3 -court gym verses a 2-court gym and a lap pool with 8 -lanes verses 6 -lanes. The larger area in Option A also require s the program areas be distributed over 3 levels in lieu of 2 levels. Building upward in lieu of outward allowed for a more cost -effective parking garage footprint and provides opportunity for westward views of Lake Washington from the upper level community rooms.

The North Kirkland Community Center Park (NKCC) site presents both challenges and opportunities. The site is in a residential neighborhood but has access to multimodal transportation along NE 124th St. and access east to I -405. The sloping site provides the opportunity to recess program areas and parking in to the topography and maintain a residential scale of building above grade. The program for NKCC Option A includes a 2 -court gym, recreational and community focused programing , and a recreation pool. Option B1 and B2 are identical in size and configuration . The primary difference between the options is that Option B1 has a 2 -cou rt gym while Option B2 has a recreation pool in lieu of the gym.

All NK CC options will require frontage improvements along 103rd Ave. NE. The frontage improvements are necessary t o provide traffic calming for vehicles entering the facility. Traffic calming devices such as a rai sed crosswalk and longer left -hand queuing lane on 103rd Ave. NE. will provide safe pedestrian access to and from the children's play area located on the no rth section of the park. A traffic signal will also be required at the corner of NE 124th St. and 103rd Ave. NE. to accommodate the increased vehicular and pedestrian traffic to the site.

Capital and Operational Cost Analysis

Preliminary project cost estimates were provided by DCW Cost Management for the five concept designs outlined in the study. The feasibility cost plan was developed by analyzing the concept designs, architectural narrative, geotechnical, environmental and traffic analysis. The costs for each option include design and construction contingencies as well as escalation through May 2025.
The total project cost summary includes both construction cost s, indirect construction costs, and escalation. The entirety o f the feasibility cost plan is included in the appendix of this report.

Operational costs were developed using the concept design program and plans. As part of the feasibility study process, B allard *King (B*K) developed an independent third -party plan fo r each of the concept options Kirkland is considering. Development of the operational plans is based on the market, the PCS cost recovery goals, and B*K's familiarity with operating similar facilities in the region . The operational analysis assumes a con servative approach to the development of each plan to not underestimate the funding required to operate and maintain the facilities. The operational plans are included in the appendix.

Recommendations

The Recreation and Aquatics Centers Feasibility Study is one component of the potential 2023 Parks Ballot Measure(s) exploratory process. This feasibility study and report concludes with five (5) viable options for consideration. These final options were s hared with PFEC in January and City Council in February. Results and recommendations regarding these facility options and other elements from the PFEC process will be shared with City Council in March.

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PLANNING PROCESS

SUMMARY

The planning process involved City staff and was initiated over a two-day workshop which included an initial on-site meeting with tours of the potential Recreation and Aquatics Centers sites. The City identified four sites as having the greatest potential to support new recreation and aquatic programming. The main site considerations focused on city-owned or soon-to-be owned city properties that are geographically equitable for the community. The four sites included Houghton Park & Ride, Juanita Beach Park, North Kirkland Community Center Park and Peter Kirk Park. During the workshop the design team and City staff collaborated on the creation of site evaluation criteria to be used in the site selection process and outlined the geotechnical, environmental and traffic information needed to inform the evaluation effort.

Once the evaluation criteria was established GeoEngineers, Station 10 Engineering and TENW provided preliminary evaluations of geotechnical, environmental, civil and traffic conditions at the proposed sites.

GeoEngineers - Geotechnical: performed a site visit to each of the four proposed sites, and reviewed existing information, including geologic maps, previous geotechnical reports, available nearby well logs, and geologic hazard maps. Their findings were summarized for each of the four proposed sites. Project specific subsurface explorations were not advanced as part of their evaluation; however, preliminary geotechnical findings did provide quantifiable metrics to evaluate the sites under consideration.

GeoEngineers - Environmental: conducted a study to be used to help develop a short-list of preferred sites. Their engineers completed background data research on existing mapped critical areas on or adjacent to each of the four potential sites. Critical areas that were considered include wetlands, streams, lakes, wildlife habitat areas, frequently flooded areas, and associated buffers. They also reviewed jurisdiction under the Shoreline Management Act but did not include geologic hazard areas (steep slopes, landslide hazards, etc.), critical aquifer recharge areas, or tree management/landscape requirements in this study.

Station 10 Engineering - Civil: documented existing conditions at all the sites which included evaluation of existing infrastructure, utility connections, storm water mitigation, right of way and grading/topography conditions.

TENW – Traffic: provided an initial assessment on existing roadway conditions, parking demand, general site access and potential frontage improvements which may be required for future build out of the selected sites.

The information listed above is preliminary in nature but is adequate for establishing a rough order of magnitude from which the four sites could be evaluated. All geotechnical, environmental, civil and traffic information produced for the planning effort is included in the appendix of this report.

SITE SELECTION PROCESS

The site selection analysis sought to identify the sites that are best suited for the development of recreation and aquatics centers. Each site has its own unique characteristics, challenges and opportunities.

Hough ton Park and Ride (approx. 4.8 ac)

Existing park and ride is easy to access via car and public transit with a site that is paved, relatively flat and includes strong buffer plantings separating it from the adjacent single family neighborhood.

- Site is easily accessible by car and transit with its proximity to I-405 and associated neighborhood networks
- Trees along east and south edge buffer site from surrounding neighborhood
- Relatively large and flat site is home to existing parking lots
- Potential views to the western sun and Lake Washington
- Property is soon to be owned by the City of Kirkland

Juanita Beach Park North (9 ac)

Large, under-utilized site adjacent to popular waterfront park of the same name but across a busy arterial. Site is further constrained by Juanita Creek and its buffer as well as soils unsuitable for cost efficient development.

- Connection to Juanita Beach Park South
- Large existing canopy trees with a range of health conditions
- Constrained site with adjacent natural areas and associated buffers (estimated 100' buffer from Juanita Creek) and soils with medium/high liquefaction potential
- Opportunity for shared parking between north and south sites
- Existing buildings/resources on site
    - Historic Forbes House on north end of site
        - Opportunity for indoor/outdoor event space and better integration of the house into the broader park.
    - Interim off leash dog area at north edge
    - Tennis courts
    - 2 substandard grass baseball diamonds
    - Gravel parking lot in SE corner

North Kirkland Community Center Park (5.49 ac total - 3.82 ac west half)

Home to an existing 11,942 square foot community center, housed in a former church building. Site includes existing amenities like basketball courts, picnic area and a playground. However, use of these amenities is constrained by site topography and the presence of a neighborhood street bifurcating the property.

- Significant grade moving east to west on site
- Site is bifurcated by 103rd Ave (not a through street), separating existing playground and existing community center
- Site is bordered by NE 124th St—busy street, may require traffic signal
- Existing buildings/resources on site
    - North Kirkland Community Center and parking lot
    - Playground
    - Basketball court
    - BBQs/picnic table
- Site feels much quieter/more wooded/smaller scale than other sites
- Large trees scattered next to parking lot, forested buffer along west, north, and NE edges, small path/trail connection to adjacent neighborhood at NW corner of site
- Very close to Juanita High School

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Peter Kirk Park (13.08 ac)

Large, prominent downtown site that is home to several places important to the City including the Library, Kirkland's only outdoor swimming pool, Lee Johnson Field and several community buildings.

- Prominent site in Downtown Kirkland
  - Connection to commercial corridor leading to waterfront (Park Ln.)
  - Located adjacent to Kirkland Urban and Google development
- Existing buildings/resources on site
  - Library + parking structure
  - Peter Kirk Pool
  - Kirkland Teen Union Building (KTUB)
  - Peter Kirk Community Center
  - Kirkland Performance Center
  - Lee Johnson Field (Baseball)
  - Tennis courts
  - Basketball court
  - Skate park
  - Playground
  - Plaza (March 23)
- Possible FEMA 100 year floodplain (according to King County iMap)
- West edge of site along 3rd St. has impermeable pedestrian edge (limited access) to the south and bus stops to the north—elevation difference separates site from 3rd St.
- Significant grading east to west which makes building connections cumbersome
- Park lacks coherent identity and placemaking beyond the footprint of the baseball field. Various amenities are scattered around the park some of which may not be highest and best use of prime downtown open space.

Evaluation criteria

Providing a framework for comparing the sites to one another was achieved using a criteria matrix comprised of five categories. This methodology provided a means by which multiple aspects of each site could be evaluated against one another.

1. Development Capacity

- Accommodates program space needs
- Accommodates parking requirements
- Enhances park amenities and experience
- Optimal and effective use of site

2. Economic Viability

- Cost recovery potential
- Prominent frontage on major arterial
- Proximity to compatible amenities
- Partnership potential

3. Stewardship of Funding

- Site development cost (on-site / off-site improvements)
- Challenging site conditions (soils / topography)
- Land acquisition (if applicable)
- Project development cost
- Value added design

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4. Supports Diversity, Equity, Inclusion & Belonging

- Balanced and complementary services to all
- Preserves and enhances outdoor recreation amenities
- Provides access to variety of transportation modes

5. Regulatory Approval

- Avoids wetlands, streams and steep slopes
- No lengthy permit and approval process

The following exhibits show the initial site evaluations conducted for Houghton Park & Ride, Juanita Beach Park, North Kirkland Community Center Park and Peter Kirk Park.

Houghton Park & Ride

Site evaluation criteria is rated on a scale of 1-4

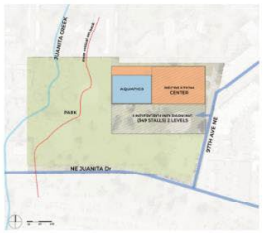
80%-100%	4	Excellent
60%-79%	3	Good
40%-59%	2	Fair
0%-39%	1	Poor

	Large Recreation & Aquatics		Medium Community Recreation	
Development Capacity	Excellent		Excellent	
Accommodates Space Program Needs	105,000 sf in 2 levels	4	45,000 sf in 2 levels	4
Accommodates Parking Requirements	349 surface parking stalls	4	154 surface parking stalls	4
Enhances Park Amenities & Experience	Indoor recreation focused	4	Provides new park area	4
Optimal & Effective Use of Site	Suited for destination recreation facility	4	Underdeveloped site for location	1
Economic Viability	Excellent		Good	
Cost Recovery Potential	High	4	Medium / High	3
Prominent Frontage on Major Arterial	Transportation hub	4	Transportation hub	4
Proximity to Compatible Amenities	Proximity to I-405	3	Proximity to I-405	3
Partnership Potential	Medium / High	3	Medium	2
Stewardship of Funding	Excellent		Good	
Site Development Cost (on-site / off-site improvements)	Frontage Improvements + $1 million	4	Frontage Improvements + $1 million	4
Challenging Site Conditions (soils / topography)	Minimal slope, soldier piles	4	Minimal Slope, soldier piles	4
Land Acquisition (if applicable)	TBD	1	TBD	1
Project Development Cost	$105 - $129 million	3	$48 - $59 million	3
Value Added Design	Appropriate program for large flat site	4	Remote site for community programs	2
Supports Diversity, Equity & Inclusion	Excellent		Excellent	
Balanced & Complementary Services to All	Site suited for destination recreation	4	Remote site for community programs	2
Preserves & Enhances Outdoor Recreation Amenities	Potential for limited outdoor activities	3	Provides outdoor park space	4
Provides Access to Variety of Transportation Modes	Multi-modal access	4	Multi-modal access	4
Regulatory Approval	Excellent		Excellent	
Avoids Wetlands, Streams and Steep Slopes	No critical areas	4	No critical areas	4
No Lengthy Permit and Approval Process	Zoning Change, SEPA and Parking Review	4	Zoning Change, SEPA and Parking Review	4

Juanita Beach Park

Site evaluation criteria is rated on a scale of 1-4

80%-100%	4	Excellent
60%-79%	3	Good
40%-59%	2	Fair
0%-39%	1	Poor



	Large Recreation & Aquatics		Medium Community Recreation & Aquatics	
Development Capacity	Good		Excellent	
Accommodates Space Program Needs	105,000 sf in 2 levels	4	45,000 sf in 2 levels	4
Accommodates Parking Requirements	349 parking stalls (2 levels)	4	154 surface parking stalls	4
Enhances Park Amenities & Experience	Limits park redevelopment / amenities	2	Limits park redevelopment / amenities	3
Optimal & Effective Use of Site	Reduces outdoor park area	1	Reduces outdoor park area	2
Economic Viability	Fair		Fair	
Cost Recovery Potential	Medium	3	Medium / Low	2
Prominent Frontage on Major Arterial	Lacks frontage on major arterial	3	Lacks frontage on major arterial.	3
Proximity to Compatible Amenities	Potential competition w/ local fitness club	1	Potential competition w/ local fitness club	1
Partnership Potential	Medium / Low	2	Medium / Low	2
Stewardship of Funding	Fair		Fair	
Site Development Cost (on-site / off-site improvements)	Frontage Improvements + $4 million	1	Frontage Improvements + $2 million	3
Challenging Site Conditions (soils / topography)	100' shoreline setback, medium liquefaction	1	100' shoreline setback, medium liquefaction	1
Land Acquisition (if applicable)	None	4	None	4
Project Development Cost	$153 - $187 million	1	$56 - $72 million	2
Value Added Design	Over-development of site	1	Over-development of site	1
Supports Diversity, Equity & Inclusion	Fair		Good	
Balanced & Complementary Services to All	Emphasis on building vs. park	4	Emphasis on building vs park	4
Preserves & Enhances Outdoor Recreation Amenities	Removes 2.6 acres of park	1	Removes 2.1 acre of park	2
Provides Access to Variety of Transportation Modes	No mass transit connections	2	No mass transit connections	2
Regulatory Approval	Good		Good	
Avoids Wetlands, Streams and Steep Slopes	Design concurrent with critical area review	3	Design concurrent with critical area review	3
No Lengthy Permit and Approval Process	Removal of historical building	2	Removal of historical building	2

Peter Kirk Community Center & Park

Site evaluation criteria is rated on a scale of 1-4

80%-100%	4	Excellent
60%-79%	3	Good
40%-59%	2	Fair
0%-39%	1	Poor

	Large Recreation & Aquatics		Medium Community Recreation & Aquatics	
Development Capacity	Good		Excellent	
Accommodates Space Program Needs	105,000 sf in 2 levels	4	45,000 sf in 2 levels	4
Accommodates Parking Requirements	349 parking stalls (2 levels)	4	110 parking stalls (1 level)	4
Enhances Park Amenities & Experience	Limits park presence and amenities	2	Maximizes parks presence and amenities	4
Optimal & Effective Use of Site	Reduce available park land	2	Increases available park land	4
Economic Viability	Excellent		Excellent	
Cost Recovery Potential	Medium	3	Medium	3
Prominent Frontage on Major Arterial	Traffic impacts and parking access	2	Existing traffic flow and parking access	4
Proximity to Compatible Amenities	Park Lane and Kirkland Urban	4	Park Lane and Kirkland Urban	4
Partnership Potential	High	4	High	4
Stewardship of Funding	Fair		Good	
Site Development Cost (on-site / off-site improvements)	Frontage Improvements + $4 million	1	Frontage Improvements + $2 million	3
Challenging Site Conditions (soils / topography)	Flood plain, med-high liquefaction	1	Moderate slope, med-high liquefaction	2
Land Acquisition (if applicable)	None	4	None	4
Project Development Cost	$157 - $191 million	1	$56 - $68 million	2
Value Added Design	Compromises park redevelopment	4	Balances civic and park development	4
Supports Diversity, Equity & Inclusion	Good		Excellent	
Balanced & Complementary Services to All	Indoor recreation and aquatics emphasis	3	Cultural and community emphasis	4
Preserves & Enhances Outdoor Recreation Amenities	Removes 2.3 acres of park	2	New amenities and outdoor pool	4
Provides Access to Variety of Transportation Modes	Multi-modal access	3	Multi-modal access	4
Regulatory Approval	Excellent		Excellent	
Avoids Wetlands, Streams and Steep Slopes	Building in flood plain FEMA map revision	3	Structures out of flood plan	4
No Lengthy Permit and Approval Process	SEPA and Parking Review	4	SEPA and Parking Review	4

North Kirkland Community Center & Park

Site evaluation criteria is rated on a scale of 1-4

80%-100%	4	Excellent
60%-79%	3	Good
40%-59%	2	Fair
0%-39%	1	Poor

Large Recreation & Aquatics

Medium/Large Community Recreation & Aquatics

	Large Recreation & Aquatics		Medium/Large Community Recreation & Aquatics	
Development Capacity	Fair		Good	
Accommodates Space Program Needs	105,000 sf in 2 levels	4	70,000 sf in 2 levels	4
Accommodates Parking Requirements	349 parking stalls (3 levels)	1	231 parking stalls (2 levels)	2
Enhances Park Amenities & Experience	Over scale for site	1	Woven into park context	3
Optimal & Effective Use of Site	Eliminates park trail and landmark trees	1	Maintains park trail and landmark trees	3
Economic Viability	Fair		Good	
Cost Recovery Potential	Medium	2	Medium / High	3
Prominent Frontage on Major Arterial	Fronts major access on NE 124th St.	3	Fronts major access on NE 124th St.	3
Proximity to Compatible Amenities	Close to Juanita High School	3	Close to Juanita High School	3
Partnership Potential	Low	1	Low / Medium	2
Stewardship of Funding	Fair		Excellent	
Site Development Cost (on-site / off-site improvements)	Frontage Improvements + $4 million	1	Frontage Improvements + $2million	3
Challenging Site Conditions (soils / topography)	Site slope 7.5%, liquefaction-medium	2	Site slope 7.5%, liquefaction-medium	2
Land Acquisition (if applicable)	None	4	None	4
Project Development Cost	$147 - $180 million	1	$101 - $124 million	3
Value Added Design	Over-development of site	2	Appropriate scale and use of site	4
Supports Diversity, Equity & Inclusion	Fair		Excellent	
Balanced & Complementary Services to All	Recreation focused	3	Community and recreation focus	4
Preserves & Enhances Outdoor Recreation Amenities	Removes 2.6 acres of park	1	Removes 1.6 acres of park	2
Provides Access to Variety of Transportation Modes	Multi-modal / Potential Traffic Impact	4	Multi-modal access	4
Regulatory Approval	Good		Excellent	
Avoids Wetlands, Streams and Steep Slopes	No critical areas; potential geological impacts	3	No critical areas; potential geological impacts	3
No Lengthy Permit and Approval Process	SEPA and Parking Review	4	SEPA and Parking Review	4

CONSIDERED SITES & RECOM M ENDATIONS

Site evaluations were presented to PFEC in October 2022. Online polling during the meeting suggested a preference for the Houghton Park and Ride and North Kirkland Community Center Park sites. In November, staff made a recommendation to City Council to remove both Peter Kirk Park and Juanita B each sites from further consideration at this time due to site complexity, nostalgia and low scores from the criteria review. City Council supported this recommendation and the project scope was revised to two sites: Houghton Park & Ride and North Kirkland Community Center Park .

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PROGRAMMING

RECREATION, AQUATICS & COMMUNITY

At the initiation of this study an overarching program was developed based on community needs outlined in the 2022 PROS Plan. The program included area allocation based on historical data and the potential for maximizing revenue generation. The outcome was the creation of a working document that provided a baseline for multiple iterations with input and feedback from City staff.

A total of 12 versions were explored throughout the course of the study. Starting initially with a comparison of community focused programming and recreation-based programming, the scope and development was refined into the final programs that were used as the basis for the concept designs. The various programs have been tailored for each site with a focus on providing complementary services at two locations in Kirkland to best address the community needs.

Houghton Park & Ride

The programming at Houghton Park & Ride (HPR) seeks to leverage the sites vehicular and multimodal means of access as well as size to provide a larger buildout of potential program area. With input from City staff, the design team developed programs for HPR Option A and HPR Option B. Both options feature the largest amount of recreation, aquatics and community space included in this study.

Option A

The indoor aquatics program includes a large warm water recreation pool with a slide and zero entry children's play area with water features. The ramped entry provides ease of access for community members with mobility needs and a variety of pool depths can accommodate multiple activities from open swim to water aerobics and general rehabilitation exercises. The natatorium also includes an 8-lane 25-meter lap pool for general fitness and training.

The recreation spaces include a multi-purpose gym with 3-courts which can host a variety of recreation and community events. A walk/jog track encircles the upper level of the gym and provides 1 mile of exercise for every 9 laps. The fitness room is sized to accommodate cardio, free weight and cross training activities. A large and medium sized multi-purpose exercise and activity room rounds out the collection of spaces provided for the recreation area.

Community focused program areas include a 300 seat community / events room which can be subdivided into three separate event spaces for a multitude of activities. A commercial / catering kitchen is located adjacent to the community room

Option A	103,000 sf
Recreation Space	**32,200 sf**
Multi-Purpose Gym - 3 court (17,899 sf)	
Walk /Jog Track - 9 laps / mile (5,514 sf)	
Fitness Room (5,931 sf)	
Multi-Purpose Exercise / Activity Room (1,646 sf)	
Multi-Purpose Exercise / Activity Room (1,202 sf)	
Aquatics Space	**23,300 sf**
Indoor Recreation Pool (water area 6,256 sf)	
Indoor Lap Pool - 8 lane 25 yard (5,000 sf)	
Community Space	**12,500 sf**
Community / Event Room - 300 seats (3,424 sf)	
Commercial / Catering Kitchen (1,092 sf)	
Stage / Classroom (1,149 sf)	
Childwatch (1,013 sf)	
Multi-Cultural Center (1,015 sf)	
Arts / Crafts Studio (1,277sf)	
Makerspace (1,330 sf)	
Support Space	**9,000 sf**
Administration (2,010 sf)	
Lockers / Universal Changing (3,460 sf)	
Support / Storage	

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to provide food service for events. The kitchen can also be used to host cultural events and serve s as a demonstration kit chen for teaching and learning. Opposite the kitchen is the stage / classroom which consists of a raised platform that can serve as a performance platform for dance, music, presentations and any variety of performance events. When not being used for perfo rmances , the space can be utilized as a classroom to maximize programming opportunities. Community spaces also include a childwatch are a, m ulti -cultural center, arts & crafts studio and a m akerspace.

Support areas such as locker rooms, u niversal changing rooms, storage and administrative office s are also included to round out the program.

Option B

The program areas contained in Option B are similar to Option A with a slight reduction or reallocation of some program components. Variati ons in the program include a reduction of the community / events room to a 200 seat community / events room which can be subdivided into two separate event spaces but still can accommodate a multitude of activities. The commercial / catering kitchen is smaller but adequately sized to provide food service for events. Like Option A, the kitchen can also be used to host cultural events and serve s as a demonstration kitchen for teaching and learning. The stage / classroom functions do not vary between optio ns. Community spaces also include a childwatch area, m ulti -cultural center and m akerspace but the arts & crafts studio is replaced with a g ame room.

Option B	86,000 sf
Recreation Space	**28,270 sf**
Multi-Purpose Gym - 2 court (13,542 sf)	
Walk /Jog Track - 12 laps per mile (4,951 sf)	
Fitness Room (5,072 sf)	
Multi-Purpose Exercise / Activity Room (1,810 sf)	
Multi-Purpose Exercise / Activity Room (1,146 sf)	
Aquatics Space	**18,560 sf**
Indoor Recreation Pool (water area 8,108 sf)	
Indoor Lap Pool - 6 lane 25 yard (3,194 sf)	
Community Space	**10,200 sf**
Community / Event Room - 200 seats (2,380 sf)	
Commercial / Catering Kitchen (790 sf)	
Stage / Classroom (1,115 sf)	
Childwatch (856 sf)	
Multi-Cultural Center (1,154 sf)	
Makerspace (1,400 sf)	
Game Room (905 sf)	
Support Space	**7,820 sf**
Administration (1,822 sf)	
Lockers / Universal Changing (3,105 sf)	
Support / Storage	

The indoor aquatics program includes a larger warm water recreation pool with all of the same features as Option A. The lap pool is reduced by two lanes to a 6 -lane 25 -meter pool. The reduction of lap pool lanes provides more recreation water while reduc ing the overall area of the natatorium.

The recreation spaces include a m ulti -p urpose g ym with 2 -courts which still provides ample space for host ing a variety of recreation and community events. The reduced gym volume also reduces the length of the w alk /jog t rack increasing the amounts of laps to achieve 1 mile of exercise to 12. The fitness room is approximately 900 sf smaller but can still accommodate cardio, free weight and cross training activities. The m ulti -purpose exercise and activity room s var y slightly in size but function the same as Option A.

The overall s upport areas are reduced proportionally to align with the reduced program areas in this option.

North Kirkland Community Center Park

The programming for North Kirkland Community Center Park (NKCC) provides complementary functions to Houghton Park and Ride but the program offerings of any one of the three options are viable on their own. The program has been refined to address the sloping nature of the site and provides a “right sized” facility that can exist harmoniously with the surrounding residential neighborhood and park setting. Larger program areas are envisioned to be located on the lower level of the facility to reduce the overall height and size of the building. Similar to Houghton Park & Ride, input from the PCS staff informed the developed programs for NKCC Option A , NKCC Option B1 and NKCC Option B2 .

Option A

The indoor aquatics program includes a warm water recreation pool with a slide and zero entry children’s play area with water features. The ramped entry provides ease of access for community members with mobility needs and a variety of pool depths can accommodate multiple activities from open swim to water aerobics and general rehabilitation exercises.

Option A	74,000 sf
Recreation Space	**24,960 sf**
Multi-Purpose Gym - 2 court (12,276sf)	
Walk /Jog Track - 12 laps / mile (4,409 sf)	
Fitness Room (3,629 sf)	
Multi-Purpose Exercise / Activity Room (1,761sf)	
Multi-Purpose Exercise / Activity Room (1,205sf)	
Aquatics Space	**8,840 sf**
Indoor Recreation Pool (water area 3,440 sf)	
Community Space	**15,460 sf**
Community / Event Room - 200 seats (2,390 sf)	
Commercial / Catering Kitchen (717 sf)	
Stage / Classroom (1,109 sf)	
Multi-Purpose Classroom (920 sf)	
Childwatch (1,042 sf)	
Senior Lounge (1,420 sf)	
Multi-Cultural Center (1,688 sf)	
Teen Center (1,116 sf)	
Arts / Crafts Studio (1,278 sf)	
Music Room (1,000 sf)	
Game Room (959 sf)	
Support Space	**7,280 sf**
Administration (1,710 sf)	
Lockers / Universal Changing (3,223 sf)	
Support / Storage	

The recreation spaces include a multi-purpose gym with 2 -courts which can host a variety of recreation and community events. A walk/ jog track encircles the upper level of the gym and provides 1 mile of exercise for every 12 laps. The fitness room is sized to accommodate cardio and free weight training activities. A large and medium sized multi-purpose exercise and activity room rounds out the collection of spaces provided for the recreation area.

Community focused program areas include a 200 seat community / events room which can be subdivided into two separate event spaces for a multitude of activities. The commercial / catering kitchen is located adjacent to the community room to provide food service for events. The kitchen can also be used to host cultural events and serves as a demonstration kitchen for teaching and learning. Opposite the kitchen is the stage / classroom which consists of a raised platform that can serve as a performance platform for dance, music, presentations and any variety of performance events. When not being used for performances, the space can be utilized as a classroom . The program also features a senior lounge, teen center, music room, game room and multi-purpose classroom to provide multi-generational opportunities and activities. Like HPR community spaces , NKCC also include a childwatch area, multi-cultural center and arts & crafts studio.

Support areas such as locker rooms, universal changing rooms, storage and administrative offices are also included to round out the program.

Option B1

Like Option A, community focused program areas include a 200 seat community / events room which can be subdivided into two separate event spaces for a multitude of activities. The commercial / catering kitchen is located adjacent to the community room to provide food service for events. The kitchen can also be used to host cultural events and serves as a demonstration kitchen for teaching and learning. Opposite the kitchen is the stage / classroom which consists of a raised platform that can serve as a performance platform for dance, music, presentations and any variety of performance events. When not being used for performances, the space can be utilized as a classroom. Other comm unity spaces include a childwatch area, game room and arts & crafts Studio.

Option B1	45,000 sf
Recreation Space	**19,500 sf**
Multi-Purpose Gym - 2 court (12,250sf)	
Fitness Room (3,552 sf)	
Multi-Purpose Exercise / Activity Room (1,793sf)	
Multi-Purpose Exercise / Activity Room (1,045sf)	
Aquatics Space	
Community Space	**9,000 sf**
Community / Event Room - 200 seats (2,534 sf)	
Commercial / Catering Kitchen (766 sf)	
Stage / Classroom (1,420 sf)	
Childwatch (1,186 sf)	
Arts / Crafts Studio (1,355 sf)	
Game Room (1,023 sf)	
Support Space	**5,030 sf**
Administration (1,916 sf)	
Lockers / Universal Changing (1,930 sf)	
Support / Storage	

Aquatics programing is not included in this option, but similar to the previous options, support areas such as locker rooms, universal changing rooms, storage and administrative offices are included to round out the program.

The recreation spaces include a multi -purpose gym with 2 -courts which can host a variety of recreation and community events. The fitness room is sized to accommodate cardio and free weight training. A large and medium sized multi -purpose exercise and activity room rounds out the collection of spaces provided for the recreation area.

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Option B 2

The community-based program areas in Option B2 are identical to option B1. The primary difference between the options is that the multi-purpose gym with 2-courts is replaced by an indoor recreation pool.

The indoor aquatics program includes a warm water recreation pool with a slide and zero entry children's play area with water features. The ramped entry provides ease of access for community members with mobility needs and a variety of pool depths can accommodate multiple activities from open swim to water aerobics and general rehabilitation exercises.

The recreation spaces still include a fitness room sized to accommodate cardio and free weight training and a large and medium sized multi-purpose exercise and activity room.

Support areas such as locker rooms, universal changing rooms, storage and administrative offices are also included to round out the program.

Option B2	45,000 sf
Recreation Space	**6,800 sf**
Fitness Room (3,531 sf)	
Multi-Purpose Exercise / Activity Room (1,805 sf)	
Multi-Purpose Exercise / Activity Room (1,058 sf)	
Aquatics Space	**11,820 sf**
Indoor Recreation Pool (water area 5,450 sf)	
Community Space	**9,580 sf**
Community / Event Room - 200 seats (2,534 sf)	
Commercial / Catering Kitchen (766 sf)	
Stage / Classroom (1,420 sf)	
Childwatch (1,048 sf)	
Arts / Crafts Studio (1,355 sf)	
Game Room (1,029 sf)	
Support Space	**7,650 sf**
Administration (1,909 sf)	
Lockers / Universal Changing (3,734 sf)	
Support / Storage	

Community Spaces

Recreation Spaces





Aquatic Spaces





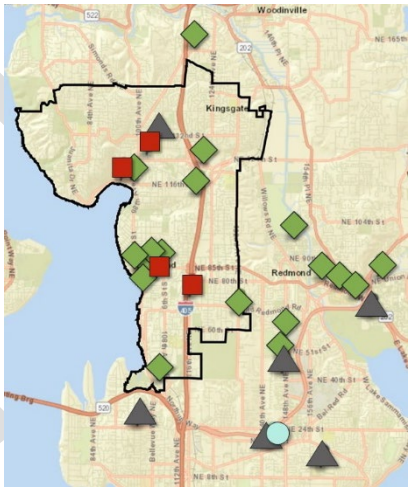
MARKET ANALYSIS

DEMOGRAPHICS

The demographics and market analysis highlighted that a growing number of families, adults, and seniors need more indoor places to play, recreate, and swim and that Kirkland is a stable and growing community with community members that have the ability to pay for the programs and services outlined in this study. Looking at national benchmarks reveal s that the City is comparatively behind other communities of its size in terms of providing recreation and aquatic opportunities for its population.

Aquatics and Indoor Recreation Needs Analysis

Population	95,253
Total Households	39,349
Family Household ds	23,648
Median Age	39.9
Median Income	$144,799



Growing number of families, adults, and seniors who **need more places** to play, recreate, and swim.
Very **stable market** in terms of population.
Income points to the **ability to pay** for programs and services.
Spending patterns suggest **residents are currently paying for similar services.**
Full community profile supports **multiple indoor facilities.**

National Facility Benchmarks indicate a population of Kirkland's size would generally have:

Facility Type	Average Inventory	Current Inventory
Recreation Center	2.3	0
Community Center	2.3	2 (PK & NK)
Senior Center	1.4	0
Aquatic Center	1.5	0
Outdoor Pools	2.2	1

NEEDS ANALYSIS / MARKET CONCLUSION

The market analysis conducted under this study confirmed and quantified previous assumptions outlined in 2022 community survey and PROS Pla n. Primarily , the community survey revealed the following findings:

Indoor Aquatic & R ecreation Center

- Most important need
- Indoor aquatics center rated 1st
- Indoor recreation center rated 3rd

Indoor Facility will increase participation

36% participants said recreation center or indoor aquatics would increase their participation

Facilit ies Create Programs and Services :

Most important programs and services (PROS):

- special events
- environmental and outdoor programs
- fitness programs
- aquatics programs
- health and wellness programs
- sports programs

Needs that are not being met (PROS):

- adaptive/special needs programs
- culturally -specific programming
- environmental & outdoor programs
- after -school & camps
- special interest/education programs

Swim lesson needs (Summer 2022)

- 2,800 swim lesson slots (1,400 unique participants)
- 10,850 swim lesson waitlist entries (1,475 unique individuals)
  - 826 (56%) of individuals on waitlist never received a swim lesson spot

Our market analysis confirmed that Kirkland's community needs and population can support multiple indoor and aquatic facilities. The design of facilities should vary in size and focus to provide the greatest amount of opportunity to the community and all facilities should include a fitness component. It is recommended that all facilities should include some level of multi-generational / multi-cultural programming.

CONCEPT DESIGN

The concept design phase was initiated after completing the market needs analysis, programming and site selection. The work completed in the analysis phase provided a collective understanding about the types of activities, spaces and locations requiring development to best leverage Kirkland's assets and enhance opportunities for the community.

Two sites, located at the north and south ends of Kirkland, were selected and developed with concept designs and visualization along with operational and capital estimates. These included 103,000sf and 86,000sf community, recreation and aquatic center options located at the Houghton Park & Ride site and 74,000sf and 45,000sf options at the existing North Kirkland Community Center site.

FACILITIES GUIDING PRINCIPLES

Creating a framework to guide the development of the recreation an aquatics centers was key to maintaining a focus on overarching goals of this study. The guiding principles provide a benchmark from which success of the concept design can be measured.

Project Vi sion

- Project **serves significant unmet needs** for aquatic, recreation, and community space in Kirkland

- **Legacy projects** for the Kirkland community
- **Welcoming, safe & accessible** environment for all
- Encourages **diversity, equity, inclusion & belonging**
- **Achieves c ommunity priorities** and city's vision
- **Right sized designs** with complementary features between facilities
- Versatility to **maximize facility use**

Environmental

- Creates synergy between facility and park space
- Offers **indoor & outdoor programming** opportunities
- Environmentally sound, energy efficient & designed to **support sustainable practices**

Financial

- **Optimizes value of budget** (capital & operational)
- **Financially sustainable**
- Offers potential for partnership opportunities
- Provides **phased implementation plan** for continuous service to the community
- Vision supports **successful ballot measure(s)**

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HOUGHTON PARK & RIDE

Option A

The HPR site encompasses approximately 4.8 ac re s on a long linear rectangular parcel on a north / south axis. The building location within the site was predicated on creating a highly visible anchor in the southeast corner to maximize available space for parking on the sites north and west edges. The buildings location provides a primary entry in the heart of the site which is easily accessible from the adjacent parking areas. To accommodate the anticipated parking needs , a sloped parking structure is provide d to the north. Sloping the structure minimi zes the visual impact of the structure and blends the parking area into the existing landscape.

The three -story building program is organized along a central circulation spine. Upon entry , visitors are greeted by a large entry lounge where the community c an congregate and come together. A m ulti - cultural c enter opens onto the entry lobby and anchors the n orthwest corner of the building. Across the lobby, the fitness room and all its activity is on display through a glass wall extending from the floor to th e ceiling.

The administration area is located towards the center of the building and the reception desk provides controlled access to recreation and aquatic functions. The strategic location of the reception desk provides direct line of si ght for supervis ion through out the entry level. The locker and universal changing area is located directly across from the reception desk. This area is centered between the aquatics and recreational program areas to provide ease of access.

Glass windows at the natatori um provide views in and out of the pool area to enhance the feeling of connection as one moves through the space. The childwatch area and party rooms are located close to the pool s and recessed alcoves provide informal gathering areas between the primary program spaces. A sheltered courtyard on the southwest corner provides a garden like setting which can be enjoyed from the pool or accessed from the main circulation spine.

A set of elevators and stairs provide access to the second level. Similar to the entry level, the primary program areas are organized and accessed f ro m a central circulation spine. Multiple lounge areas are place d throughout the circulation area where people can wait for upcoming classes, watch activities or just simply relax . The second level is anchored by a 3 -cou rt gymnasium. The gym would be striped for a multitude of activities like basketball, volleyball, pickleball and futsal. Divider curtains in the gym allow for multiple activities to be conducted simultaneously. Opp osite the gym is an arts & crafts studio and makerspace which have large windows that look west to Lake Washington. Directly south of these community spaces are the multipurpose exercise and activity rooms which also take advantage of the views to the wes t.

A large community events space is located on the third level along with a walk jog track that circumnavigates the gym floor. The community event room can accommodate large gatherings and it also can be subdivided into three separate events spaces. Lar ge floor to ceiling windows are envisioned for the west wall of the events space to embrace the panoramic views of Lake Washington . The commercial catering kitchen adjacent to the event space enhances program opportunities on this level and throughout the building. A roof top terrace on the south end of the building provides a tranquil overlook that can be used for anything from morning yoga classes to receptions.

The buildings form and appearance i s born out of the programs and spaces contained within th e confines of its wall s. Glass is strategically used to provide daylight and views to the surrounding land, lake and cityscapes. Maximizing daylight and minimizing the need for artificial light is one of the sustainab ility goals of the project. The large north facing daylight monitors located above the gym and

natatorium will reduce energy usage and the sloped back side of the monitors are perfectly oriented for solar panels and the production of renewable energy on site.

Option B

The site considerations for HPR Option B utilizes many of the same strategies outlined for Option A. The primary difference between the options is that the reduced program area in Option B reduces the parking needs of the facility which eliminates the need for a parking structure.

The two-story building program is organized along a central circulation spine. Upon entry, visitors are greeted by a large entry lounge where the community can congregate and come together. A multi-cultural center opens onto the entry lobby and anchors the northwest corner of the building. A two-court multi-purpose gym is located across the lobby. The gym would be striped for a multitude of activities like basketball, volleyball, pickleball and futsal. Divider curtains in the gym allow for multiple activities to be conducted simultaneously. The open circulation provides views into the gym as well as the makerspace and game room located on the west side of the circulation core. Large openings and glass walls frame vignettes of both community and recreational activities.

Like Option A, the administration area is located towards the center of the building and the reception desk provides controlled access to recreation and aquatic functions. The strategic location of the reception desk provides direct line of sight for supervision throughout the entry level. The locker and universal changing area is located directly across from the reception desk. This area is centered between the aquatics and recreational program areas to provide ease of access.

Glass windows at the natatorium provide views in and out of the pool area to enhance the feeling of connection as one moves through the space. The childwatch area and party rooms are located close to the pools and recessed alcoves provide informal gathering areas between the primary program spaces. A sheltered courtyard on the southwest corner provides a garden like setting which can be enjoyed from the pool or accessed from the main circulation spine.

A set of elevators and stairs provide access to the second level. Like the entry level, the primary program areas are organized and accessed from a central circulation spine. Multiple lounge areas are placed throughout the circulation area where people can wait for upcoming classes, watch activities or just simply relax. The second level contains a mix of recreation and community programs. A large central fitness area is located on the east side of the primary circulation zone. This location provides direct access to the elevated walk/jog track and enhances cross training and fitness opportunities through their adjacency. Opposite the fitness room is an arts & crafts studio and multipurpose exercise and activity rooms all of which have large windows that look west to Lake Washington.

The community events space is also located west of the fitness room and walk jog track. The community event room can accommodate large gatherings and it also can be subdivided into two separate events spaces. Large floor to ceiling windows are envisioned for the west wall of the events space to embrace the panoramic views of Lake Washington. . The commercial catering kitchen adjacent to the event space enhances program opportunities on this level and throughout the building.

The buildings form and appearance is born out of the programs and spaces contained within the confines of its walls. Glass is strategically used to provide daylight and views to the surrounding land, lake and cityscapes. Maximizing daylight and minimizing the need for artificial light is one of the sustainability goals of the project. The large north facing daylight monitors located above the gym and natatorium will reduce energy usage and the sloped back side of the monitors are perfectly oriented for solar panels and the production of renewable energy on site.

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NORTH KIRKLAND COMMUNITY CENTER PARK

Option A

The concept designs for NKCC focused on developing the 3.8-acre parcel west of 103rd Ave. NE. The sloped site provides a unique opportunity to leverage the sites topography in concealing a large portion of the buildings mass below grade. This strategy creates a building smaller in appearance and is in keeping with the residential scaled buildings in the surrounding neighborhood. The building is located on the southern half of the site for a higher degree of public visibility to NE 124th Street. The parking structure is tucked behind the main building structure on the north side of the site to help traffic flow and minimize the presence of the parking area. The parking level entry is located at grade which diminishes its physical presence and provides easy access to the drop off zone and accessible parking stalls.

The building entry is located adjacent to the parking area and accommodates pedestrian access across 103rd Ave. NE. to the children's play area on the east park parcel. A continuous band of landscaping provides a buffer between the street edge and the one-story volume of the entry level. The program areas and parking stalls not on the entry level are tucked below the primary structure to minimize the visual impact of the building by integrating the building mass into the surrounding residential neighborhood.

The program is organized around a central two story multi-purpose gym that filters natural light into the heart of the building. The administrative offices and reception desk are located at the main entry. From this location access can be monitored to the active recreation and aquatics programs on the lower level or the community focused programing on the entry level. Visitors arrive at an entry lounge where the community can congregate, and the senior lounge expresses the community focused functions on this level. An active walk/jog track encircles the gym opening with open views to the activities below.

The community events space is located along the primary circulation loop and several lounge seating areas have been incorporated to provide space for informal gathering. The community event room can accommodate large gatherings and it also can be subdivided into two separate events spaces. Large floor to ceiling windows are envisioned for the east wall of the events space to create a visual connection to the buffered landscape and to provide views of the program activities. The commercial catering kitchen adjacent to the event space enhances program opportunities on this level and throughout the building.

A music room, game room, teen lounge and multi-purpose classroom are located on the south side of the building and they take advantage of views out into the park. Adjacent to these areas is a roof top terrace that can serve as an outdoor classroom, yoga studio or host a multitude of community functions. The multi-cultural center, arts & crafts studio and childwatch round out the community focused programs on the entry level.

The lower level is accessed by a central stair and elevator across from the reception area. The locker and universal changing rooms anchor the north edge of the lower level. A two story, 2-court gym sits below the ground level but is open to the entry level above and the fitness room on the south edge of the building. The gym would be striped for a multitude of activities like basketball, volleyball, pickleball and futsal. Divider curtains in the gym allow for multiple activities to be conducted simultaneously. Full height glass windows at the fitness room provide daylight and views out into the park for both gym and fitness room users. The multi-purpose exercise /activity rooms also take advantage of park views as they anchor the southwest corner into the landscape.

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The recreation pool is located on the west side of the lower level adjacent to the aquatic offices and pool storage. The pool area has direct access to the locker and universal changing rooms. Glass windows at the natatorium provide views in and out of the pool area to enhance the feeling of connection as one moves through the lower level. Large windows on the west side of the natatorium look out into the tree lined edge of the park for an enhanced visual connection to the natural surroundings. The party room adjacent to the natatorium provides direct access to the pool deck.

Like other options, the buildings form and appearance are born out of the programs and spaces contained within the confines of its walls. Open and opaque walls are used to blend into the landscape. Windows are strategically used to provide daylight and views to the surrounding park. Maximizing daylight and minimizing the need for artificial light is one of the sustainability goals of the project. The large north facing daylight monitors located above the gym will reduce energy usage and the sloped back side of the monitors are perfectly oriented for solar panels and the production of renewable energy on site.

Option B1

The site considerations for NKCC Option B1 utilizes many of the same strategies outlined for Option A. The primary difference between the options is that the reduced program area in Option B1 does not include aquatics and the community functions are smaller in scale.

Like option A the building entry is located adjacent to the parking area and accommodates pedestrian access across 103rd Ave. NE. to the children's play area on the east park parcel. A continuous band of landscaping provides a buffer between the street edge and the one-story volume of the entry level. The program areas and parking stalls not on the entry level are tucked below the primary structure to minimize the visual impact of the building by integrating the building mass into the surrounding residential neighborhood.

The program is organized around a central circulation spine with views down into the multi-purpose gym and access to community functions on the west side of the circulation area. Light monitors at the gym provide filtered natural light into the heart of the building. The administrative offices and reception desk are located at the main entry. From this location access can be monitored to the active recreation programs on the lower level or the community focused programing on the entry level. Visitors arrive at an entry lounge where the community can congregate and relax in several lounge areas.

The community events space is located along the primary circulation spine with lounge seating incorporated to provide space for informal gathering. The community event room can accommodate large gatherings and it also can be subdivided into two separate events spaces. Large floor to ceiling windows are envisioned for the west wall of the events space to create a visual connection to the park landscape and to provide views of the program activities. The commercial catering kitchen adjacent to the event space enhances program opportunities on this level and throughout the building.

A game room, roof terrace and arts & crafts studio are located on the west side of the building and they take advantage of views out into the park. The roof top terrace can serve as an outdoor classroom, yoga studio or host a multitude of community functions.

The lower level is accessed by a central stair and elevator behind the reception area. A two story, 2-court gym sits below the ground level but is open to the entry level above and clerestory windows provide natural light and views down into the gym. The gym would be striped for a multitude of activities like basketball, volleyball, pickleball and futsal. Divider curtains in the gym allow for multiple activities to be conducted simultaneously. The central location of the locker and universal changing rooms provide easy access to the active recreation spaces. The fitness room and multi-purpose exercise /activity rooms on the west edge of the building are access from the central circulation spine. As with all of the NKCC

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options, full height glass windows are utilized to maximize daylighting opportunities and take advantage of park views into the landscape.

Like other options, the buildings form and appearance are born out of the programs and spaces contained within the confines of its walls. Open and opaque walls are used to blend into the landscape. Windows are strategically used to provide daylight and views to the surrounding park. Maximizing daylight and minimizing the need for artificial light is one of the sustainability goals of the project. The large north facing daylight monitors located above the gym will reduce energy usage and the sloped back side of the monitors are perfectly oriented for solar panels and the production of renewable energy on site.

Option B2

The site considerations for NKCC Option B2 are identical to Option B1. The primary difference between the options is that Option B2 has an indoor recreation pool in lieu of a multi-purpose gym.

Like option B2 the building entry is located adjacent to the parking area and accommodates pedestrian access across 103rd Ave. NE. to the children's play area on the east park parcel. A continuous band of landscaping provides a buffer between the street edge and the one-story volume of the entry level. The program areas and parking stalls not on the entry level are tucked below the primary structure to minimize the visual impact of the building by integrating the building mass into the surrounding residential neighborhood.

The program is organized around a central circulation spine with views down into the natatorium. A lounge and party/meeting room are adjacent to the natatorium and provide view down into the pool activities. The community functions on the west side of the circulation area are identical to Option B1. Light monitors above the pool provide filtered natural light into the heart of the building. The administrative offices and reception desk are located at the main entry. From this location access can be monitored to the recreation and aquatics programs on the lower level or the community focused programing on the entry level. Visitors arrive at an entry lounge where the community can congregate and relax in several lounge areas.

The community events space is located along the primary circulation spine with lounge seating incorporated to provide space for informal gathering. The community event room can accommodate large gatherings and it also can be subdivided into two separate events spaces. Large floor to ceiling windows are envisioned for the west wall of the events space to create a visual connection to the park landscape and to provide views of the program activities. The commercial catering kitchen adjacent to the event space enhances program opportunities on this level and throughout the building.

A game room, roof terrace and arts & crafts studio are located on the west side of the building and they take advantage of views out into the park. The roof top terrace can serve as an outdoor classroom, yoga studio or host a multitude of community functions.

The lower level is accessed by a central stair and elevator behind the reception area. A two-story tall natatorium encloses the recreation pool and deck, which sits below the ground level but is visually open to the entry level above. Clerestory windows provide natural light and views down into the natatorium. The locker and universal changing rooms have direct access to the circulation spine and the natatorium. The fitness room and multi-purpose exercise /activity rooms on the west edge of the building are accessed from the central circulation spine. A childwatch area is also located on the lower level. As with all of the NKCC options, full height glass windows are utilized to maximize daylighting opportunities and take advantage of park views into the landscape.

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Like other options, the buildings form and appearance are born out of the programs and spaces contained within the confines of its walls. Open and opaque walls are used to blend into the landscape. Windows are strategically used to provide daylight and views to the surrounding park. Maximizing daylight and minimizing the need for artificial light is one of the sustainability goals of the project. The large north facing daylight monitors located above the gym will reduce energy usage and the sloped back side of the monitors are perfectly oriented for solar panels and the production of renewable energy on site.

CONCEPT COSTS

Capital building and site construction costs were developed by DCW Cost Management. The cost estimates for all options include design and construction contingencies and the estimates are escalated to a construction start date in May of 2025. The entirety of the feasibility study cost plan can be found in the appendix.

The soft costs were developed using an industry standard 30% mark-up of the construction costs. The costs include design and permitting fees, furniture, fixture and equipment procurement as well as taxes. The sum of the construction and soft costs equate to the total project costs needed to have a completed, fully functioning facility.

Operational costs were developed by Ballard*King. The expense costs outlined in the operational analysis include but are not limited to, staff compensation, supplies, maintenance and utilities. Revenues assumptions are based on current market rates and supplement the operational costs but do not cover the all of anticipated expenses. The net annual operating costs are include in the following charts and the entirety of the operational plans can be found in the appendix.

Capital Cost Summary

Houghton Park & Ride

Option A 103,000 sf		Option B 86,000 sf	
Building	$88M	Building	$75M
Sitework	$14M	Sitework	$8M
Const. Cost	**$102M**	**Const. Cost**	**$83M**
Soft Cost	**$30.5M**	**Soft Cost**	**$25.5M**
Total Project	**$132.5M**	**Total Project**	**$108.5M**

North Kirkland

Option A 74,000 sf		Option B1 49,000 sf (gym)		Option B2 49,000 sf (pool)	
Building	$61M	Building	$41M	Building	$44M
Sitework	$22M	Sitework	$23M	Sitework	$23M
Const. Cost	**$83M**	**Const. Cost**	**$64M**	**Const. Cost**	**$67M**
Soft Cost	**$25.5M**	**Soft Cost**	**$19M**	**Soft Cost**	**$20.5M**
Total Project	**$108.5M**	**Total Project**	**$83M**	**Total Project**	**$87.5M**

Capital estimates are rounded to the nearest $500,000

Capital Cost & Operational Cost Summary

Houghton Park & Ride

	Option A 103,000 sf	Option B 86,000 sf
Building	$88M	$75M
Sitework	$14M	$8M
Const. Cost	**$102M**	**$83M**
Soft Cost	**$30.5M**	**$25.5M**
Total Project	**$132.5M**	**$108.5M**
Expense	$5.9M	$5.4M
Revenue	$4.3M	$4.0M
***Subsidy**	**$1.6M**	**$1.4M**
Cost Recovery	**73%**	**74%**

North Kirkland

	Option A 74,000 sf	Option B1 49,000 sf (gym)	Option B2 49,000 sf (pool)
Building	$61M	$41M	$44M
Sitework	$22M	$23M	$23M
Const. Cost	**$83M**	**$64M**	**$67M**
Soft Cost	**$25.5M**	**$19M**	**$20.5M**
Total Project	**$108.5M**	**$83M**	**$87.5M**
Expense	$4.5M	$2.8M	$4.3M
Revenue	$3.3M	$1.3M	$2.8M
***Subsidy**	**$1.2M**	**$1.5M**	**$1.5M**
Cost Recovery	**73%**	**46%**	**65%**

* Subsidy = Net Annual Operating Cost

Capital estimates are rounded to the nearest $500,000
Operating estimates are rounded to the nearest $100,000

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APPENDIX - SEE ATTACHMENT B

Concept Design Graphic Materials
Feasibility Study Cost Plan (Cost Estimate)
Operational Plan Houghton Park & Ride
Operational Plan North Kirkland Community Center Park
Civil Site Assessment
Preliminary Geotechnical Findings
Preliminary Environmental Review
Traffic & Parking Report
(Workshop & PFEC Presentations available upon request)

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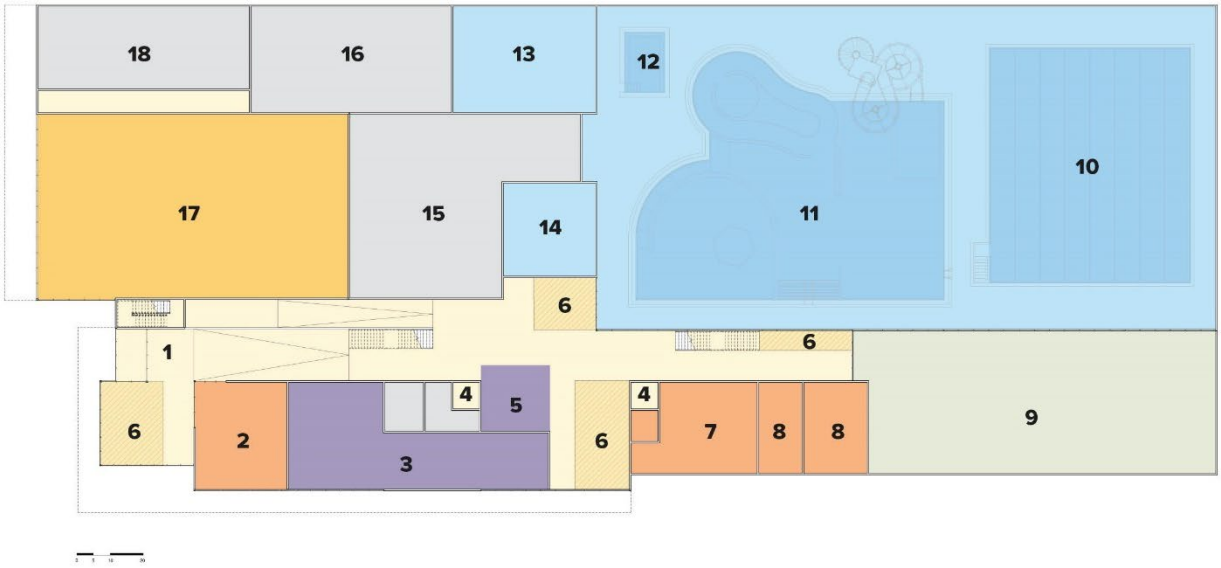
City of Kirkland
Recreation and Aquatics Centers Feasibility Study (DRAFT)

by Opsis Architecture | March 2023

APPENDICES:

- Concept Plans and Graphics
- Feasibility Study Cost Plan by DCW Cost Management
- Operational Plan HPR by Ballard*King
- Operational Plan NKCC by Ballard*King
- Civil Site Assessment by Station 10 Engineering
- Preliminary Geotechnical Findings by GeoEngineers
- Traffic & Parking Evaluation by TENW

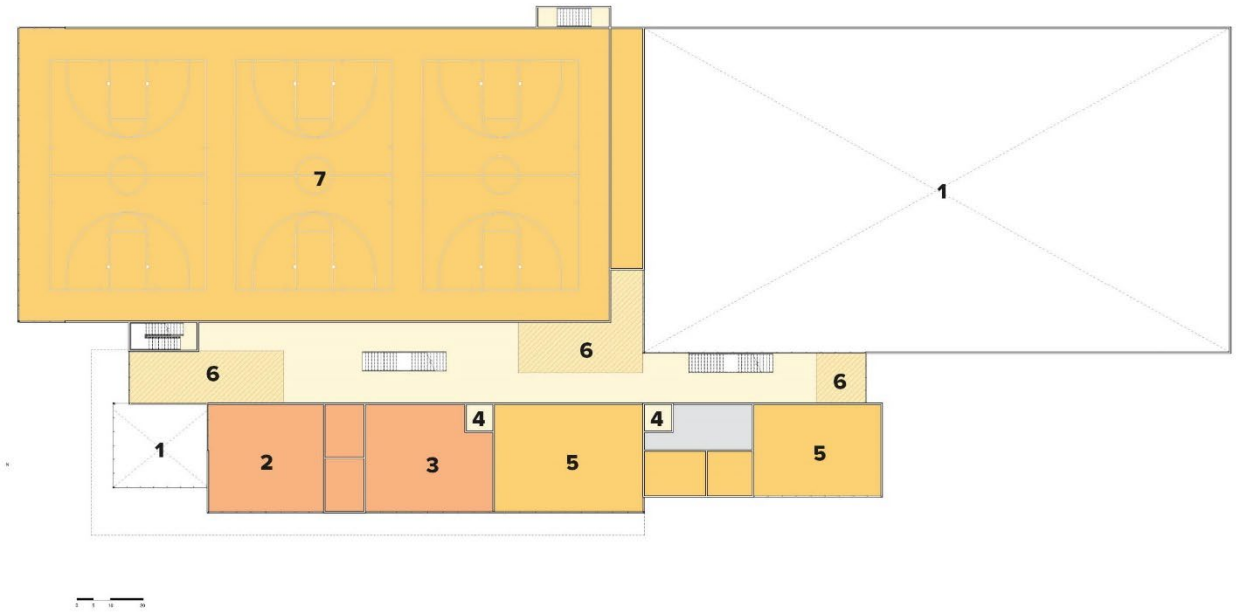
HOUGHTON RECREATION & AQUATICS CENTER - LEVEL 1
OPTION A



1. Entry Lobby
2. Multicultural Center
3. Administrative Offices
4. Elevator
5. Reception
6. Lounge/Social Space
7. Child Watch
8. Party Room
9. Courtyard
10. Lap Pool (8 lane 25 meter)
11. Recreation Pool
12. Spa (12-person)
13. Pool Storage
14. Pool Operations
15. Locker & Universal Changing Rooms
16. Pool Mechanical
17. Fitness Room
18. Maintenance

RECREATION SPACES
AQUATIC SPACES
COMMUNITY SPACES
FACILITY ADMINISTRATION
BUILDING SUPPORT

HOUGHTON RECREATION & AQUATICS CENTER - LEVEL 2
OPTION A



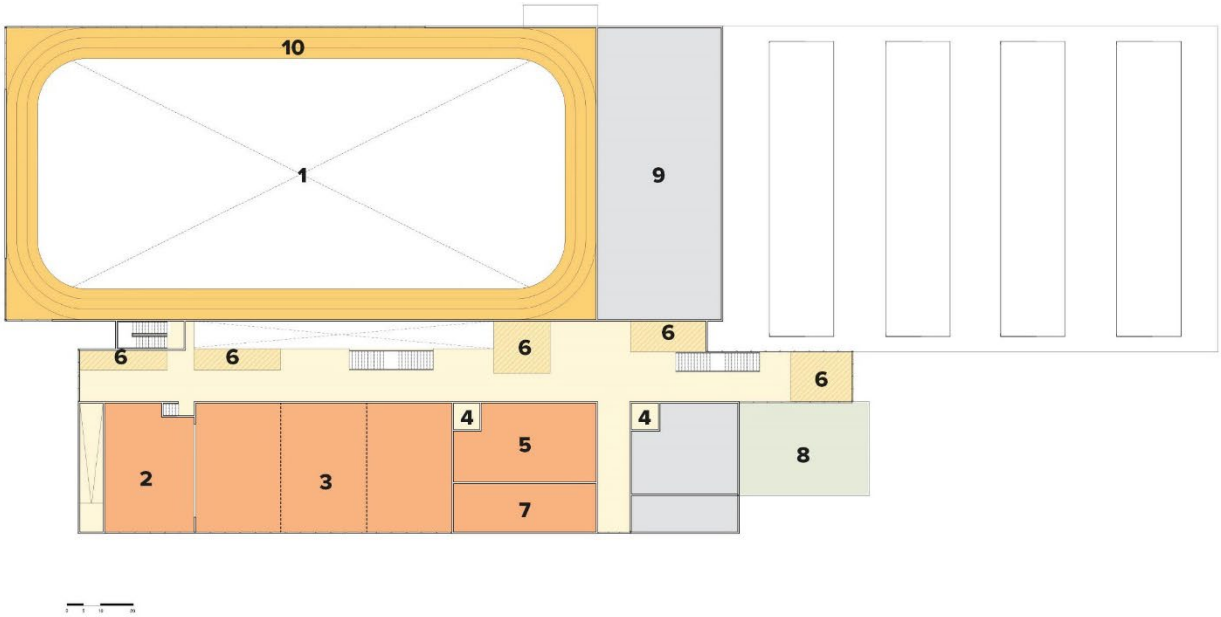
1. Open to Below
2. Arts / Crafts Studio
3. Makerspace
4. Elevator
5. Multi-purpose Exercise / Activity Room
6. Lounge / Social Space
7. Multi-purpose Gym

RECREATION SPACES

COMMUNITY SPACES

BUILDING SUPPORT

HOUGHTON RECREATION & AQUATICS CENTER - LEVEL 3
OPTION A



1. Open to Below
2. Stage / Classroom
3. Community / Event Room(s)
4. Elevator
5. Commercial / Catering Kitchen
6. Lounge / Social Space
7. Storage
8. Roof Terrace
9. Mechanical
10. Walk / Jog Track

RECREATION SPACES

COMMUNITY SPACES

BUILDING SUPPORT

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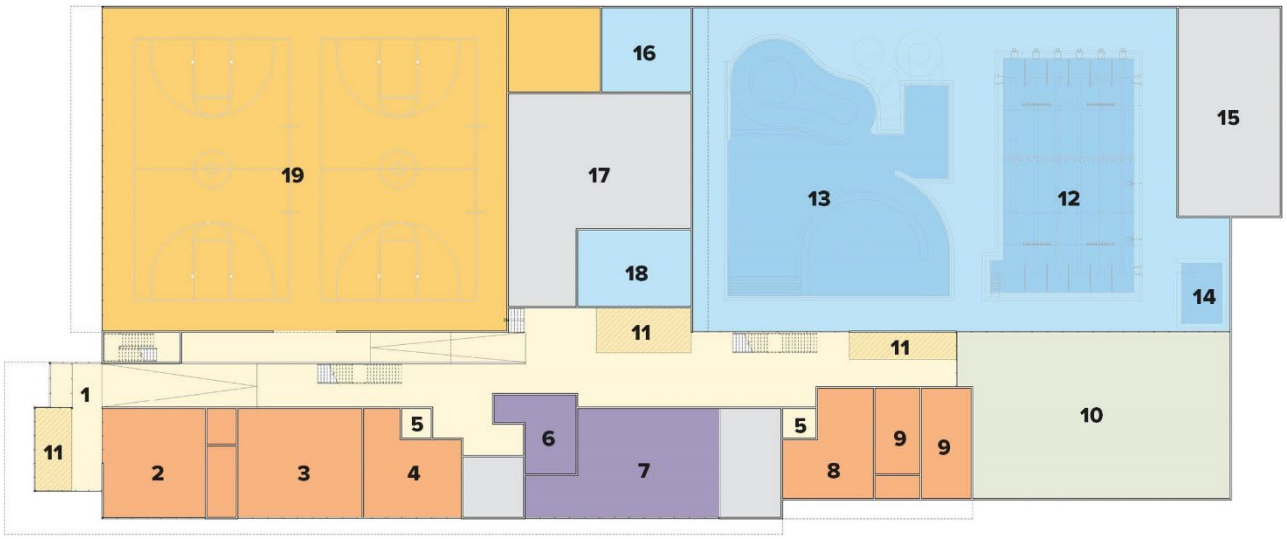
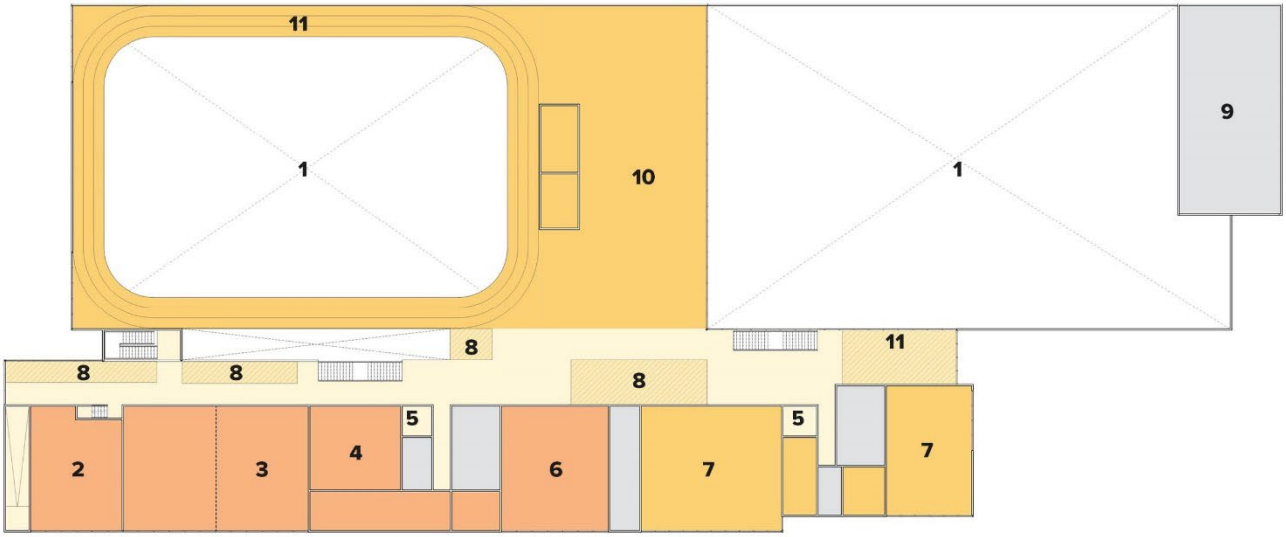
HOUGHTON RECREATION & AQUATICS CENTER - LEVEL 1
OPTION B



1. Entry Lobby
2. Multicultural Center
3. Makerspace
4. Game Room
5. Elevator
6. Reception
7. Administrative Offices
8. Child Watch
9. Party Room
10. Courtyard
11. Lounge / Social Space
12. Lap Pool (8 Lane 25 meter)
13. Recreation Pool
14. Spa (12-person)
15. Pool Mechanical
16. Pool Storage
17. Locker & Universal Changing Rooms
18. Pool Operations
19. Multi-purpose Gym

RECREATION SPACES
AQUATIC SPACES
COMMUNITY SPACES
FACILITY ADMINISTRATION
BUILDING SUPPORT

HOUGHTON RECREATION & AQUATICS CENTER - LEVEL 2
OPTION B



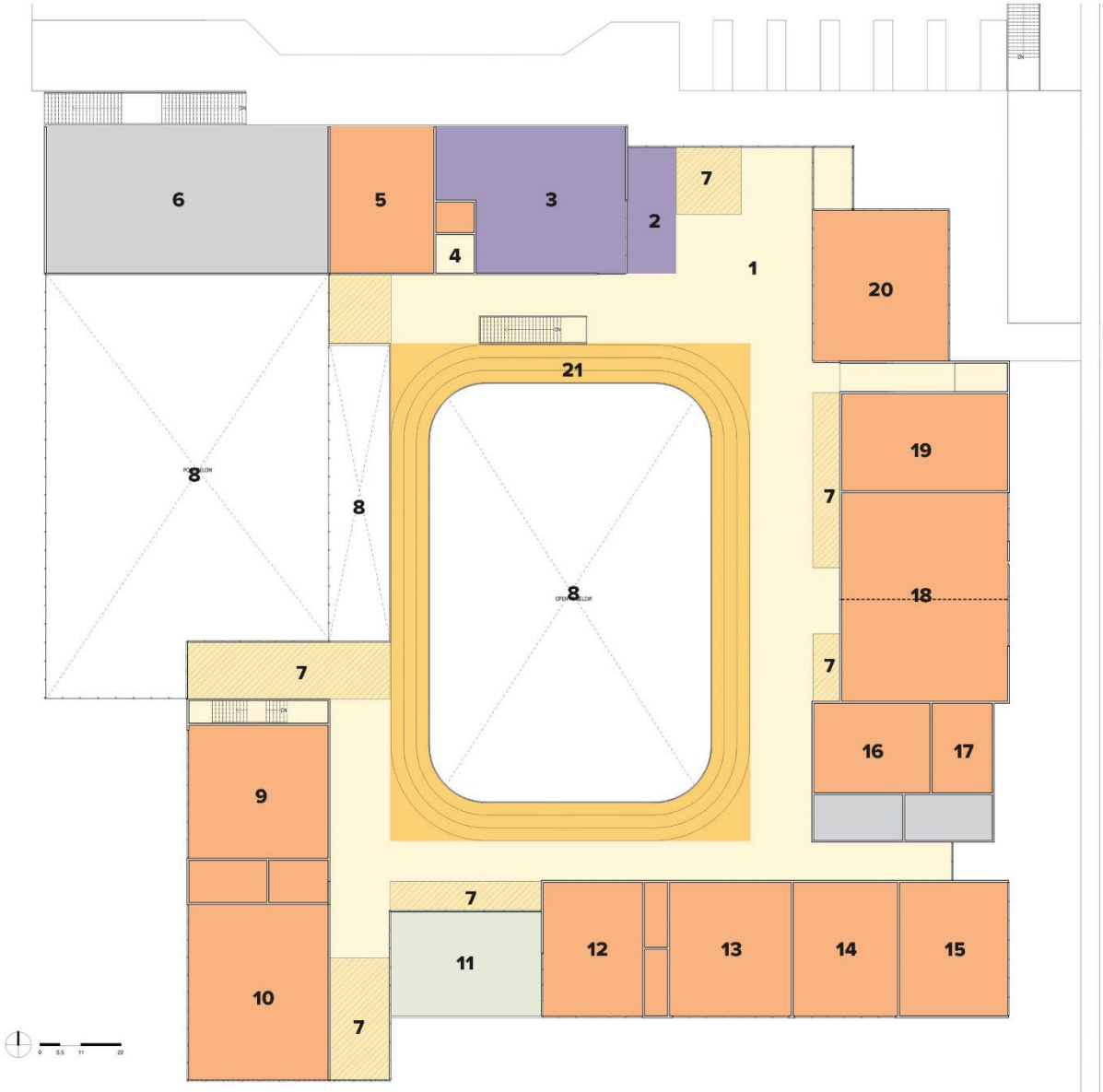
1. Open to Below
2. Stage / Classroom
3. Community / Event Room(s)
4. Commercial / Catering Kitchen
5. Elevator
6. Arts / Crafts Studio
7. Multi-purpose Exercise / Activity Room
8. Lounge / Social Space
9. Mechanical
10. Fitness Room
11. Walk / Jog Track

RECREATION SPACES

COMMUNITY SPACES

BUILDING SUPPORT

NORTH KIRKLAND COMMUNITY CENTER & PARK - ENTRY LEVEL
OPTION A



1. Entry Lobby
2. Reception
3. Administrative Offices
4. Elevator
5. Child Watch
6. Mechanical
7. Lounge / Social Space
8. Open to Below
9. Arts / Crafts Studio
10. Multicultural Center
11. Roof Terrace
12. Multi-purpose Classroom
13. Teen Lounge
14. Game Room
15. Music Room
16. Commercial / Catering Kitchen
17. Storage
18. Community / Event Room(s)
19. Stage / Classroom
20. Senior Lounge
21. Walk / Jog Track

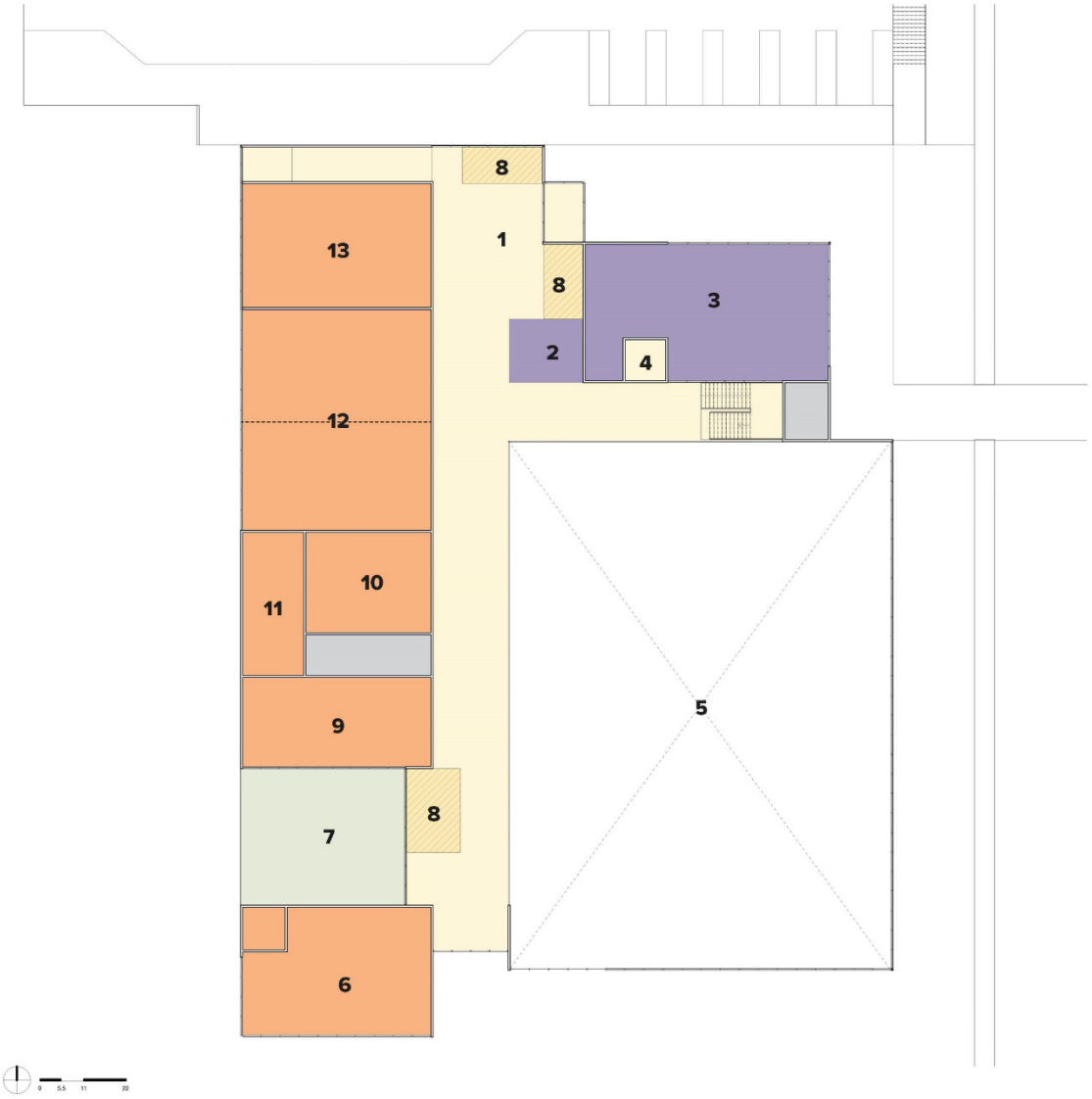
RECREATION SPACES
COMMUNITY SPACES
FACILITY ADMINISTRATION
BUILDING SUPPORT

NORTH KIRKLAND COMMUNITY CENTER & PARK - LOWER LEVEL
OPTION A

1. Multi-puporse Gym
2. Pool Mechanical
3. Locker & Universal Changing Rooms
4. Elevator
5. Aquatics Operation
6. Recreation Pool
7. Party / Meeting Room
8. Multi-purpose Exercise Activity Room
9. Lounge / Social Space
10. Fitness Room

RECREATION SPACES
AQUATIC SPACES
COMMUNITY SPACES
FACILITY ADMINISTRATION

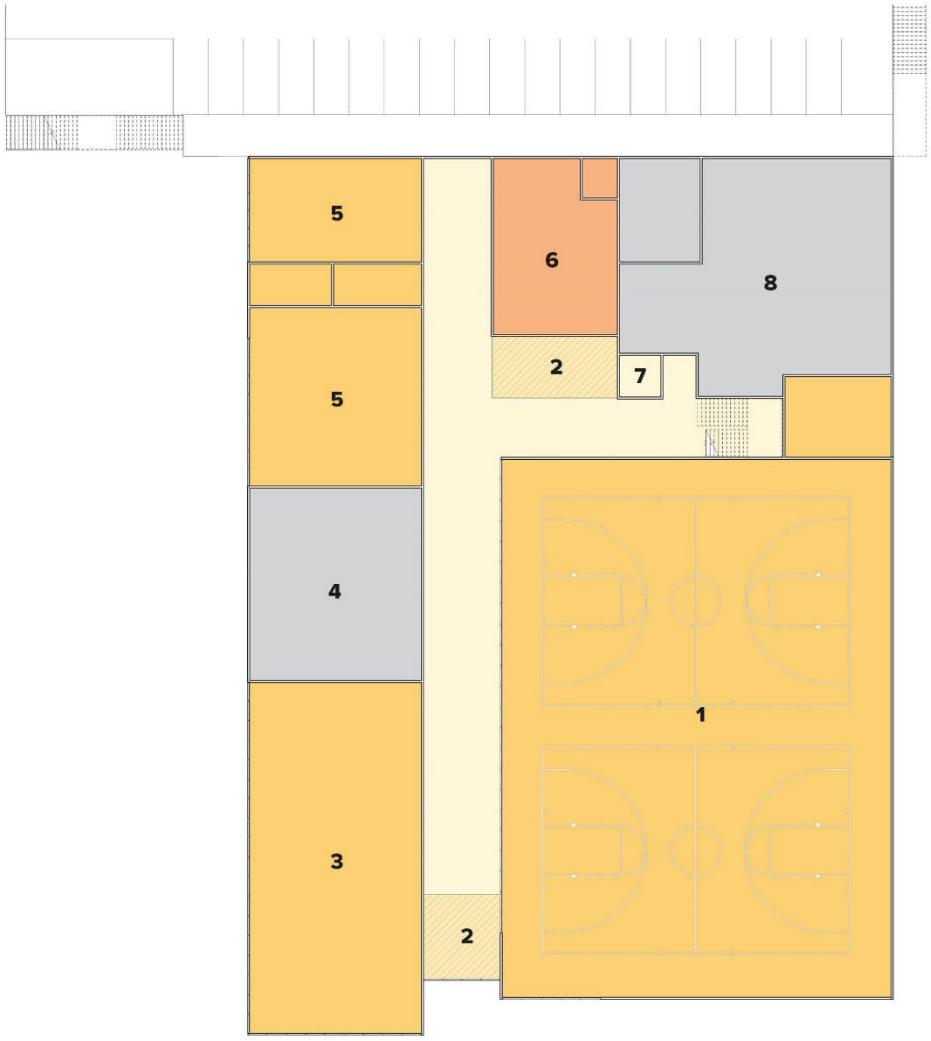
NORTH KIRKLAND COMMUNITY CENTER & PARK - ENTRY LEVEL
OPTION B1



1. Entry Lobby
2. Reception
3. Administrative Offices
4. Elevator
5. Open to Below
6. Arts / Crafts Studio
7. Roof Terrace
8. Lounge / Social Space
9. Game Room
10. Commercial / Catering Kitchen
11. Storage
12. Community / Event Room(s)
13. Stage / Classroom

RECREATION SPACES
COMMUNITY SPACES
FACILITY ADMINISTRATION
BUILDING SUPPORT

NORTH KIRKLAND COMMUNITY CENTER & PARK - LOWER LEVEL
OPTION B1



1. Multi-purpose Gym
2. Lounge / Social Space
3. Fitness Room
4. Locker & Universal Changing Rooms
5. Multi-purpose Exercise Activity Room
6. Child Watch
7. Elevator
8. Mechanical

RECREATION SPACES

COMMUNITY SPACES

BUILDING SUPPORT

NORTH KIRKLAND COMMUNITY CENTER & PARK - ENTRY LEVEL
OPTION B2

1. Entry Lobby
2. Reception
3. Administrative Offices
4. Elevator
5. Open to Below
6. Arts / Crafts Studio
7. Roof Terrace
8. Lounge / Social Space
9. Party / Meeting Room(s)
10. Game Room
11. Commercial / Catering Kitchen
12. Storage
13. Community / Event Room(s)
14. Stage / Classroom

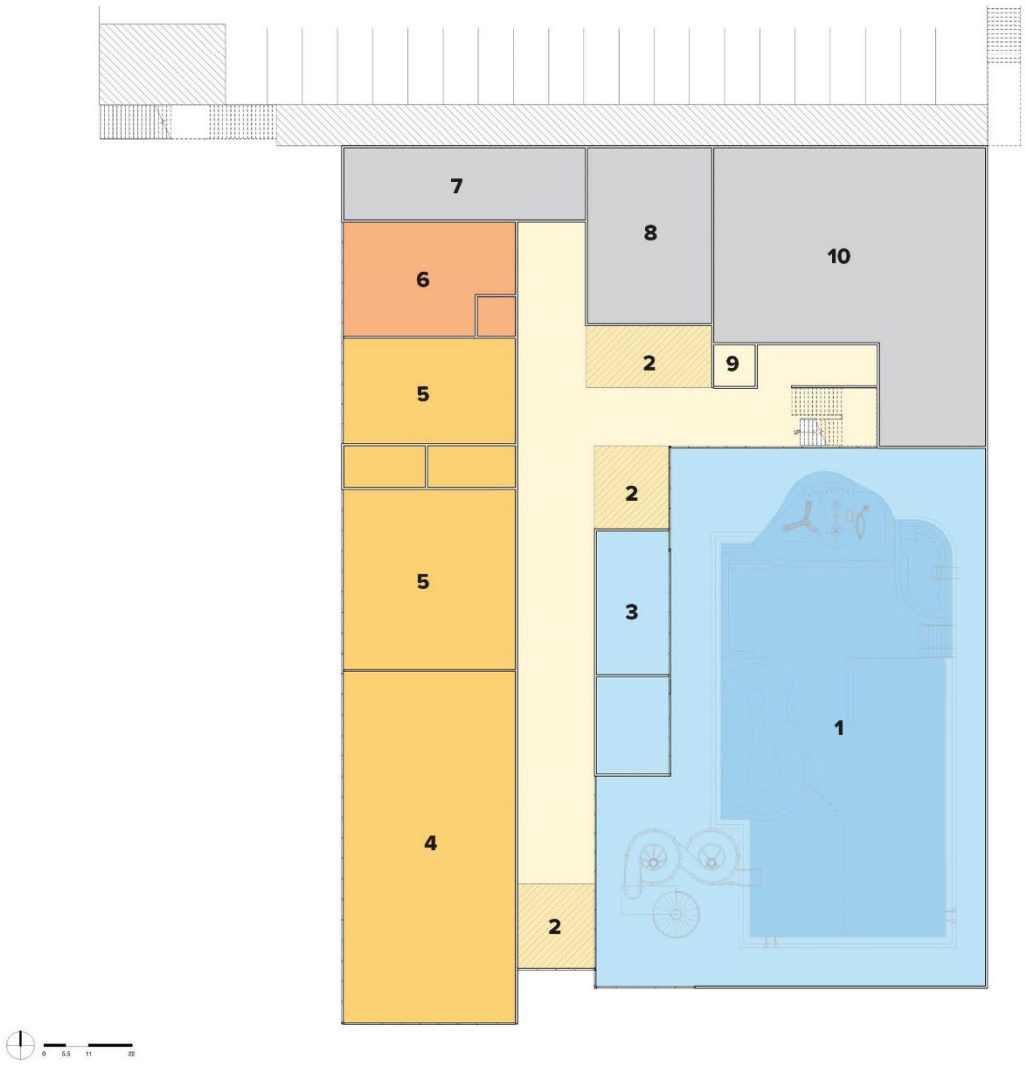
RECREATION SPACES

COMMUNITY SPACES

FACILITY ADMINISTRATION

BUILDING SUPPORT

NORTH KIRKLAND COMMUNITY CENTER & PARK - LOWER LEVEL
OPTION B2



1. Recreation Pool
2. Lounge / Social Space
3. Aquatic Operation
4. Fitness Room
5. Multi-purpose Exercise / Activity Room
6. Child Watch
7. Mechanical
8. Pool Mechanical
9. Elevator
10. Locker & Universal Changing Rooms

RECREATION SPACES
AQUATIC SPACES
COMMUNITY SPACES
FACILITY ADMINISTRATION

City of Kirkland, Washington
Recreation & Aquatics Centers

City of Kirkland, Washington
Recreation & Aquatics Centers

Prepared for:

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Prepared by:

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City of Kirkland, Washington
Recreation & Aquatics Centers

Contents

City of Kirkland, Washington
Recreation & Aquatics Centers

Overall Summary

	SF	$/SF	TOTAL
Houghton Park & Ride			
Houghton (Building) - Option 1	109,705	798.55	87,605,079
Houghton (Sitework) - Option 1	226,601	62.71	14,209,651
TOTAL OPTION 1 CONSTRUCTION COST			101,814,731
Houghton (Building) - Option 2	91,463	824.51	75,412,207
Houghton (Sitework) - Option 2	226,601	33.85	7,670,000
TOTAL OPTION 2 CONSTRUCTION COST			83,082,207
North Kirkland Community Center & Park			
North Kirkland (Building) - Option 1	78,700	772.41	60,788,391
North Kirkland (Sitework) - Option 1	187,854	119.80	22,504,592
TOTAL OPTION 1 CONSTRUCTION COST			83,292,983
North Kirkland (Building) - Option 2	51,712	793.57	41,037,315
North Kirkland (Sitework) - Option 2	187,854	120.65	22,664,355
TOTAL OPTION 2 CONSTRUCTION COST			63,701,669

ALTERNATES	
Alt 1: Houghton Option 1 - Steel Structure in lieu of Mass Timber	2,625,553
Alt 2: Houghton Option 2 - Steel Structure in lieu of Mass Timber	2,173,875
Alt 3: North Kirkland Option 1 - Steel Structure in lieu of Mass Timber	1,841,728
Alt 4: North Kirkland Option 2 - Steel Structure in lieu of Mass Timber	1,242,559
Alt 5: North Kirkland Option 2 - Pool in lieu of Basketball Court	3,330,114

City of Kirkland, Washington
Recreation & Aquatics Centers

Scope of Work

Project Scope Description

The project comprises cost planning for the Kirkland Recreation & Aquatics feasibility study. The scope of work consists of two possible designs each at two locations for a total of four options under review. The first location is Houghton Park & Ride located southeast of the intersection of NE 70th Pl and 116th Ave NE, immediately adjacent to I-405. The second location is North Kirkland Community Center & Park located north of NE 124th St at 103rd Ave NE.

The nominal program size ranges from 45,000 to 110,000 SF. All concepts include a gymnasium, cardio/weights and multi-purpose fitness & community/cultural spaces with associated support/admin spaces. A variety of aquatics spaces are represented across all options. Refer to the facility program spaces slides for additional specificity.

Site improvements consist primarily of revised/new parking, drive aisles and landscaping (TBD). Existing mature trees will be preserved when possible if outside of the building footprint. Electrical, telecom, water, sewer and storm services are assumed to be available at the nearest right-of-way.

Project Design Documents

The cost report is based on the following documents including supplemental information:
- Kirkland Narrative, dated 12.9.22
- Cost Estimate Package_r, dated 12.9.22

Procurement

It is anticipated that the project will be delivered by traditional low bid procurement with a minimum of 4 qualified General Contractors for competitive market pricing. The start date is anticipated for: Q1 2024.

City of Kirkland, Washington
Recreation & Aquatics Centers

Basis of Estimate

Assumptions and Clarifications

This estimate is based on the following assumptions and clarifications:

1. Hazardous materials abatement is **NOT** included.
2. The majority of work will be performed during typical daytime hours.
3. Project locations will be made unoccupied during construction.
4. **Excludes** jurisdiction fees and Owner's contingency**.**
5. Corporate Tax is included.
6. Excludes any ROW work. TBD.

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1 Summary

			%	$/SF	TOTAL
			Gross Area:	109,705 SF	
A10	Foundations		2%	14.33	1,572,608
A	Substructure		2%	14.33	1,572,608
B10	Superstructure		11%	83.96	9,211,342
B20	Exterior Enclosure		7%	54.33	5,959,829
B30	Roofing		3%	26.04	2,857,214
B	Shell		21%	164.34	18,028,384
C10	Interior Construction		3%	26.37	2,892,494
C20	Stairways		1%	4.78	524,000
C30	Interior Finishes		3%	23.60	2,589,457
C	Interiors		7%	54.75	6,005,951
D10	Conveying Systems		0%	3.09	339,000
D20	Plumbing Systems		2%	18.01	1,975,402
D30	Heating, Ventilation & Air Conditioning		11%	86.29	9,466,692
D40	Fire Protection		1%	6.12	671,296
D50	Electrical Lighting, Power & Communications		8%	60.99	6,691,042
D	Services		22%	174.50	19,143,432
E10	Equipment		1%	4.37	479,419
E20	Furnishings		0%	1.88	206,189
E	Equipment & Furnishings		1%	6.25	685,608
F10	Special Construction		5%	43.14	4,732,520
F20	Selective Demolition		0%	0.00	0
F	Special Construction & Demolition		5%	43.14	4,732,520
BUILDING ELEMENTAL COST BEFORE CONTINGENCIES			57%	457.30	50,168,504
	Design Contingency	15.00%	9%	68.60	7,525,276
	Construction Contingency	5.00%	3%	26.29	2,884,689
BUILDING ELEMENTAL COST INCLUDING CONTINGENCIES			69%	552.19	60,578,469
	General Conditions	7.00%	5%	38.65	4,240,493
	General Requirements	7.50%	6%	44.31	4,861,422
	Corporate Tax	0.57%	0%	3.62	397,178
	SDI	1.75%	1%	11.18	1,226,357
	Office Overhead & Profit	4.50%	4%	29.25	3,208,676
	Bonds and Insurance	1.50%	1%	10.19	1,117,689
	Permit				*By Owner*
BUILDING CONSTRUCTION COST BEFORE ESCALATION			86%	689.40	75,630,284
	Escalation to Start Date (May 2025)	15.83%	14%	109.15	11,974,795
RECOMMENDED BUDGET			100%	798.55	87,605,079

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1

	Quantity	Unit	Rate	Total
Controls				
Building Footprint	51,670	SF		
Level 1	51,670	SF		
Level 2	32,115	SF		
Level 3	24,650	SF		
Roof Terrace - Unconditioned Space	1,270	SF		
Building ht. Total, Average	44	LF		
Exterior Enclosure Total	46,248	LF		
Cladding	30,061	LF		
Glazing	16,187	LF		
Roof, typ	51,670	SF		
Soffit	2,980	SF		
Total Building Area	**109,705**	**SF**		
A10 Foundations	**109,705**	**SF**	**14.33**	**1,572,608**
A1010 Standard Foundations	109,705	SF	5.61	615,198
Building excavation	5,856	CY	18.00	105,401
Haul and dispose	5,856	CY	20.00	117,112
Reinforced footings				
Continuous footing - 2' x 2'	163	CY	690.00	112,470
Spread footing - 4' x 4'	36	CY	690.00	24,856
Perimeter insulation	2,188	SF	4.00	8,752
Perimeter drainage and bedding	1,144	LF	32.00	36,608
Elevator pit - complete	2	EA	22,500.00	45,000
Anchors and connections, allow	1	LS	15,000.00	15,000
Temp shoring, allow	1	LS	150,000.00	150,000
A1030 Slab On Grade	109,705	SF	8.73	957,410
Slab on grade - 4" thk., reinforced	51,670	SF	13.10	676,877
Vapor barrier	51,670	SF	3.00	155,010
Miscellaneous concrete specialties	51,670	SF	1.15	59,421
Waterproofing	2,188	SF	12.50	27,350
Allowance for blockouts	51,670	SF	0.75	38,753
A20 Basement Construction	**109,705**	**SF**		
A2010 Basement Excavation	109,705	SF		
No work anticipated				*NIC*

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1

	Quantity	Unit	Rate	Total
B10 Superstructure	**109,705**	**SF**	**83.96**	**9,211,342**
B1010 Floor Construction	**109,705**	**SF**	**82.49**	**9,049,171**
Transfer beams	162	CY	1,040.00	168,557
Stem wall - 1' ht.	41	CY	910.00	36,872
Mass timber construction - columns and beams				
Wood timber package				
CLT panels, spline ends and side joints	109,705	SF	28.00	3,071,740
Glu-lam beams	4,313	LF	130.00	560,625
Glu-lam blocking	61	EA	554.00	33,677
Glu-lam columns	2,675	LF	124.00	331,661
Layout/installation	109,705	SF	18.50	2,029,543
Lifting system	1	LS	50,000.00	50,000
Hardware	1	LS	200,000.00	200,000
Shop drawings	1	LS	75,000.00	75,000
Transport	1	LS	185,000.00	185,000
Decking				
Mass plywood panels - see "Wood timber package"				*incl. above*
Acoustic mat	56,765	SF	6.21	352,511
2" gypcrete	56,765	SF	5.00	283,825
Firestopping	56,765	SF	0.75	42,574
Sealants	56,765	SF	0.55	31,221
Shear wall	10,511	SF	85.00	893,435
Shear wall - interior	7,635	SF	85.00	648,933
Channels and angels	1	LS	30,000.00	30,000
Structural steel				
Elevator hoist beams	1.00	TNs	16,500.00	16,500
Misc. steel angles and connections	1	LS	7,500.00	7,500
B1020 Roof Construction	**109,705**	**SF**	**1.48**	**162,170**
Mass timber construction - beams and decking				*Incl. above*
Beams - glu-lam				*incl.*
CLT decking				*incl.*
Hardware				*incl.*
PV support system - not required				*NIC*
Soffit	2,980	SF	35.00	104,300
Strapping, blocking and connections, add	51,670	SF	1.12	57,870

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1

	Quantity	Unit	Rate	Total
B20 Exterior Enclosure	**109,705**	**SF**	**54.33**	**5,959,829**
B2010 Exterior Walls	109,705	SF	37.29	4,090,588
Wood stud framing	46,248	SF		
Framing	46,248	SF	19.10	883,344
Sheathing	30,061	SF	6.50	195,399
Batt insulation R-21	30,061	SF	6.20	186,381
Weather barrier	30,061	SF	7.20	216,443
Cladding				
Metal panel system	15,031	SF	65.00	976,997
Stained wood system	9,018	SF	75.00	676,383
Terracotta system	6,012	SF	88.00	529,082
Facias, bands and screens	3,282	SF	35.00	114,870
Caps, flashing and sealants, allow	109,705	SF	2.75	301,689
Louvers, allow	1	LS	10,000.00	10,000
B2020 Exterior Windows	109,705	SF	16.57	1,817,960
Curtainwall	4,662	SF	140.00	652,701
Storefront	10,058	SF	102.00	1,025,895
Clerestory	1,467	SF	95.00	139,365
B2030 Exterior Doors	109,705	SF	0.47	51,280
Storefront, double	4	EA	5,425.00	21,700
Storefront, single	6	EA	3,500.00	21,000
HM flush, single	3	EA	2,860.00	8,580
B30 Roofing	**109,705**	**SF**	**26.04**	**2,857,214**
B3010 Roof Coverings	109,705	SF	20.22	2,218,214
TPO membrane system	51,670	SF	18.55	958,479
Coverboard - 7" thk.	51,670	SF	6.80	351,356
Insulation - R-30	51,670	SF	8.00	413,360
Vapor barrier	51,670	SF	2.00	103,340
Fall protection, allow	1	LS	50,000.00	50,000
Caps, flashing and sealants	51,670	SF	3.50	180,845
Roof walking pads, allow	1,500	SF	28.50	42,750
Roof terrace	1,270	SF	38.00	48,260
Parapet	1,641	LF	42.55	69,825

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1

	Quantity	Unit	Rate	Total
B3020 Roof Openings	109,705	SF	5.82	639,000
Roof monitor, incl. skylight	2,880	SF	210.00	604,800
Skylights	200	SF	171.00	34,200
C10 Interior Construction	**109,705**	**SF**	**26.37**	**2,892,494**
C1010 Partitions	109,705	SF	26.37	2,892,494
Solid and glazed walls				
Wood stud framing - 2x4				
Framing	60,123	SF	13.50	811,659
Acoustical batt insulation	60,123	SF	4.50	270,553
GWB, 2x	120,246	SF	4.85	583,192
Shaft wall, metal stud - 4"	1,892	SF		
Framing, 2x	3,784	SF	20.40	77,194
Acoustical batt insulation	1,892	SF	4.50	8,514
GWB, 2x	3,784	SF	4.85	18,352
Operable partition	80	LF	1,000.00	80,000
Folding glass wall	50	LF	1,500.00	75,000
Interior of exterior walls	30,061	SF	8.50	255,522
Storefront, allow	1,500	SF	98.00	147,000
Doors and frames				
Storefront, double	4	EA	4,750.00	19,000
HM, glass panel - single	15	EA	2,885.00	43,275
HM, flush - single	24	EA	2,385.00	57,240
Fittings				
Window treatment - roller shades	8,093	SF	11.50	93,075
Wayfinding and signage	109,705	SF	0.66	71,966
Whiteboards and writable surfaces, allow	400	SF	36.50	14,600
Corner guards and kick plates	1	LS	10,000.00	10,000
Mirrors - restroom	6	EA	280.00	1,680
Restroom fitout	6	EA	1,500.00	9,000
Lockers, allow	50	EA	375.00	18,750
Benches, allow	10	EA	750.00	7,500
Guardrail, glazed	954	LF	230.00	219,420
C20 Stairways	**109,705**	**SF**	**4.78**	**524,000**
C2010 Stair Construction	109,705	SF	4.78	524,000
Feature stair	6	FLT	75,000.00	450,000
Egress stairs	4	FLT	18,500.00	74,000

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1

	Quantity	Unit	Rate	Total
C30 Interior Finishes	**109,705**	**SF**	**23.60**	**2,589,457**
C3010 Wall Finishes	109,705	SF	5.81	636,872
Paint	154,091	SF	2.10	323,592
Tile to 7' ht.	3,164	SF	20.00	63,280
Acoustic paneling, allow	1	LS	150,000.00	150,000
Misc. graphics and special finishes, allow	1	LS	100,000.00	100,000
C3020 Floor Finishes	109,705	SF	12.60	1,382,317
Walk-off mat	200	SF	15.00	3,000
Carpet tile	8,755	SF	6.50	56,908
Linoleum	6,857	SF	9.50	65,142
Polished concrete	17,583	SF	8.50	149,456
Sealed concrete	10,687	SF	3.90	41,679
Epoxy resinous flooring	5,205	SF	22.00	114,510
Tile	1,810	SF	20.00	36,200
Rubber sport flooring	16,025	SF	18.30	293,258
Sprung hardwood flooring	2,887	SF	31.60	91,229
Hardwood sport flooring	18,962	SF	28.00	530,936
C3030 Ceiling Finishes	109,705	SF	5.20	570,269
ACT	15,612	SF	8.50	132,702
ACT, washable	1,092	SF	13.50	14,742
Acoustic treatment, allow	1	LS	100,000.00	100,000
Open to structure, painted	74,029	SF	1.85	136,954
GWB, painted	17,702	SF	10.50	185,871
D10 Conveying Systems	**109,705**	**SF**	**3.09**	**339,000**
D1010 Elevators & Lifts	109,705	SF	3.09	339,000
4500 LB - elevator w/ SS finish system	6	ST	56,500.00	339,000
D20 Plumbing Systems	**109,705**	**SF**	**18.01**	**1,975,402**
D2010 Plumbing Fixtures	109,705	SF	3.50	383,968
Sanitary fixtures, allow	109,705	SF	3.50	383,968
Water closets				*incl.*
Lavatories				*incl.*
Mop sink				*incl.*
Kitchen sinks				*incl.*
Hose bib				*incl.*

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1

	Quantity	Unit	Rate	Total
Deck-mounted eye wash				*incl.*
Drinking fountain				*incl.*
Connections				*incl.*
D2020 Domestic Water Distribution	109,705	SF	7.20	789,876
Domestic water, allow	109,705	SF	7.20	789,876
Piping and drainage				*incl.*
Domestic water, 2" HW/CW				*incl.*
Insulation				*incl.*
Seismic bracing				*incl.*
Shut off valves and specialties				*incl.*
Hot water heaters				*incl.*
Expansion tanks				*incl.*
HW circulation pump				*incl.*
Mixing valves				*incl.*
Reduced pressure backflow preventer, allow				*incl.*
D2030 Sanitary Waste	109,705	SF	6.92	759,159
Sanitary waste, allow	109,705	SF	6.92	759,159
Sanitary and vent piping				*incl.*
Floor drains				*incl.*
Sanitary filtration				*incl.*
Ancillaries				*incl.*
D2040 Rain Water Drainage	109,705	SF	0.39	42,400
Gutters and downspouts	1,408	LF	25.00	35,200
Roof drains	6	EA	1,200.00	7,200
D30 Heating, Ventilation & Air Conditioning	**109,705**	**SF**	**86.29**	**9,466,692**
D3020 Heat Generating Systems	109,705	SF	44.26	4,855,471
VRF system w/ heat recovery, complete	109,965	SF	36.50	4,013,723
Energy recovery unit-integrated	2	EA	15,000.00	30,000
Piping and insulation, incl. VRF refrigerant piping	109,965	SF	7.20	791,748
Ancillaries	1	LS	20,000.00	20,000
D3040 Distribution Systems	109,705	SF	24.44	2,680,825
Ductwork including flex	120,676	LBs	13.50	1,629,119
Electric duct heaters	241	EA	1,350.00	325,824

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1

	Quantity	Unit	Rate	Total
Diffusers and grilles	731	EA	190.00	138,960
Exhaust - general	109,705	SF	5.35	586,922
D3090 Other HVAC Systems & Equipment	109,705	SF	17.60	1,930,397
DDC controls	109,705	SF	14.50	1,590,723
Dehumidification system.	109,705	SF	1.10	120,676
Seismic bracing	109,705	SF	1.70	186,499
Testing and balancing	160	HR	130.00	20,800
Commissioning assist	90	HR	130.00	11,700
D40 Fire Protection	**109,705**	**SF**	**6.12**	**671,296**
D4010 Sprinklers	109,705	SF	6.09	668,296
Fire sprinkler system, complete	109,705	SF	5.85	641,774
Dry system - soffit	2,980	SF	8.90	26,522
D4030 Fire Protection Specialties	109,705	SF	0.03	3,000
Fire extinguisher boxes	8	EA	375.00	3,000
CO2 alarm system - not required				*NIC*
D50 Electrical Lighting, Power & Communications	**109,705**	**SF**	**60.99**	**6,691,042**
D5010 Electrical Service & Distribution	109,705	SF	11.66	1,279,412
Main distribution board	1	LS	250,000.00	250,000
Distribution panels	1	LS	60,000.00	60,000
Transformers	1	LF	50,000.00	50,000
Secondary conduit and feeder - allow	109,705	SF	4.50	493,673
Grounding	1	LS	20,000.00	20,000
Metering	109,705	SF	0.55	60,338
Receptacles, typ.	549	EA	575.00	315,402
PV system - not required				*NIC*
Ancillaries and equipment	1	LS	30,000.00	30,000
D5020 Lighting & Branch Wiring	109,705	SF	24.23	2,657,920
Lighting controls	109,705	SF	4.50	493,673
Branch wiring and conduit	109,705	SF	5.00	548,525
LED lighting	109,705	SF	14.50	1,590,723
Exterior lighting on building	1	LS	25,000.00	25,000

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1

	Quantity	Unit	Rate	Total
D5030 Communications & Security	109,705	SF	22.03	2,416,448
Phone and data including wiring and conduit	109,705	SF	4.30	471,732
Wireless access points	6	EA	1,650.00	9,900
Fire alarm system	109,705	SF	3.00	329,115
DAS	1	LS	50,000.00	50,000
PA system	109,705	SF	1.21	132,743
A/V and sound system - infrastructure only	109,705	SF	3.85	422,364
Projection screen, recessed	4	EA	4,850.00	19,400
Speakers	8	EA	2,600.00	20,800
Additional equipment, allow	1	LS	500,000.00	500,000
CCTV - infrastructure only	109,705	SF	3.75	411,394
Access control	6	EA	5,500.00	33,000
ADA button	4	EA	4,000.00	16,000
D5040 Electrical Specialty	109,705	SF	3.07	337,263
Electrical to mechanical systems - equipment connections	109,705	SF	2.50	274,263
PV systems, allow	15	KW	4,200.00	63,000
E10 Equipment	109,705	SF	4.37	479,419
E1010 Commercial Equipment	109,705	SF	1.10	121,000
Type 1 hood - cultural kitchen	1	EA	121,000.00	121,000
Refrigerator/freezer				*by Owner*
Microwave				*by Owner*
Coffer maker				*by Owner*
E1090 Other Equipment	109,705	SF	3.27	358,419
Basketball backboards - retractable	6	EA	8,500.00	51,000
Court divider curtain	2	EA	17,300.00	34,600
Wall padding	4,165	SF	8.60	35,819
Scoreboard	2	EA	18,500.00	37,000
Food service equipment, allow	1	LS	200,000.00	200,000
E20 Furnishings	109,705	SF	1.88	206,189
E2010 Fixed Furnishings	109,705	SF	1.88	206,189
Mirror wall - 8' ht.	1,228	SF	36.15	44,392
Ballet barre	154	LF	69.20	10,622
Reception desk, allow	1	LS	12,500.00	12,500
Chair rail, allow	200	LF	85.00	17,000
Uppers, PLAM (allow)	100	LF	380.00	38,000

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 1

	Quantity	Unit	Rate	Total
Counters incl. cabinets, PLAM (allow)	125	LF	425.00	53,125
Counters incl. cabinets, solid surface (allow)	50	LF	475.00	23,750
Cubbies, allow	20	LF	340.00	6,800
E2020 Movable Furnishings	109,705	SF		
FF&E - by Owner				*FF&E*
F10 Special Construction	**109,705**	**SF**	**43.14**	**4,732,520**
F1010 Special Structures	109,705	SF	43.14	4,732,520
New pool construction, allow	11,512	SF	390.00	4,489,680
Pool equipment, allow	1	LS	75,000.00	75,000
Pool mech/plumbing				*incl. above*
Natatorium decking	9,222	SF	18.20	167,840

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Sitework) - Option 1 Summary

			%	$/SF	TOTAL
			Gross Area:	226,601 SF	
G10	Site Preparation		8%	5.28	1,197,394
G20	Site Improvements		38%	23.83	5,399,837
G30	Site Mechanical Utilities		9%	5.47	1,239,562
G40	Site Electrical Utilities		2%	1.33	300,600
G	Building Sitework		57%	35.91	8,137,393
SITE ELEMENTAL COST BEFORE CONTINGENCIES			57%	35.91	8,137,393
	Design Contingency	15.00%	9%	0.00	1,220,609
	Construction Contingency	5.00%	0%	2.06	467,900
SITE ELEMENTAL COST INCLUDING CONTINGENCIES			69%	43.36	9,825,902
	General Conditions	7.00%	5%	3.04	687,813
	General Requirements	7.50%	6%	3.48	788,529
	Corporate Tax (OR)	0.57%	0%	0.28	64,423
	Subcontractor Default Insurance (OR)	1.75%	0%	0.88	198,917
	Office Overhead & Profit	4.50%	4%	2.30	520,451
	Bonds and Insurance	1.50%	1%	0.80	181,291
	Permit				*By Owner*
SITE CONSTRUCTION COST BEFORE ESCALATION			86%	54.14	12,267,325
	Escalation to Start Date (May 2025)	15.83%	14%	8.57	1,942,326
RECOMMENDED BUDGET			100%	62.71	14,209,651

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Sitework) - Option 1

	Quantity	Unit	Rate	Total
Control Quantities				
Program Areas	226,601	SF		
Building footprint	*51,670*	*SF*		
Parking Lot	82,875	SF		
Asphalt	*82,875*	*SF*		
Pedestrian Paving	22,740	SF		
Concrete - sidewalk	*18,090*	*SF*		
Concrete w/ integral color - courtyard	*4,650*	*SF*		
Site Development	19,540	SF		
Raised parking structure	*19,540*	*SF*		
Landscape	49,776	SF		
Planting area	*49,776*	*SF*		
G10 Site Preparation	**226,601**	**SF**	**5.28**	**1,197,394**
G1010 Site Clearing	226,601	SF	0.79	178,615
Construction entrance	1	EA	5,000.00	5,000
Construction fence	2,170	LF	13.50	29,295
Erosion control w/ catch basin filters and monitoring	226,601	SF	0.20	45,320
Tree protection, allow	1	LS	15,000.00	15,000
Utility protection, allow	1	LS	10,000.00	10,000
Temp facilities	16	MO	1,500.00	24,000
Dewatering	1	LS	15,000.00	15,000
Construction survey, incl. layout	1	LS	35,000.00	35,000
G1020 Site Demolition and Relocations	226,601	SF	2.07	468,867
Clear and grub - existing vegetation	33,990	SF	0.75	25,493
Demo - hardscape	192,611	SF	2.25	433,374
Demo - misc. site obstructions, allow	1	LS	10,000.00	10,000
G1030 Site Earthwork	226,601	SF	2.43	549,912
Mass excavation - building, see 'Building"				*incl.*
Mass excavation	6,479	CY	18.00	116,621
Haul and dispose	6,479	CY	20.00	129,579
Grading - incl. compaction	226,601	SF	0.50	113,301
Base aggregates				
Building footprint - 12" depth	1,914	CY	45.00	86,117
Vehicular paving - 6" depth	1,897	CY	45.00	85,346
Pedestrian paving - 6" depth	421	CY	45.00	18,950

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Sitework) - Option 1

	Quantity	Unit	Rate	Total
G1040 Hazardous Waste Remediation	226,601	SF		
No work anticipated				*NIC*
G20 Site Improvements	**226,601**	**SF**	**23.83**	**5,399,837**
G2010 Roadways	226,601	SF		
No work anticipated				*NIC*
G2020 Parking Lots	226,601	SF	2.60	590,025
Asphalt	82,875	SF	4.75	393,656
Striping	82,875	SF	0.25	20,719
Concrete curb - 6"	4,670	LF	35.00	163,450
ADA curb ramp	4	EA	1,550.00	6,200
ADA sign	8	EA	750.00	6,000
G2030 Pedestrian Paving	18,090	SF	15.74	284,760
Concrete - sidewalk	18,090	SF	11.50	208,035
Concrete w/ integral color - courtyard	4,650	SF	16.50	76,725
G2040 Site Development	226,601	SF	17.10	3,875,100
Site structures				
Raised parking structure incl. SOG, allow	19,540	SF	190.00	3,712,600
Site walls, stairs & railings				
Seat wall - CIP conc w/ wood top	100	LF	275.00	27,500
Ramps and stairs, allow	1	LS	85,000.00	85,000
Site furnishing				
Café tables, bike racks, trash receptacles (etc.)	1	ALW	50,000.00	50,000
Park improvements - no work anticipated				*NIC*
G2050 Landscaping	226,601	SF	2.87	649,952
Trees - 3" Cal., deciduous	50	EA	650.00	32,500
Tree grates - not required				*NIC*
Planting area	49,776	SF		
Top soil - 24" depth	3,687	CY	45.00	165,920
Mulch - 3" depth	461	CY	40.00	18,436
Planting - 2 gallon, 24" O.C.	12,444	EA	25.00	311,100
Irrigation				
Planting area	49,776	SF	2.25	111,996
Devices and controls	1	LS	10,000.00	10,000

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Sitework) - Option 1

	Quantity	Unit	Rate	Total
G30 Site Mechanical Utilities	**226,601**	**SF**	**5.47**	**1,239,562**
G3010 Water Supply	226,601	SF	0.41	92,000
Water line	200	LF	55.00	11,000
Fire service line	200	LF	95.00	19,000
FD connection	1	EA	10,000.00	10,000
Vault structure	1	EA	30,000.00	30,000
Fire hydrants	2	EA	7,500.00	15,000
Connection to existing service	2	EA	3,500.00	7,000
G3020 Sanitary Sewer	226,601	SF	0.15	33,500
SS - 8" pipe, incl. trenching and backfill	250	LF	105.00	26,250
SS - cleanout	5	EA	750.00	3,750
Connection to existing service	1	EA	3,500.00	3,500
G3030 Storm Sewer	226,601	SF	4.92	1,114,062
SW - 8" pipe, incl. trenching and backfill	650	LF	85.00	55,250
Devices and controls - allow	1	EA	50,000.00	50,000
Detention vault, allow	837,760	GAL	1.20	1,005,312
Connection to existing service	1	EA	3,500.00	3,500
Stormwater vault - not required				*NIC*
G3060 Fuel Distribution	226,601	SF		
No work anticipated				*NIC*
G40 Site Electrical Utilities	**226,601**	**SF**	**1.33**	**300,600**
G4010 Electrical Distribution	226,601	SF	0.20	45,000
Transformer - by franchise utility				*NIC*
Power distribution - to building	1	LS	45,000.00	45,000
G4020 Site Lighting	226,601	SF	1.13	255,600
Pedestrian - light poles	15	EA	6,000.00	90,000
Parking - light poles	18	EA	9,200.00	165,600
G4090 Other Site Electrical Utilities	226,601	SF		
No work anticipated				*NIC*

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2 Summary

			%	$/SF	TOTAL
			Gross Area:	91,463 SF	
A10	Foundations		2%	18.31	1,674,825
A	Substructure		2%	18.31	1,674,825
B10	Superstructure		10%	80.75	7,385,647
B20	Exterior Enclosure		6%	51.97	4,752,907
B30	Roofing		5%	41.84	3,827,116
B	Shell		21%	174.56	15,965,669
C10	Interior Construction		3%	25.44	2,327,091
C20	Stairways		0%	3.68	337,000
C30	Interior Finishes		3%	24.94	2,280,642
C	Interiors		7%	54.06	4,944,733
D10	Conveying Systems		0%	2.47	226,000
D20	Plumbing Systems		2%	18.08	1,653,253
D30	Heating, Ventilation & Air Conditioning		10%	86.46	7,908,156
D40	Fire Protection		1%	6.29	575,376
D50	Electrical Lighting, Power & Communications		8%	62.24	5,692,683
D	Services		21%	175.54	16,055,468
E10	Equipment		1%	4.78	437,534
E20	Furnishings		0%	2.26	206,548
E	Equipment & Furnishings		1%	7.04	644,082
F10	Special Construction		5%	42.65	3,901,277
F20	Selective Demolition		0%	0.00	0
F	Special Construction & Demolition		5%	42.65	3,901,277
BUILDING ELEMENTAL COST BEFORE CONTINGENCIES			57%	472.17	43,186,053
	Design Contingency	15.00%	9%	70.83	6,477,908
	Construction Contingency	5.00%	3%	27.15	2,483,198
BUILDING ELEMENTAL COST INCLUDING CONTINGENCIES			69%	570.14	52,147,159
	General Conditions	7.00%	5%	39.91	3,650,301
	General Requirements	7.50%	6%	45.75	4,184,810
	Corporate Tax	0.57%	0%	3.74	341,899
	SDI	1.75%	1%	11.54	1,055,673
	Office Overhead & Profit	4.50%	4%	30.20	2,762,093
	Bonds and Insurance	1.50%	1%	10.52	962,129
	Permit				*By Owner*
BUILDING CONSTRUCTION COST BEFORE ESCALATION			86%	711.81	65,104,064
	Escalation to Start Date (May 2025)	15.83%	14%	112.70	10,308,143
RECOMMENDED BUDGET			100%	824.51	75,412,207

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2

	Quantity	Unit	Rate	Total
Controls				
Building Footprint	57,100	SF		
Level 1	57,100	SF		
Level 2	33,128	SF		
Roof Terrace - Unconditioned Space	1,235	SF		
Building ht. Total, Average	28	LF		
Exterior Enclosure Total	36,498	LF		
Cladding	23,724	LF		
Glazing	12,774	LF		
Roof, typ	57,100	SF		
Soffit	4,193	SF		
Total Building Area	**91,463**	**SF**		
A10 Foundations	**91,463**	**SF**	**18.31**	**1,674,825**
A1010 Standard Foundations	91,463	SF	6.76	618,000
Building excavation	5,627	CY	18.00	101,279
Haul and dispose	5,627	CY	20.00	112,533
Reinforced footings				
Continuous footing - 2' x 2'	172	CY	690.00	118,680
Spread footing - 4' x 4'	40	CY	690.00	27,468
Perimeter insulation	2,322	SF	4.00	9,288
Perimeter drainage and bedding	1,211	LF	32.00	38,752
Elevator pit - complete	2	EA	22,500.00	45,000
Anchors and connections, allow	1	LS	15,000.00	15,000
Temp shoring, allow	1	LS	150,000.00	150,000
A1030 Slab On Grade	91,463	SF	11.55	1,056,825
Slab on grade - 4" thk., reinforced	57,100	SF	13.10	748,010
Vapor barrier	57,100	SF	3.00	171,300
Miscellaneous concrete specialties	57,100	SF	1.15	65,665
Waterproofing	2,322	SF	12.50	29,025
Allowance for blockouts	57,100	SF	0.75	42,825
A20 Basement Construction	**91,463**	**SF**		
A2010 Basement Excavation	91,463	SF		
No work anticipated				*NIC*

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2

	Quantity	Unit	Rate	Total
B10 Superstructure	**91,463**	**SF**	**80.75**	**7,385,647**
B1010 Floor Construction	**91,463**	**SF**	**78.45**	**7,174,940**
Transfer beams	172	CY	1,040.00	178,880
Stem wall - 1' ht.	43	CY	910.00	39,130
Mass timber construction - columns and beams				
Wood timber package				
CLT panels, spline ends and side joints	91,463	SF	28.00	2,560,964
Glu-lam beams	3,555	LF	130.00	462,150
Glu-lam blocking	67	EA	554.00	37,216
Glu-lam columns	1,881	LF	124.00	233,237
Layout/installation	91,463	SF	18.50	1,692,066
Lifting system	1	LS	42,000.00	42,000
Hardware	1	LS	167,000.00	167,000
Shop drawings	1	LS	63,000.00	63,000
Transport	1	LS	155,000.00	155,000
Decking				
Mass plywood panels - see "Wood timber package"				*incl. above*
Acoustic mat	33,128	SF	6.21	205,725
2" gypcrete	33,128	SF	5.00	165,640
Firestopping	33,128	SF	0.75	24,846
Sealants	33,128	SF	0.55	18,220
Shear wall	8,295	SF	85.00	705,075
Shear wall - interior	4,362	SF	85.00	370,791
Channels and angels	1	LS	30,000.00	30,000
Structural steel				
Elevator hoist beams	1.00	TNs	16,500.00	16,500
Misc. steel angles and connections	1	LS	7,500.00	7,500
B1020 Roof Construction	**91,463**	**SF**	**2.30**	**210,707**
Mass timber construction - beams and decking				*incl. above*
Beams - glu-lam				*incl.*
CLT decking				*incl.*
Hardware				*incl.*
PV support system - not required				*NIC*
Soffit	4,193	SF	35.00	146,755
Strapping, blocking and connections, add	57,100	SF	1.12	63,952

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2

	Quantity	Unit	Rate	Total
B20 Exterior Enclosure	**91,463**	**SF**	**51.97**	**4,752,907**
B2010 Exterior Walls	91,463	SF	35.81	3,274,982
Wood stud framing	36,498	SF		
Framing	36,498	SF	19.10	697,112
Sheathing	23,724	SF	6.50	154,204
Batt insulation R-21	23,724	SF	6.20	147,087
Weather barrier	23,724	SF	7.20	170,811
Cladding				
Metal panel system	11,862	SF	65.00	771,020
Stained wood system	7,117	SF	75.00	533,783
Terracotta system	4,745	SF	88.00	417,537
Facias, bands and screens	3,483	SF	35.00	121,905
Caps, flashing and sealants, allow	91,463	SF	2.75	251,523
Louvers, allow	1	LS	10,000.00	10,000
B2020 Exterior Windows	91,463	SF	15.60	1,426,644
Curtainwall	3,525	SF	140.00	493,444
Storefront	7,783	SF	102.00	793,835
Clerestory	1,467	SF	95.00	139,365
B2030 Exterior Doors	91,463	SF	0.56	51,280
Storefront, double	4	EA	5,425.00	21,700
Storefront, single	6	EA	3,500.00	21,000
HM flush, single	3	EA	2,860.00	8,580
B30 Roofing	**91,463**	**SF**	**41.84**	**3,827,116**
B3010 Roof Coverings	91,463	SF	26.59	2,432,116
TPO membrane system	57,100	SF	18.55	1,059,205
Coverboard - 7" thk.	57,100	SF	6.80	388,280
Insulation - R-30	57,100	SF	8.00	456,800
Vapor barrier	57,100	SF	2.00	114,200
Fall protection, allow	1	LS	50,000.00	50,000
Caps, flashing and sealants	57,100	SF	3.50	199,850
Roof walking pads, allow	1,500	SF	28.50	42,750
Roof terrace	1,235	SF	38.00	46,930
Parapet	1,742	LF	42.55	74,101

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2

	Quantity	Unit	Rate	Total
B3020 Roof Openings	91,463	SF	15.25	1,395,000
Roof monitor, incl. skylight	6,480	SF	210.00	1,360,800
Skylights	200	SF	171.00	34,200
C10 Interior Construction	**91,463**	**SF**	**25.44**	**2,327,091**
C1010 Partitions	91,463	SF	25.44	2,327,091
Solid and glazed walls				
Wood stud framing - 2x4				
Framing	47,447	SF	13.50	640,540
Acoustical batt insulation	47,447	SF	4.50	213,513
GWB, 2x	94,895	SF	4.85	460,240
Shaft wall, metal stud - 4"	1,204	SF		
Framing, 2x	2,408	SF	20.40	49,123
Acoustical batt insulation	1,204	SF	4.50	5,418
GWB, 2x	2,408	SF	4.85	11,679
Operable partition	80	LF	1,000.00	80,000
Folding glass wall	50	LF	1,500.00	75,000
Interior of exterior walls	23,724	SF	8.50	201,651
Storefront, allow	1,000	SF	98.00	98,000
Doors and frames				
Storefront, double	4	EA	4,750.00	19,000
HM, glass panel - single	15	EA	2,885.00	43,275
HM, flush - single	24	EA	2,385.00	57,240
Fittings				
Window treatment - roller shades	6,387	SF	11.50	73,452
Wayfinding and signage	91,463	SF	0.66	60,000
Whiteboards and writable surfaces, allow	400	SF	36.50	14,600
Corner guards and kick plates	1	LS	10,000.00	10,000
Mirrors - restroom	7	EA	280.00	1,960
Restroom fitout	7	EA	1,500.00	10,500
Lockers, allow	40	EA	375.00	15,000
Benches, allow	10	EA	750.00	7,500
Guardrail, glazed	780	LF	230.00	179,400
C20 Stairways	**91,463**	**SF**	**3.68**	**337,000**
C2010 Stair Construction	91,463	SF	3.68	337,000
Feature stair	4	FLT	75,000.00	300,000
Egress stairs	2	FLT	18,500.00	37,000

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2

	Quantity	Unit	Rate	Total
C30 Interior Finishes	**91,463**	**SF**	**24.94**	**2,280,642**
C3010 Wall Finishes	91,463	SF	6.62	605,096
Paint	121,027	SF	2.10	254,156
Tile to 7' ht.	5,047	SF	20.00	100,940
Acoustic paneling, allow	1	LS	150,000.00	150,000
Misc. graphics and special finishes, allow	1	LS	100,000.00	100,000
C3020 Floor Finishes	91,463	SF	12.96	1,185,385
Walk-off mat	200	SF	15.00	3,000
Carpet tile	4,280	SF	6.50	27,820
Linoleum	8,496	SF	9.50	80,712
Polished concrete	16,285	SF	8.50	138,423
Sealed concrete	10,526	SF	3.90	41,051
Epoxy resinous flooring	2,368	SF	22.00	52,096
Tile	2,028	SF	20.00	40,560
Rubber sport flooring	8,225	SF	18.30	150,518
Sprung hardwood flooring	8,566	SF	31.60	270,686
Hardwood sport flooring	13,590	SF	28.00	380,520
C3030 Ceiling Finishes	91,463	SF	5.36	490,161
ACT	12,776	SF	8.50	108,596
ACT, washable	790	SF	13.50	10,665
Acoustic treatment, allow	1	LS	100,000.00	100,000
Open to structure, painted	61,740	SF	1.85	114,219
GWB, painted	14,922	SF	10.50	156,681
D10 Conveying Systems	**91,463**	**SF**	**2.47**	**226,000**
D1010 Elevators & Lifts	91,463	SF	2.47	226,000
4500 LB - elevator w/ SS finish system	4	ST	56,500.00	226,000
D20 Plumbing Systems	**91,463**	**SF**	**18.08**	**1,653,253**
D2010 Plumbing Fixtures	91,463	SF	3.50	320,121
Sanitary fixtures, allow	91,463	SF	3.50	320,121
Water closets				*incl.*
Lavatories				*incl.*
Mop sink				*incl.*
Lab sink				*incl.*
Kitchen sink, two compartment				*incl.*

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2

	Quantity	Unit	Rate	Total
Hose bib				*incl.*
Deck-mounted eye wash				*incl.*
Drinking fountain				*incl.*
Connections				*incl.*
D2020 Domestic Water Distribution	91,463	SF	7.20	658,534
Domestic water, allow	91,463	SF	7.20	658,534
Piping and drainage				*incl.*
Domestic water, 2" HW/CW				*incl.*
Insulation				*incl.*
Seismic bracing				*incl.*
Shut off valves and specialties				*incl.*
Hot water heaters				*incl.*
Expansion tanks				*incl.*
HW circulation pump				*incl.*
Mixing valves				*incl.*
Reduced pressure backflow preventer, allow				*incl.*
D2030 Sanitary Waste	91,463	SF	6.92	632,924
Sanitary waste, allow	91,463	SF	6.92	632,924
Sanitary and vent piping				*incl.*
Floor drains				*incl.*
Sanitary filtration				*incl.*
Ancillaries				*incl.*
D2040 Rain Water Drainage	91,463	SF	0.46	41,675
Gutters and downspouts	1,379	LF	25.00	34,475
Roof drains	6	EA	1,200.00	7,200
D30 Heating, Ventilation & Air Conditioning	**91,463**	**SF**	**86.46**	**7,908,156**
D3020 Heat Generating Systems	91,463	SF	44.37	4,058,295
VRF system w/ heat recovery, complete	91,723	SF	36.50	3,347,890
Energy recovery unit-integrated	2	EA	15,000.00	30,000
Piping and insulation, incl. VRF refrigerant piping	91,723	SF	7.20	660,406
Ancillaries	1	LS	20,000.00	20,000
D3040 Distribution Systems	91,463	SF	24.44	2,235,051
Ductwork including flex	100,609	LBs	13.50	1,358,226
Electric duct heaters	201	EA	1,350.00	271,645

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2

	Quantity	Unit	Rate	Total
Diffusers and grilles	610	EA	190.00	115,853
Exhaust - general	91,463	SF	5.35	489,327
D3090 Other HVAC Systems & Equipment	91,463	SF	17.66	1,614,810
DDC controls	91,463	SF	14.50	1,326,214
Dehumidification system.	91,463	SF	1.10	100,609
Seismic bracing	91,463	SF	1.70	155,487
Testing and balancing	160	HR	130.00	20,800
Commissioning assist	90	HR	130.00	11,700
D40 Fire Protection	**91,463**	**SF**	**6.29**	**575,376**
D4010 Sprinklers	91,463	SF	6.26	572,376
Fire sprinkler system, complete	91,463	SF	5.85	535,059
Dry system - soffit	4,193	SF	8.90	37,318
D4030 Fire Protection Specialties	91,463	SF	0.03	3,000
Fire extinguisher boxes	8	EA	375.00	3,000
CO2 alarm system - not required				*NIC*
D50 Electrical Lighting, Power & Communications	**91,463**	**SF**	**62.24**	**5,692,683**
D5010 Electrical Service & Distribution	91,463	SF	11.64	1,064,844
Main distribution board	1	LS	210,000.00	210,000
Distribution panels	1	LS	50,000.00	50,000
Transformers	1	LF	40,000.00	40,000
Secondary conduit and feeder - allow	91,463	SF	4.50	411,584
Grounding	1	LS	20,000.00	20,000
Metering	91,463	SF	0.55	50,305
Receptacles, typ.	457	EA	575.00	262,956
PV system - not required				*NIC*
Ancillaries and equipment	1	LS	20,000.00	20,000
D5020 Lighting & Branch Wiring	91,463	SF	24.20	2,213,612
Lighting controls	91,463	SF	4.50	411,584
Branch wiring and conduit	91,463	SF	5.00	457,315
LED lighting	91,463	SF	14.50	1,326,214
Exterior lighting on building	1	LS	18,500.00	18,500

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2

	Quantity	Unit	Rate	Total
D5030 Communications & Security	91,463	SF	23.21	2,122,569
Phone and data including wiring and conduit	91,463	SF	4.30	393,291
Wireless access points	6	EA	1,650.00	9,900
Fire alarm system	91,463	SF	3.00	274,389
DAS	1	LS	50,000.00	50,000
PA system	91,463	SF	1.21	110,670
A/V and sound system - infrastructure only	91,463	SF	3.85	352,133
Projection screen, recessed	4	EA	4,850.00	19,400
Speakers	8	EA	2,600.00	20,800
Additional equipment, allow	1	LS	500,000.00	500,000
CCTV - infrastructure only	91,463	SF	3.75	342,986
Access control	6	EA	5,500.00	33,000
ADA button	4	EA	4,000.00	16,000
D5040 Electrical Specialty	91,463	SF	3.19	291,658
Electrical to mechanical systems - equipment connections	91,463	SF	2.50	228,658
PV systems, allow	15	KW	4,200.00	63,000
E10 Equipment	**91,463**	**SF**	**4.78**	**437,534**
E1010 Commercial Equipment	91,463	SF	1.32	121,000
Type 1 hood - cultural kitchen	1	EA	121,000.00	121,000
Refrigerator/freezer				*by Owner*
Microwave				*by Owner*
Coffer maker				*by Owner*
E1090 Other Equipment	91,463	SF	3.46	316,534
Basketball backboards - retractable	4	EA	8,500.00	34,000
Court divider curtain	1	EA	17,300.00	17,300
Wall padding	3,283	SF	8.60	28,234
Scoreboard	2	EA	18,500.00	37,000
Food service equipment, allow	1	LS	200,000.00	200,000
E20 Furnishings	**91,463**	**SF**	**2.26**	**206,548**
E2010 Fixed Furnishings	91,463	SF	2.26	206,548
Mirror wall - 8' ht.	1,236	SF	36.15	44,681
Ballet barre	155	LF	69.20	10,691
Reception desk, allow	1	LS	12,500.00	12,500
Chair rail, allow	200	LF	85.00	17,000
Uppers, PLAM (allow)	100	LF	380.00	38,000

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Building) - Option 2

	Quantity	Unit	Rate	Total
Counters incl. cabinets, PLAM (allow)	125	LF	425.00	53,125
Counters incl. cabinets, solid surface (allow)	50	LF	475.00	23,750
Cubbies, allow	20	LF	340.00	6,800
E2020 Movable Furnishings	91,463	SF		
FF&E - by Owner				*FF&E*
F10 Special Construction	**91,463**	**SF**	**42.65**	**3,901,277**
F1010 Special Structures	91,463	SF	42.65	3,901,277
New pool construction, allow	9,464	SF	390.00	3,690,960
Pool equipment, allow	1	LS	75,000.00	75,000
Pool mech/plumbing				*incl. above*
Natatorium decking	7,435	SF	18.20	135,317

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Sitework) - Option 2 Summary

			%	$/SF	TOTAL
			Gross Area:	226,601 SF	
G10	Site Preparation		14%	4.85	1,099,359
G20	Site Improvements		23%	7.74	1,752,832
G30	Site Mechanical Utilities		16%	5.47	1,239,562
G40	Site Electrical Utilities		4%	1.33	300,600
G	Building Sitework		57%	19.38	4,392,353
SITE ELEMENTAL COST BEFORE CONTINGENCIES			57%	19.38	4,392,353
	Design Contingency	15.00%	9%	0.00	658,853
	Construction Contingency	5.00%	0%	1.11	252,560
SITE ELEMENTAL COST INCLUDING CONTINGENCIES			69%	23.41	5,303,766
	General Conditions	7.00%	5%	1.64	371,264
	General Requirements	7.50%	6%	1.88	425,627
	Corporate Tax (OR)	0.57%	0%	0.15	34,774
	Subcontractor Default Insurance (OR)	1.75%	0%	0.47	107,370
	Office Overhead & Profit	4.50%	4%	1.24	280,926
	Bonds and Insurance	1.50%	1%	0.43	97,856
	Permit				*By Owner*
SITE CONSTRUCTION COST BEFORE ESCALATION			86%	29.22	6,621,582
	Escalation to Start Date (May 2025)	15.83%	14%	4.63	1,048,417
RECOMMENDED BUDGET			100%	33.85	7,670,000

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Sitework) - Option 2

	Quantity	Unit	Rate	Total
Control Quantities				
Program Areas	226,601	SF		
Building footprint	*57,100*	*SF*		
Roadwork				
No work anticipated				
Parking Lot	99,565	SF		
Asphalt	*99,565*	*SF*		
Pedestrian Paving	20,458	SF		
Concrete - sidewalk	*15,853*	*SF*		
Concrete w/ integral color - courtyard	*4,605*	*SF*		
Landscape	49,478	SF		
Planting area	*49,478*	*SF*		
G10 Site Preparation	**226,601**	**SF**	**4.85**	**1,099,359**
G1010 Site Clearing	226,601	SF	0.79	178,615
Construction entrance	1	EA	5,000.00	5,000
Construction fence	2,170	LF	13.50	29,295
Erosion control w/ catch basin filters and monitoring	226,601	SF	0.20	45,320
Tree protection, allow	1	LS	15,000.00	15,000
Utility protection, allow	1	LS	10,000.00	10,000
Temp facilities	16	MO	1,500.00	24,000
Dewatering	1	LS	15,000.00	15,000
Construction survey, incl. layout	1	LS	35,000.00	35,000
G1020 Site Demolition and Relocations	226,601	SF	2.07	468,867
Clear and grub - existing vegetation	33,990	SF	0.75	25,493
Demo - hardscape	192,611	SF	2.25	433,374
Demo - misc. site obstructions, allow	1	LS	10,000.00	10,000
G1030 Site Earthwork	226,601	SF	1.99	451,877
Mass excavation - building, see 'Building"				*incl.*
Mass excavation	6,278	CY	18.00	113,001
Haul and dispose	6,278	CY	20.00	125,556
Grading - incl. compaction	226,601	SF	0.50	113,301
Base aggregates				
Building footprint - 12" depth	2,115	CY	45.00	*incl.*
Vehicular paving - 6" depth	1,844	CY	45.00	82,971
Pedestrian paving - 6" depth	379	CY	45.00	17,048

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Sitework) - Option 2

	Quantity	Unit	Rate	Total
G1040 Hazardous Waste Remediation	226,601	SF		
No work anticipated				*NIC*
G20 Site Improvements	**226,601**	**SF**	**7.74**	**1,752,832**
G2010 Roadways	226,601	SF		
No work anticipated				*NIC*
G2020 Parking Lots	226,601	SF	3.03	685,725
Asphalt	99,565	SF	4.75	472,934
Striping	99,565	SF	0.25	24,891
Concrete curb - 6"	5,020	LF	35.00	175,700
ADA curb ramp	4	EA	1,550.00	6,200
ADA sign	8	EA	750.00	6,000
G2030 Pedestrian Paving	15,853	SF	16.29	258,292
Concrete - sidewalk	15,853	SF	11.50	182,310
Concrete w/ integral color - courtyard	4,605	SF	16.50	75,983
G2040 Site Development	226,601	SF	0.72	162,500
Site walls, stairs & railings				
Seat wall - CIP conc w/ wood top	100	LF	275.00	27,500
Ramps and stairs, allow	1	LS	85,000.00	85,000
Site furnishing				
Café tables, bike racks, trash receptacles (etc.)	1	ALW	50,000.00	50,000
Park improvements - no work anticipated				*NIC*
G2050 Landscaping	226,601	SF	2.85	646,315
Trees - 3" Cal., deciduous	50	EA	650.00	32,500
Tree grates - not required				*NIC*
Planting area	49,478	SF		
Top soil - 24" depth	3,665	CY	45.00	164,927
Mulch - 3" depth	458	CY	40.00	18,325
Planting - 2 gallon, 24" O.C.	12,370	EA	25.00	309,238
Irrigation				
Planting area	49,478	SF	2.25	111,326
Devices and controls	1	LS	10,000.00	10,000

City of Kirkland, Washington
Recreation & Aquatics Centers

Houghton (Sitework) - Option 2

	Quantity	Unit	Rate	Total
G30 Site Mechanical Utilities	**226,601**	**SF**	**5.47**	**1,239,562**
G3010 Water Supply	226,601	SF	0.41	92,000
Water line	200	LF	55.00	11,000
Fire service line	200	LF	95.00	19,000
FD connection	1	EA	10,000.00	10,000
Vault structure	1	EA	30,000.00	30,000
Fire hydrants	2	EA	7,500.00	15,000
Connection to existing service	2	EA	3,500.00	7,000
G3020 Sanitary Sewer	226,601	SF	0.15	33,500
SS - 8" pipe, incl. trenching and backfill	250	LF	105.00	26,250
SS - cleanout	5	EA	750.00	3,750
Connection to existing service	1	EA	3,500.00	3,500
G3030 Storm Sewer	226,601	SF	4.92	1,114,062
SW - 8" pipe, incl. trenching and backfill	650	LF	85.00	55,250
Devices and controls - allow	1	EA	50,000.00	50,000
Detention vault, allow	837,760	GAL	1.20	1,005,312
Connection to existing service	1	EA	3,500.00	3,500
Stormwater vault - not required				*NIC*
G3060 Fuel Distribution	226,601	SF		
No work anticipated				*NIC*
G40 Site Electrical Utilities	**226,601**	**SF**	**1.33**	**300,600**
G4010 Electrical Distribution	226,601	SF	0.20	45,000
Transformer - by franchise utility				*NIC*
Power distribution - to building	1	LS	45,000.00	45,000
G4020 Site Lighting	226,601	SF	1.13	255,600
Pedestrian light poles	15	EA	6,000.00	90,000
Parking - light poles	18	EA	9,200.00	165,600
G4090 Other Site Electrical Utilities	226,601	SF		
No work anticipated				*NIC*

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1 Summary

			%	$/SF	TOTAL
			Gross Area:	78,700 SF	
A10	Foundations		2%	17.59	1,384,008
A	Substructure		2%	17.59	1,384,008
B10	Superstructure		11%	85.04	6,692,972
B20	Exterior Enclosure		6%	48.70	3,832,633
B30	Roofing		4%	30.09	2,368,180
B	Shell		21%	163.83	12,893,785
C10	Interior Construction		3%	23.74	1,868,380
C20	Stairways		0%	2.86	225,000
C30	Interior Finishes		3%	26.03	2,048,169
C	Interiors		7%	52.62	4,141,549
D10	Conveying Systems		0%	2.87	226,000
D20	Plumbing Systems		2%	18.06	1,421,119
D30	Heating, Ventilation & Air Conditioning		11%	86.63	6,817,728
D40	Fire Protection		1%	7.58	596,308
D50	Electrical Lighting, Power & Communications		8%	65.11	5,124,205
D	Services		23%	180.25	14,185,359
E10	Equipment		1%	5.54	436,390
E20	Furnishings		0%	2.19	172,679
E	Equipment & Furnishings		1%	7.74	609,069
F10	Special Construction		3%	20.30	1,597,712
F20	Selective Demolition		0%	0.00	0
F	Special Construction & Demolition		3%	20.30	1,597,712
BUILDING ELEMENTAL COST BEFORE CONTINGENCIES			57%	442.33	34,811,482
	Design Contingency	15.00%	9%	66.35	5,221,722
	Construction Contingency	5.00%	3%	25.43	2,001,660
BUILDING ELEMENTAL COST INCLUDING CONTINGENCIES			69%	534.12	42,034,865
	General Conditions	7.00%	5%	37.39	2,942,441
	General Requirements	7.50%	6%	42.86	3,373,298
	Corporate Tax	0.57%	0%	3.50	275,598
	SDI	1.75%	1%	10.81	850,959
	Office Overhead & Profit	4.50%	4%	28.29	2,226,472
	Bonds and Insurance	1.50%	1%	9.85	775,554
	Permit				*By Owner*
BUILDING CONSTRUCTION COST BEFORE ESCALATION			86%	666.83	52,479,187
	Escalation to Start Date (May 2025)	15.83%	14%	105.58	8,309,205
RECOMMENDED BUDGET			100%	772.41	60,788,391

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1

	Quantity	Unit	Rate	Total
Controls				
Building Footprint	39,610	SF		
Level 1	39,610	SF		
Level 2	37,985	SF		
Roof Terrace - Unconditioned Space	1,105	SF		
Building ht. Total, Average	28	LF		
Exterior Enclosure Total	29,337	LF		
Cladding	19,069	LF		
Glazing	10,268	LF		
Roof, typ	39,610	SF		
Soffit	14,934	SF		
Total Building Area	**78,700**	**SF**		
A10 Foundations	**78,700**	**SF**	**17.59**	**1,384,008**
A1010 Standard Foundations	78,700	SF	8.25	649,253
Building excavation	2,902	CY	18.00	52,235
Haul and dispose	2,902	CY	20.00	58,039
Reinforced footings				
Continuous footing - 2' x 2'	130	CY	690.00	89,700
Spread footing - 4' x 4'	28	CY	690.00	19,054
Perimeter insulation	1,742	SF	4.00	6,968
Perimeter drainage and bedding	921	LF	32.00	29,472
Elevator pit - complete	2	EA	22,500.00	45,000
Anchors and connections, allow	1	LS	15,000.00	15,000
Rammed aggregate piers	2,641	VLF	98.00	258,785
Temp shoring, allow	1	LS	75,000.00	75,000
A1030 Slab On Grade	78,700	SF	9.34	734,755
Slab on grade - 4" thk., reinforced	39,610	SF	13.10	518,891
Vapor barrier	39,610	SF	3.00	118,830
Miscellaneous concrete specialties	39,610	SF	1.15	45,552
Waterproofing	1,742	SF	12.50	21,775
Allowance for blockouts	39,610	SF	0.75	29,708
A20 Basement Construction	**78,700**	**SF**		
A2010 Basement Excavation	78,700	SF		
No work anticipated				*NIC*

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1

	Quantity	Unit	Rate	Total
B10 Superstructure	**78,700**	**SF**	**85.04**	**6,692,972**
B1010 Floor Construction	**78,700**	**SF**	**77.84**	**6,125,918**
Transfer beams	129	CY	1,040.00	134,199
Stem wall - 1' ht.	32	CY	910.00	29,356
Mass timber construction - columns and beams				
Wood timber package				
CLT panels, spline ends and side joints	78,700	SF	28.00	2,203,600
Glu-lam beams	2,858	LF	130.00	371,475
Glu-lam blocking	47	EA	554.00	25,816
Glu-lam columns	1,305	LF	124.00	161,795
Layout/installation	78,700	SF	18.50	1,455,950
Lifting system	1	LS	36,000.00	36,000
Hardware	1	LS	144,000.00	144,000
Shop drawings	1	LS	54,000.00	54,000
Transport	1	LS	133,000.00	133,000
Decking				
Mass plywood panels - see "Wood timber package"				*incl. above*
Acoustic mat	37,985	SF	6.21	235,887
2" gypcrete	37,985	SF	5.00	189,925
Firestopping	37,985	SF	0.75	28,489
Sealants	37,985	SF	0.55	20,892
Shear wall	6,668	SF	85.00	566,738
Shear wall - interior	3,304	SF	85.00	280,798
Channels and angels	1	LS	30,000.00	30,000
Structural steel				
Elevator hoist beams	1.00	TNs	16,500.00	16,500
Misc. steel angles and connections	1	LS	7,500.00	7,500
B1020 Roof Construction	**78,700**	**SF**	**7.21**	**567,053**
Mass timber construction - beams and decking				*incl. above*
Beams - glu-lam				*incl.*
CLT decking				*incl.*
Hardware				*incl.*
PV support system - not required				*NIC*
Soffit	14,934	SF	35.00	522,690
Strapping, blocking and connections, add	39,610	SF	1.12	44,363

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1

	Quantity	Unit	Rate	Total
B20 Exterior Enclosure	**78,700**	**SF**	**48.70**	**3,832,633**
B2010 Exterior Walls	78,700	SF	33.57	2,642,104
Wood stud framing	29,337	SF		
Framing	29,337	SF	19.10	560,337
Sheathing	19,069	SF	6.50	123,949
Batt insulation R-21	19,069	SF	6.20	118,228
Weather barrier	19,069	SF	7.20	137,297
Cladding				
Metal panel system	9,535	SF	65.00	619,744
Stained wood system	5,721	SF	75.00	429,054
Terracotta system	3,814	SF	88.00	335,615
Facias, bands and screens	2,613	SF	35.00	91,455
Caps, flashing and sealants, allow	78,700	SF	2.75	216,425
Louvers, allow	1	LS	10,000.00	10,000
B2020 Exterior Windows	78,700	SF	14.48	1,139,250
Curtainwall	2,689	SF	140.00	376,481
Storefront	6,112	SF	102.00	623,404
Clerestory	1,467	SF	95.00	139,365
B2030 Exterior Doors	78,700	SF	0.65	51,280
Storefront, double	4	EA	5,425.00	21,700
Storefront, single	6	EA	3,500.00	21,000
HM flush, single	3	EA	2,860.00	8,580
B30 Roofing	**78,700**	**SF**	**30.09**	**2,368,180**
B3010 Roof Coverings	78,700	SF	21.97	1,729,180
TPO membrane system	39,610	SF	18.55	734,766
Coverboard - 7" thk.	39,610	SF	6.80	269,348
Insulation - R-30	39,610	SF	8.00	316,880
Vapor barrier	39,610	SF	2.00	79,220
Fall protection, allow	1	LS	50,000.00	50,000
Caps, flashing and sealants	39,610	SF	3.50	138,635
Roof walking pads, allow	1,500	SF	28.50	42,750
Roof terrace	1,105	SF	38.00	41,990
Parapet	1,307	LF	42.55	55,592

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1

	Quantity	Unit	Rate	Total
B3020 Roof Openings	78,700	SF	8.12	639,000
Roof monitor, incl. skylight	2,880	SF	210.00	604,800
Skylights	200	SF	171.00	34,200
C10 Interior Construction	**78,700**	**SF**	**23.74**	**1,868,380**
C1010 Partitions	78,700	SF	23.74	1,868,380
Solid and glazed walls				
Wood stud framing - 2x4				
Framing	38,138	SF	13.50	514,864
Acoustical batt insulation	38,138	SF	4.50	171,621
GWB, 2x	76,276	SF	4.85	369,940
Shaft wall, metal stud - 4"	1,204	SF		
Framing, 2x	2,408	SF	20.40	49,123
Acoustical batt insulation	1,204	SF	4.50	5,418
GWB, 2x	2,408	SF	4.85	11,679
Operable partition	80	LF	1,000.00	80,000
Folding glass wall	50	LF	1,500.00	75,000
Interior of exterior walls	19,069	SF	8.50	162,087
Storefront, allow	500	SF	98.00	49,000
Doors and frames				
Storefront, double	4	EA	4,750.00	19,000
HM, glass panel - single	12	EA	2,885.00	34,620
HM, flush - single	18	EA	2,385.00	42,930
Fittings				
Window treatment - roller shades	5,134	SF	11.50	59,041
Wayfinding and signage	78,700	SF	0.66	51,627
Whiteboards and writable surfaces, allow	400	SF	36.50	14,600
Corner guards and kick plates	1	LS	10,000.00	10,000
Mirrors - restroom	3	EA	280.00	840
Restroom fitout	3	EA	1,500.00	4,500
Lockers, allow	30	EA	375.00	11,250
Benches, allow	10	EA	750.00	7,500
Guardrail, glazed	538	LF	230.00	123,740
C20 Stairways	**78,700**	**SF**	**2.86**	**225,000**
C2010 Stair Construction	78,700	SF	2.86	225,000
Feature stair	3	FLT	75,000.00	225,000

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1

	Quantity	Unit	Rate	Total
C30 Interior Finishes	**78,700**	**SF**	**26.03**	**2,048,169**
C3010 Wall Finishes	78,700	SF	6.59	518,562
Paint	97,753	SF	2.10	205,282
Tile restroom walls to 7' ht.	3,164	SF	20.00	63,280
Acoustic paneling, allow	1	LS	150,000.00	150,000
Misc. graphics and special finishes, allow	1	LS	100,000.00	100,000
C3020 Floor Finishes	78,700	SF	13.43	1,056,786
Walk-off mat	200	SF	15.00	3,000
Carpet tile	12,349	SF	6.50	80,269
Linoleum	6,644	SF	9.50	63,118
Polished concrete	16,094	SF	8.50	136,799
Sealed concrete	7,018	SF	3.90	27,370
Epoxy resinous flooring	3,220	SF	22.00	70,840
Tile	700	SF	20.00	14,000
Rubber sport flooring	4,380	SF	18.30	80,154
Sprung hardwood flooring	2,959	SF	31.60	93,504
Hardwood sport flooring	17,419	SF	28.00	487,732
C3030 Ceiling Finishes	78,700	SF	6.01	472,821
ACT	18,993	SF	8.50	161,441
ACT, washable	717	SF	13.50	9,680
Acoustic treatment, allow	1	LS	100,000.00	100,000
Open to structure, painted	46,947	SF	1.85	86,852
GWB, painted	10,938	SF	10.50	114,849
D10 Conveying Systems	**78,700**	**SF**	**2.87**	**226,000**
D1010 Elevators & Lifts	78,700	SF	2.87	226,000
4500 LB - elevator w/ SS finish system	4	ST	56,500.00	226,000
D20 Plumbing Systems	**78,700**	**SF**	**18.06**	**1,421,119**
D2010 Plumbing Fixtures	78,700	SF	3.50	275,450
Sanitary fixtures, allow	78,700	SF	3.50	275,450
Water closets				*incl.*
Lavatories				*incl.*
Mop sink				*incl.*
Lab sink				*incl.*
Kitchen sink, two compartment				*incl.*

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1

	Quantity	Unit	Rate	Total
Hose bib				*incl.*
Deck-mounted eye wash				*incl.*
Drinking fountain				*incl.*
Connections				*incl.*
D2020 Domestic Water Distribution	**78,700**	**SF**	**7.20**	**566,640**
Domestic water, allow	78,700	SF	7.20	566,640
Piping and drainage				*incl.*
Domestic water, 2" HW/CW				*incl.*
Insulation				*incl.*
Seismic bracing				*incl.*
Shut off valves and specialties				*incl.*
Hot water heaters				*incl.*
Expansion tanks				*incl.*
HW circulation pump				*incl.*
Mixing valves				*incl.*
Reduced pressure backflow preventer, allow				*incl.*
D2030 Sanitary Waste	**78,700**	**SF**	**6.92**	**544,604**
Sanitary waste, allow	78,700	SF	6.92	544,604
Sanitary and vent piping				*incl.*
Floor drains				*incl.*
Sanitary filtration				*incl.*
Ancillaries				*incl.*
D2040 Rain Water Drainage	**78,700**	**SF**	**0.44**	**34,425**
Gutters and downspouts	1,089	LF	25.00	27,225
Roof drains	6	EA	1,200.00	7,200
D30 Heating, Ventilation & Air Conditioning	**78,700**	**SF**	**86.63**	**6,817,728**
D3020 Heat Generating Systems	**78,700**	**SF**	**44.48**	**3,500,552**
VRF system w/ heat recovery, complete	78,960	SF	36.50	2,882,040
Energy recovery unit-integrated	2	EA	15,000.00	30,000
Piping and insulation, incl. VRF refrigerant piping	78,960	SF	7.20	568,512
Ancillaries	1	LS	20,000.00	20,000
D3040 Distribution Systems	**78,700**	**SF**	**24.44**	**1,923,166**
Ductwork including flex	86,570	LBs	13.50	1,168,695
Electric duct heaters	173	EA	1,350.00	233,739

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1

	Quantity	Unit	Rate	Total
Diffusers and grilles	525	EA	190.00	99,687
Exhaust - general	78,700	SF	5.35	421,045
D3090 Other HVAC Systems & Equipment	78,700	SF	17.71	1,394,010
DDC controls	78,700	SF	14.50	1,141,150
Dehumidification system.	78,700	SF	1.10	86,570
Seismic bracing	78,700	SF	1.70	133,790
Testing and balancing	160	HR	130.00	20,800
Commissioning assist	90	HR	130.00	11,700
D40 Fire Protection	**78,700**	**SF**	**7.58**	**596,308**
D4010 Sprinklers	78,700	SF	7.54	593,308
Fire sprinkler system, complete	78,700	SF	5.85	460,395
Dry system - soffit	14,934	SF	8.90	132,913
D4030 Fire Protection Specialties	78,700	SF	0.04	3,000
Fire extinguisher boxes	8	EA	375.00	3,000
CO2 alarm system - not required				*NIC*
D50 Electrical Lighting, Power & Communications	**78,700**	**SF**	**65.11**	**5,124,205**
D5010 Electrical Service & Distribution	78,700	SF	13.13	1,033,698
Main distribution board	1	LS	250,000.00	250,000
Distribution panels	1	LS	60,000.00	60,000
Transformers	1	LF	50,000.00	50,000
Secondary conduit and feeder - allow	78,700	SF	4.50	354,150
Grounding	1	LS	20,000.00	20,000
Metering	78,700	SF	0.55	43,285
Receptacles, typ.	394	EA	575.00	226,263
PV system - not required				*NIC*
Ancillaries and equipment	1	LS	30,000.00	30,000
D5020 Lighting & Branch Wiring	78,700	SF	24.32	1,913,800
Lighting controls	78,700	SF	4.50	354,150
Branch wiring and conduit	78,700	SF	5.00	393,500
LED lighting	78,700	SF	14.50	1,141,150
Exterior lighting on building	1	LS	25,000.00	25,000

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1

	Quantity	Unit	Rate	Total
D5030 Communications & Security	78,700	SF	24.36	1,916,957
Phone and data including wiring and conduit	78,700	SF	4.30	338,410
Wireless access points	6	EA	1,650.00	9,900
Fire alarm system	78,700	SF	3.00	236,100
DAS	1	LS	50,000.00	50,000
PA system	78,700	SF	1.21	95,227
A/V and sound system - infrastructure only	78,700	SF	3.85	302,995
Projection screen, recessed	4	EA	4,850.00	19,400
Speakers	8	EA	2,600.00	20,800
Additional equipment, allow	1	LS	500,000.00	500,000
CCTV - infrastructure only	78,700	SF	3.75	295,125
Access control	6	EA	5,500.00	33,000
ADA button	4	EA	4,000.00	16,000
D5040 Electrical Specialty	78,700	SF	3.30	259,750
Electrical to mechanical systems - equipment connections	78,700	SF	2.50	196,750
PV systems, allow	15	KW	4,200.00	63,000
E10 Equipment	**78,700**	**SF**	**5.54**	**436,390**
E1010 Commercial Equipment	78,700	SF	1.54	121,000
Type 1 hood - cultural kitchen	1	EA	121,000.00	121,000
Refrigerator/freezer				*by Owner*
Microwave				*by Owner*
Coffer maker				*by Owner*
E1090 Other Equipment	78,700	SF	4.01	315,390
Basketball backboards - retractable	4	EA	8,500.00	34,000
Court divider curtain	1	EA	17,300.00	17,300
Wall padding	3,150	SF	8.60	27,090
Scoreboard	2	EA	18,500.00	37,000
Food service equipment, allow	1	LS	200,000.00	200,000
E20 Furnishings	**78,700**	**SF**	**2.19**	**172,679**
E2010 Fixed Furnishings	78,700	SF	2.19	172,679
Mirror wall - 8' ht.	480	SF	36.15	17,352
Ballet barre	60	LF	69.20	4,152
Reception desk, allow	1	LS	12,500.00	12,500
Chair rail, allow	200	LF	85.00	17,000
Uppers, PLAM (allow)	100	LF	380.00	38,000

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 1

	Quantity	Unit	Rate	Total
Counters incl. cabinets, PLAM (allow)	125	LF	425.00	53,125
Counters incl. cabinets, solid surface (allow)	50	LF	475.00	23,750
Cubbies, allow	20	LF	340.00	6,800
E2020 Movable Furnishings	78,700	SF		
FF&E - by Owner				*FF&E*

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Sitework) - Option 1 Summary

			%	$/SF	TOTAL
			Gross Area:	187,854 SF	
G10	Site Preparation		7%	7.80	1,465,934
G20	Site Improvements		47%	55.91	10,502,032
G30	Site Mechanical Utilities		3%	3.97	746,662
G40	Site Electrical Utilities		1%	0.92	173,000
G	Building Sitework		57%	68.60	12,887,628
SITE ELEMENTAL COST BEFORE CONTINGENCIES			57%	68.60	12,887,628
	Design Contingency	15.00%	9%	0.00	1,933,144
	Construction Contingency	5.00%	0%	3.94	741,039
SITE ELEMENTAL COST INCLUDING CONTINGENCIES			69%	82.84	15,561,811
	General Conditions	7.00%	5%	5.80	1,089,327
	General Requirements	7.50%	6%	6.65	1,248,835
	Corporate Tax (OR)	0.57%	0%	0.54	102,030
	Subcontractor Default Insurance (OR)	1.75%	0%	1.68	315,035
	Office Overhead & Profit	4.50%	4%	4.39	824,267
	Bonds and Insurance	1.50%	1%	1.53	287,120
	Permit				*By Owner*
SITE CONSTRUCTION COST BEFORE ESCALATION			86%	103.42	19,428,424
	Escalation to Start Date (May 2025)	15.83%	14%	16.38	3,076,167
RECOMMENDED BUDGET			100%	119.80	22,504,592

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Sitework) - Option 1

	Quantity	Unit	Rate	Total
Control Quantities				
Program Areas	187,854	SF		
Building footprint	*39,610*	*SF*		
Roadwork				
No work anticipated				
Site Development	44,165	SF		
Raised parking structure	*44,165*	*SF*		
Pedestrian Paving	13,784	SF		
Concrete - sidewalk	*12,694*	*SF*		
Concrete w/ integral color - courtyard	*1,090*	*SF*		
Landscape	90,295	SF		
Planting area	*90,295*	*SF*		
G10 Site Preparation	**187,854**	**SF**	**7.80**	**1,465,934**
G1010 Site Clearing	**187,854**	**SF**	**0.81**	**153,074**
Construction entrance	1	EA	5,000.00	5,000
Construction fence	1,778	LF	13.50	24,003
Erosion control w/ catch basin filters and monitoring	187,854	SF	0.20	37,571
Tree protection, allow	1	LS	12,500.00	12,500
Utility protection, allow	1	LS	7,500.00	7,500
Temp facilities	16	MO	1,500.00	24,000
Dewatering	1	LS	15,000.00	15,000
Construction survey, incl. layout	1	LS	27,500.00	27,500
G1020 Site Demolition and Relocations	**187,854**	**SF**	**1.13**	**212,247**
Clear and grub - existing vegetation	150,283	SF	0.75	112,712
Demo - hardscape	37,571	SF	2.25	84,534
Demo - misc. site obstructions, allow	1	LS	15,000.00	15,000
G1030 Site Earthwork	**187,854**	**SF**	**5.86**	**1,100,614**
Mass excavation - building, see 'Building"				*incl.*
Mass excavation	23,484	CY	18.00	422,706
Haul and dispose	23,484	CY	20.00	469,673
Grading - incl. compaction	187,854	SF	0.50	93,927
Base aggregates				
Building footprint - 12" depth	1,467	CY	45.00	66,017
Vehicular paving - 6" depth	818	CY	45.00	36,804
Pedestrian paving - 6" depth	255	CY	45.00	11,487

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Sitework) - Option 1

	Quantity	Unit	Rate	Total
G1040 Hazardous Waste Remediation	187,854	SF		
No work anticipated				*NIC*
G20 Site Improvements	**187,854**	**SF**	**55.91**	**10,502,032**
G2010 Roadways	187,854	SF		
No work anticipated				*NIC*
G2020 Parking Lots	187,854	SF	0.40	75,513
Asphalt - See "Raised parking structure incl. SOG, allow"				*incl. below*
Striping	88,330	SF	0.25	22,083
Concrete curb - 6"	1,178	LF	35.00	41,230
ADA curb ramp	4	EA	1,550.00	6,200
ADA sign	8	EA	750.00	6,000
G2030 Pedestrian Paving	12,694	SF	12.92	163,966
Concrete - sidewalk	12,694	SF	11.50	145,981
Concrete w/ integral color - courtyard	1,090	SF	16.50	17,985
G2040 Site Development	187,854	SF	48.57	9,124,620
Site structures				
Raised parking structure incl. SOG, allow	44,165	SF	190.00	8,391,350
Retaining wall incl. waterproofing, 5-7'	2,640	SF	75.50	199,320
Retaining wall incl. waterproofing, 10'	4,400	SF	75.50	332,200
Site walls, stairs & railings				
Seat wall - CIP conc w/ wood top	200	LF	275.00	55,000
Stairs	750	SF	55.00	41,250
Rails	300	LF	185.00	55,500
Site furnishing				
Café tables, bike racks, trash receptacles (etc.)	1	ALW	50,000.00	50,000
Park improvements - no work anticipated				*NIC*
G2050 Landscaping	187,854	SF	6.06	1,137,933
Trees - 3" cal., deciduous	40	EA	650.00	26,000
Tree grates - not required				*NIC*
Planting area	90,295	SF		
Top soil - 24" depth	6,689	CY	45.00	300,983
Mulch - 3" depth	836	CY	40.00	33,443
Planting - 2 gallon, 24" O.C.	22,574	EA	25.00	564,344
Irrigation				
Planting area	90,295	SF	2.25	203,164

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Sitework) - Option 1

	Quantity	Unit	Rate	Total
Devices and controls	1	LS	10,000.00	10,000
G30 Site Mechanical Utilities	**187,854**	**SF**	**3.97**	**746,662**
G3010 Water Supply	187,854	SF	0.47	89,000
Water line	180	LF	55.00	9,900
Fire service line	180	LF	95.00	17,100
FD connection	1	EA	10,000.00	10,000
Vault structure	1	EA	30,000.00	30,000
Fire hydrants	2	EA	7,500.00	15,000
Connection to existing service	2	EA	3,500.00	7,000
G3020 Sanitary Sewer	187,854	SF	0.16	30,350
SS - 8" pipe, incl. trenching and backfill	220	LF	105.00	23,100
SS - cleanout	5	EA	750.00	3,750
Connection to existing service	1	EA	3,500.00	3,500
G3030 Storm Sewer	187,854	SF	3.34	627,312
SW - 8" pipe, incl. trenching and backfill	380	LF	85.00	32,300
Devices and controls - allow	1	EA	35,000.00	35,000
Detention vault, allow	463,760	GAL	1.20	556,512
Connection to existing service	1	EA	3,500.00	3,500
Stormwater vault - not required				*NIC*
G3060 Fuel Distribution	187,854	SF		
No work anticipated				*NIC*
G40 Site Electrical Utilities	**187,854**	**SF**	**0.92**	**173,000**
G4010 Electrical Distribution	187,854	SF	0.24	45,000
Transformer - by franchise utility				*NIC*
Power distribution - to building	1	LS	45,000.00	45,000
G4020 Site Lighting	187,854	SF	0.68	128,000
Pedestrian light poles	6	EA	6,000.00	36,000
Parking - light poles	10	EA	9,200.00	92,000
G4090 Other Site Electrical Utilities	187,854	SF		
No work anticipated				*NIC*

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2 Summary

			%	$/SF	TOTAL
			Gross Area:	51,712 SF	
A10	Foundations		2%	19.81	1,024,387
A	Substructure		2%	19.81	1,024,387
B10	Superstructure		10%	82.87	4,285,329
B20	Exterior Enclosure		7%	58.05	3,002,096
B30	Roofing		5%	37.15	1,921,230
B	Shell		22%	178.08	9,208,655
C10	Interior Construction		3%	27.20	1,406,518
C20	Stairways		0%	0.72	37,000
C30	Interior Finishes		4%	31.92	1,650,484
C	Interiors		8%	59.83	3,094,002
D10	Conveying Systems		0%	2.19	113,000
D20	Plumbing Systems		2%	18.22	942,440
D30	Heating, Ventilation & Air Conditioning		11%	87.25	4,511,963
D40	Fire Protection		1%	6.15	318,115
D50	Electrical Lighting, Power & Communications		9%	70.46	3,643,866
D	Services		23%	184.28	9,529,384
E10	Equipment		1%	8.49	438,798
E20	Furnishings		1%	3.97	205,473
E	Equipment & Furnishings		2%	12.46	644,271
F10	Special Construction		0%	0.00	0
F20	Selective Demolition		0%	0.00	0
F	Special Construction & Demolition		0%	0.00	0
BUILDING ELEMENTAL COST BEFORE CONTINGENCIES			57%	454.45	23,500,700
	Design Contingency	15.00%	9%	68.17	3,525,105
	Construction Contingency	5.00%	3%	26.13	1,351,290
BUILDING ELEMENTAL COST INCLUDING CONTINGENCIES			69%	548.75	28,377,095
	General Conditions	7.00%	5%	38.41	1,986,397
	General Requirements	7.50%	6%	44.04	2,277,262
	Corporate Tax	0.57%	0%	3.60	186,052
	SDI	1.75%	1%	11.11	574,469
	Office Overhead & Profit	4.50%	4%	29.07	1,503,057
	Bonds and Insurance	1.50%	1%	10.12	523,565
	Permit				*By Owner*
BUILDING CONSTRUCTION COST BEFORE ESCALATION			86%	685.10	35,427,898
	Escalation to Start Date (May 2025)	15.83%	14%	108.47	5,609,417
RECOMMENDED BUDGET			100%	793.57	41,037,315

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2

	Quantity	Unit	Rate	Total
Controls				
Building Footprint	31,953	SF		
Level 1	31,953	SF		
Level 2	18,397	SF		
Roof Terrace - Unconditioned Space	1,362	SF		
Building ht. Total, Average	28	LF		
Exterior Enclosure Total	23,285	LF		
Cladding	15,135	LF		
Glazing	8,150	LF		
Roof, typ	31,953	SF		
Soffit	1,500	SF		
Total Building Area	**51,712**	**SF**		
A10 Foundations	**51,712**	**SF**	**19.81**	**1,024,387**
A1010 Standard Foundations	51,712	SF	8.33	430,608
Building excavation	1,776	CY	18.00	31,968
Haul and dispose	1,776	CY	20.00	35,520
Reinforced footings				
Continuous footing - 2' x 2'	111	CY	690.00	76,590
Spread footing - 4' x 4'	22	CY	690.00	15,371
Perimeter insulation	1,490	SF	4.00	5,960
Perimeter drainage and bedding	795	LF	32.00	25,440
Elevator pit - complete	1	EA	22,500.00	22,500
Anchors and connections, allow	1	LS	8,500.00	8,500
Rammed aggregate piers	2,130	VLF	98.00	208,760
Temp shoring - not required				*NIC*
A1030 Slab On Grade	51,712	SF	11.48	593,779
Slab on grade - 4" thk., reinforced	31,953	SF	13.10	418,584
Vapor barrier	31,953	SF	3.00	95,859
Miscellaneous concrete specialties	31,953	SF	1.15	36,746
Waterproofing	1,490	SF	12.50	18,625
Allowance for blockouts	31,953	SF	0.75	23,965
A20 Basement Construction	**51,712**	**SF**		
A2010 Basement Excavation	51,712	SF		
No work anticipated				*NIC*

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2

	Quantity	Unit	Rate	Total
B10 Superstructure	**51,712**	**SF**	**82.87**	**4,285,329**
B1010 Floor Construction	**51,712**	**SF**	**81.16**	**4,197,042**
Transfer beams	110	CY	1,040.00	114,785
Stem wall - 1' ht.	28	CY	910.00	25,109
Mass timber construction - columns and beams				
Wood timber package				
CLT panels, spline ends and side joints	51,712	SF	28.00	1,447,936
Glu-lam beams	2,268	LF	130.00	294,840
Glu-lam blocking	38	EA	554.00	20,826
Glu-lam columns	1,053	LF	124.00	130,519
Layout/installation	51,712	SF	18.50	956,672
Lifting system	1	LS	24,000.00	24,000
Hardware	1	LS	95,000.00	95,000
Shop drawings	1	LS	36,000.00	36,000
Transport	1	LS	88,000.00	88,000
Decking				
Mass plywood panels - see "Wood timber package"				*incl. above*
Acoustic mat	18,397	SF	6.21	114,245
2" gypcrete	18,397	SF	5.00	91,985
Firestopping	18,397	SF	0.75	13,798
Sealants	18,397	SF	0.55	10,118
Shear wall	5,292	SF	85.00	449,820
Shear wall - interior	2,796	SF	85.00	237,639
Channels and angels	1	LS	30,000.00	30,000
Structural steel				
Elevator hoist beams	0.50	TNs	16,500.00	8,250
Misc. steel angles and connections	1	LS	7,500.00	7,500
B1020 Roof Construction	**51,712**	**SF**	**1.71**	**88,287**
Mass timber construction - beams and decking				*incl. above*
Beams - glu-lam				*incl.*
CLT decking				*incl.*
Hardware				*incl.*
PV support system - not required				*NIC*
Soffit	1,500	SF	35.00	52,500
Strapping, blocking and connections, add	31,953	SF	1.12	35,787

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2

	Quantity	Unit	Rate	Total
B20 Exterior Enclosure	**51,712**	**SF**	**58.05**	**3,002,096**
B2010 Exterior Walls	51,712	SF	40.13	2,075,171
Wood stud framing	23,285	SF		
Framing	23,285	SF	19.10	444,740
Sheathing	15,135	SF	6.50	98,378
Batt insulation R-21	15,135	SF	6.20	93,838
Weather barrier	15,135	SF	7.20	108,973
Cladding				
Metal panel system	7,568	SF	65.00	491,891
Stained wood system	4,541	SF	75.00	340,540
Terracotta system	3,027	SF	88.00	266,378
Facias, bands and screens	2,235	SF	35.00	78,225
Caps, flashing and sealants, allow	51,712	SF	2.75	142,208
Louvers, allow	1	LS	10,000.00	10,000
B2020 Exterior Windows	51,712	SF	17.33	896,355
Curtainwall	1,983	SF	140.00	277,628
Storefront	4,700	SF	102.00	479,361
Clerestory	1,467	SF	95.00	139,365
B2030 Exterior Doors	51,712	SF	0.59	30,570
Storefront, double	2	EA	5,425.00	10,850
Storefront, single	4	EA	3,500.00	14,000
HM flush, single	2	EA	2,860.00	5,720
B30 Roofing	**51,712**	**SF**	**37.15**	**1,921,230**
B3010 Roof Coverings	51,712	SF	27.72	1,433,430
TPO membrane system	31,953	SF	18.55	592,728
Coverboard - 7" thk.	31,953	SF	6.80	217,280
Insulation - R-30	31,953	SF	8.00	255,624
Vapor barrier	31,953	SF	2.00	63,906
Fall protection, allow	1	LS	50,000.00	50,000
Caps, flashing and sealants	31,953	SF	3.50	111,836
Roof walking pads, allow	1,500	SF	28.50	42,750
Roof terrace	1,362	SF	38.00	51,756
Parapet	1,118	LF	42.55	47,550

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2

	Quantity	Unit	Rate	Total
B3020 Roof Openings	51,712	SF	9.43	487,800
Roof monitor, incl. skylight	2,160	SF	210.00	453,600
Skylights	200	SF	171.00	34,200
C10 Interior Construction	**51,712**	**SF**	**27.20**	**1,406,518**
C1010 Partitions	51,712	SF	27.20	1,406,518
Solid and glazed walls				
Wood stud framing - 2x4				
Framing	30,270	SF	13.50	408,648
Acoustical batt insulation	30,270	SF	4.50	136,216
GWB, 2x	60,540	SF	4.85	293,621
Shaft wall, metal stud - 4"	1,204	SF		
Framing, 2x	2,408	SF	20.40	49,123
Acoustical batt insulation	1,204	SF	4.50	5,418
GWB, 2x	2,408	SF	4.85	11,679
Operable partition	30	LF	1,000.00	30,000
Folding glass wall	40	LF	1,500.00	60,000
Interior of exterior walls	15,135	SF	8.50	128,649
Storefront, allow	350	SF	98.00	34,300
Doors and frames				
Storefront, double	2	EA	4,750.00	9,500
HM, glass panel - single	10	EA	2,885.00	28,850
HM, flush - single	16	EA	2,385.00	38,160
Fittings				
Window treatment - roller shades	4,075	SF	11.50	46,861
Wayfinding and signage	51,712	SF	0.66	33,923
Whiteboards and writable surfaces, allow	400	SF	36.50	14,600
Corner guards and kick plates	1	LS	10,000.00	10,000
Mirrors - restroom	4	EA	280.00	1,120
Restroom fitout	4	EA	1,500.00	6,000
Lockers, allow	30	EA	375.00	11,250
Benches, allow	5	EA	750.00	3,750
Guardrail, glazed	195	LF	230.00	44,850
C20 Stairways	**51,712**	**SF**	**0.72**	**37,000**
C2010 Stair Construction	51,712	SF	0.72	37,000
Egress stairs	2	FLT	18,500.00	37,000

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2

	Quantity	Unit	Rate	Total
C30 Interior Finishes	**51,712**	**SF**	**31.92**	**1,650,484**
C3010 Wall Finishes	51,712	SF	9.23	477,256
Paint	78,084	SF	2.10	163,976
Tile restroom walls to 7' ht.	3,164	SF	20.00	63,280
Acoustic paneling, allow	1	LS	150,000.00	150,000
Misc. graphics and special finishes, allow	1	LS	100,000.00	100,000
C3020 Floor Finishes	51,712	SF	16.11	833,257
Walk-off mat	200	SF	15.00	3,000
Carpet tile	4,854	SF	6.50	31,551
Linoleum	6,135	SF	9.50	58,283
Polished concrete	14,174	SF	8.50	120,479
Sealed concrete	4,695	SF	3.90	18,311
Epoxy resinous flooring	1,980	SF	22.00	43,560
Tile	380	SF	20.00	7,600
Sprung hardwood flooring	2,845	SF	31.60	89,902
Hardwood sport flooring	16,449	SF	28.00	460,572
C3030 Ceiling Finishes	51,712	SF	6.57	339,972
ACT	10,989	SF	8.50	93,407
ACT, washable	1,092	SF	13.50	14,742
Acoustic treatment, allow	1	LS	100,000.00	100,000
Open to structure, painted	31,214	SF	1.85	57,746
GWB, painted	7,055	SF	10.50	74,078
D10 Conveying Systems	**51,712**	**SF**	**2.19**	**113,000**
D1010 Elevators & Lifts	51,712	SF	2.19	113,000
4500 LB - elevator w/ SS finish system	2	ST	56,500.00	113,000
D20 Plumbing Systems	**51,712**	**SF**	**18.22**	**942,440**
D2010 Plumbing Fixtures	51,712	SF	3.50	180,992
Sanitary fixtures, allow	51,712	SF	3.50	180,992
Water closets				*incl.*
Lavatories				*incl.*
Mop sink				*incl.*
Lab sink				*incl.*
Kitchen sink, two compartment				*incl.*
Hose bib				*incl.*

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2

	Quantity	Unit	Rate	Total
Deck-mounted eye wash				*incl.*
Drinking fountain				*incl.*
Connections				*incl.*
D2020 Domestic Water Distribution	51,712	SF	7.20	372,326
Domestic water, allow	51,712	SF	7.20	372,326
Piping and drainage				*incl.*
Domestic water, 2" HW/CW				*incl.*
Insulation				*incl.*
Seismic bracing				*incl.*
Shut off valves and specialties				*incl.*
Hot water heaters				*incl.*
Expansion tanks				*incl.*
HW circulation pump				*incl.*
Mixing valves				*incl.*
Reduced pressure backflow preventer, allow				*incl.*
D2030 Sanitary Waste	51,712	SF	6.92	357,847
Sanitary waste, allow	51,712	SF	6.92	357,847
Sanitary and vent piping				*incl.*
Floor drains				*incl.*
Sanitary filtration				*incl.*
Ancillaries				*incl.*
D2040 Rain Water Drainage	51,712	SF	0.60	31,275
Gutters and downspouts	963	LF	25.00	24,075
Roof drains	6	EA	1,200.00	7,200
D30 Heating, Ventilation & Air Conditioning	**51,712**	**SF**	**87.25**	**4,511,963**
D3020 Heat Generating Systems	51,712	SF	44.89	2,321,176
VRF system w/ heat recovery, complete	51,972	SF	36.50	1,896,978
Energy recovery unit-integrated	2	EA	15,000.00	30,000
Piping and insulation, incl. VRF refrigerant piping	51,972	SF	7.20	374,198
Ancillaries	1	LS	20,000.00	20,000
D3040 Distribution Systems	51,712	SF	24.44	1,263,669
Ductwork including flex	56,883	LBs	13.50	767,923
Electric duct heaters	114	EA	1,350.00	153,585

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2

	Quantity	Unit	Rate	Total
Diffusers and grilles	345	EA	190.00	65,502
Exhaust - general	51,712	SF	5.35	276,659
D3090 Other HVAC Systems & Equipment	51,712	SF	17.93	927,118
DDC controls	51,712	SF	14.50	749,824
Dehumidification system.	51,712	SF	1.10	56,883
Seismic bracing	51,712	SF	1.70	87,910
Testing and balancing	160	HR	130.00	20,800
Commissioning assist	90	HR	130.00	11,700
D40 Fire Protection	**51,712**	**SF**	**6.15**	**318,115**
D4010 Sprinklers	51,712	SF	6.11	315,865
Fire sprinkler system, complete	51,712	SF	5.85	302,515
Dry system - soffit	1,500	SF	8.90	13,350
D4030 Fire Protection Specialties	51,712	SF	0.04	2,250
Fire extinguisher boxes	6	EA	375.00	2,250
CO2 alarm system - not required				*NIC*
D50 Electrical Lighting, Power & Communications	**51,712**	**SF**	**70.46**	**3,643,866**
D5010 Electrical Service & Distribution	51,712	SF	13.73	709,818
Main distribution board	1	LS	185,000.00	185,000
Distribution panels	1	LS	40,000.00	40,000
Transformers	1	LF	35,000.00	35,000
Secondary conduit and feeder - allow	51,712	SF	4.50	232,704
Grounding	1	LS	20,000.00	20,000
Metering	51,712	SF	0.55	28,442
Receptacles, typ.	259	EA	575.00	148,672
PV system - not required				*NIC*
Ancillaries and equipment	1	LS	20,000.00	20,000
D5020 Lighting & Branch Wiring	51,712	SF	24.36	1,259,588
Lighting controls	51,712	SF	4.50	232,704
Branch wiring and conduit	51,712	SF	5.00	258,560
LED lighting	51,712	SF	14.50	749,824
Exterior lighting on building	1	LS	18,500.00	18,500

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2

	Quantity	Unit	Rate	Total
D5030 Communications & Security	51,712	SF	28.66	1,482,180
Phone and data including wiring and conduit	51,712	SF	4.30	222,362
Wireless access points	6	EA	1,650.00	9,900
Fire alarm system	51,712	SF	3.00	155,136
DAS	1	LS	50,000.00	50,000
PA system	51,712	SF	1.21	62,572
A/V and sound system - infrastructure only	51,712	SF	3.85	199,091
Projection screen, recessed	4	EA	4,850.00	19,400
Speakers	8	EA	2,600.00	20,800
Additional equipment, allow	1	LS	500,000.00	500,000
CCTV - infrastructure only	51,712	SF	3.75	193,920
Access control	6	EA	5,500.00	33,000
ADA button	4	EA	4,000.00	16,000
D5040 Electrical Specialty	51,712	SF	3.72	192,280
Electrical to mechanical systems - equipment connections	51,712	SF	2.50	129,280
PV systems, allow	15	KW	4,200.00	63,000
E10 Equipment	**51,712**	**SF**	**8.49**	**438,798**
E1010 Commercial Equipment	51,712	SF	2.34	121,000
Type 1 hood - cultural kitchen	1	EA	121,000.00	121,000
Refrigerator/freezer				*by Owner*
Microwave				*by Owner*
Coffer maker				*by Owner*
E1090 Other Equipment	51,712	SF	6.15	317,798
Basketball backboards - retractable	4	EA	8,500.00	34,000
Court divider curtain	1	EA	17,300.00	17,300
Wall padding	3,430	SF	8.60	29,498
Scoreboard	2	EA	18,500.00	37,000
Food service equipment, allow	1	LS	200,000.00	200,000
E20 Furnishings	**51,712**	**SF**	**3.97**	**205,473**
E2010 Fixed Furnishings	51,712	SF	3.97	205,473
Mirror wall - 8' ht.	1,212	SF	36.15	43,814
Ballet barre	152	LF	69.20	10,484
Reception desk, allow	1	LS	12,500.00	12,500
Chair rail, allow	200	LF	85.00	17,000
Uppers, PLAM (allow)	100	LF	380.00	38,000

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Building) - Option 2

	Quantity	Unit	Rate	Total
Counters incl. cabinets, PLAM (allow)	125	LF	425.00	53,125
Counters incl. cabinets, solid surface (allow)	50	LF	475.00	23,750
Cubbies, allow	20	LF	340.00	6,800
E2020 Movable Furnishings	**51,712**	**SF**		
FF&E - by Owner				*FF&E*

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Sitework) - Option 2 Summary

			%	$/SF	TOTAL
			Gross Area:	187,854 SF	
G10	Site Preparation		6%	7.79	1,464,158
G20	Site Improvements		47%	56.40	10,595,300
G30	Site Mechanical Utilities		3%	3.97	746,662
G40	Site Electrical Utilities		1%	0.92	173,000
G	Building Sitework		57%	69.09	12,979,119
SITE ELEMENTAL COST BEFORE CONTINGENCIES			57%	69.09	12,979,119
	Design Contingency	15.00%	9%	0.00	1,946,868
	Construction Contingency	5.00%	0%	3.97	746,299
SITE ELEMENTAL COST INCLUDING CONTINGENCIES			69%	83.43	15,672,287
	General Conditions	7.00%	5%	5.84	1,097,060
	General Requirements	7.50%	6%	6.70	1,257,701
	Corporate Tax (OR)	0.57%	0%	0.55	102,754
	Subcontractor Default Insurance (OR)	1.75%	0%	1.69	317,272
	Office Overhead & Profit	4.50%	4%	4.42	830,118
	Bonds and Insurance	1.50%	1%	1.54	289,158
	Permit				*By Owner*
SITE CONSTRUCTION COST BEFORE ESCALATION			86%	104.16	19,566,349
	Escalation to Start Date (May 2025)	15.83%	14%	16.49	3,098,005
RECOMMENDED BUDGET			100%	120.65	22,664,355

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Sitework) - Option 2

	Quantity	Unit	Rate	Total
Control Quantities				
Program Areas	187,854	SF		
Building footprint	*31,953*	*SF*		
Site Development	44,165	SF		
Raised parking structure	*44,165*	*SF*		
Pedestrian Paving	14,034	SF		
Concrete - sidewalk	*12,944*	*SF*		
Concrete w/ integral color - plaza	*1,090*	*SF*		
Landscape	97,702	SF		
Planting area	*97,702*	*SF*		
G10 Site Preparation	**187,854**	**SF**	**7.79**	**1,464,158**
G1010 Site Clearing	187,854	SF	0.81	153,074
Construction entrance	1	EA	5,000.00	5,000
Construction fence	1,778	LF	13.50	24,003
Erosion control w/ catch basin filters and monitoring	187,854	SF	0.20	37,571
Tree protection, allow	1	LS	12,500.00	12,500
Utility protection, allow	1	LS	7,500.00	7,500
Temp facilities	16	MO	1,500.00	24,000
Dewatering	1	LS	15,000.00	15,000
Construction survey, incl. layout	1	LS	27,500.00	27,500
G1020 Site Demolition and Relocations	187,854	SF	1.13	212,247
Clear and grub - existing vegetation	150,283	SF	0.75	112,712
Demo - hardscape	37,571	SF	2.25	84,534
Demo - misc. site obstructions, allow	1	LS	15,000.00	15,000
G1030 Site Earthwork	187,854	SF	5.85	1,098,837
Mass excavation - building, see 'Building"				*incl.*
Mass excavation	23,767	CY	18.00	427,811
Haul and dispose	23,767	CY	20.00	475,345
Grading - incl. compaction	187,854	SF	0.50	93,927
Base aggregates				
Building footprint - 12" depth	1,183	CY	45.00	53,255
Vehicular paving - 6" depth	818	CY	45.00	36,804
Pedestrian paving - 6" depth	260	CY	45.00	11,695
G1040 Hazardous Waste Remediation	187,854	SF		
No work anticipated				*NIC*

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Sitework) - Option 2

	Quantity	Unit	Rate	Total
G20 Site Improvements	**187,854**	**SF**	**56.40**	**10,595,300**
G2010 Roadways	187,854	SF		
No work anticipated				*NIC*
G2020 Parking Lots	187,854	SF	0.40	75,513
Asphalt - See "Raised parking structure incl. SOG, allow"				*incl. below*
Striping	88,330	SF	0.25	22,083
Concrete curb - 6"	1,178	LF	35.00	41,230
ADA curb ramp	4	EA	1,550.00	6,200
ADA sign	8	EA	750.00	6,000
G2030 Pedestrian Paving	12,944	SF	12.89	166,841
Concrete - sidewalk	12,944	SF	11.50	148,856
Concrete w/ integral color - plaza	1,090	SF	16.50	17,985
G2040 Site Development	187,854	SF	48.57	9,124,620
Site structures				
Raised parking structure incl. SOG, allow	44,165	SF	190.00	8,391,350
Retaining wall incl. waterproofing, 5-7'	2,640	SF	75.50	199,320
Retaining wall incl. waterproofing, 10'	4,400	SF	75.50	332,200
Site walls, stairs & railings				
Seat wall - CIP conc w/ wood top	200	LF	275.00	55,000
Stairs	750	SF	55.00	41,250
Rails	300	LF	185.00	55,500
Site furnishing				
Café tables, bike racks, trash receptacles (etc.)	1	ALW	50,000.00	50,000
Park improvements - no work anticipated				*NIC*
G2050 Landscaping	187,854	SF	6.54	1,228,326
Trees - 3" Cal., deciduous	40	EA	650.00	26,000
Tree grates - not required				*NIC*
Planting area	97,702	SF		
Top soil - 24" depth	7,237	CY	45.00	325,673
Mulch - 3" depth	905	CY	40.00	36,186
Planting - 2 gallon, 24" O.C.	24,426	EA	25.00	610,638
Irrigation				
Planting area	97,702	SF	2.25	219,830
Devices and controls	1	LS	10,000.00	10,000

City of Kirkland, Washington
Recreation & Aquatics Centers

North Kirkland (Sitework) - Option 2

	Quantity	Unit	Rate	Total
G30 Site Mechanical Utilities	**187,854**	**SF**	**3.97**	**746,662**
G3010 Water Supply	187,854	SF	0.47	89,000
Water line	180	LF	55.00	9,900
Fire service line	180	LF	95.00	17,100
FD connection	1	EA	10,000.00	10,000
Vault structure	1	EA	30,000.00	30,000
Fire hydrants	2	EA	7,500.00	15,000
Connection to existing service	2	EA	3,500.00	7,000
G3020 Sanitary Sewer	187,854	SF	0.16	30,350
SS - 8" pipe, incl. trenching and backfill	220	LF	105.00	23,100
SS - cleanout	5	EA	750.00	3,750
Connection to existing service	1	EA	3,500.00	3,500
G3030 Storm Sewer	187,854	SF	3.34	627,312
SW - 8" pipe, incl. trenching and backfill	380	LF	85.00	32,300
Devices and controls - allow	1	EA	35,000.00	35,000
Detention vault, allow	463,760	GAL	1.20	556,512
Connection to existing service	1	EA	3,500.00	3,500
Stormwater vault - not required				*NIC*
G3060 Fuel Distribution	187,854	SF		
No work anticipated				*NIC*
G40 Site Electrical Utilities	**187,854**	**SF**	**0.92**	**173,000**
G4010 Electrical Distribution	187,854	SF	0.24	45,000
Transformer - by franchise utility				*NIC*
Power distribution - to building	1	LS	45,000.00	45,000
G4020 Site Lighting	187,854	SF	0.68	128,000
Pedestrian light poles	6	EA	6,000.00	36,000
Parking - light poles	10	EA	9,200.00	92,000
G4090 Other Site Electrical Utilities	187,854	SF		
No work anticipated				*NIC*

City of Kirkland, Washington
Recreation & Aquatics Centers

Alternates

	Quantity	Unit	Rate	Total
Alt 1: Houghton Option 1 - Steel Structure in lieu of Mass Timber				
ADD				
Steel structure	109,705	SF	13.71	1,503,566
Alternate Cost Before Markups				**1,503,566**
Design Contingency	15.00%			225,535
Construction Contingency	5.00%			86,455
General Conditions	7.00%			127,089
General Requirements	7.50%			145,698
Corporate Tax	0.57%			11,904
SDI	1.75%			36,754
Office Overhead & Profit	4.50%			96,165
Bonds and Insurance	1.50%			33,497
Escalation to Start Date (May 2025)	15.83%			358,888
Alternate Cost After Markups				**2,625,553**
Alt 2: Houghton Option 2 - Steel Structure in lieu of Mass Timber				
ADD				
Steel structure	91,463	SF	13.61	1,244,905
Alternate Cost Before Markups				**1,244,905**
Design Contingency	15.00%			186,736
Construction Contingency	5.00%			71,582
General Conditions	7.00%			105,226
General Requirements	7.50%			120,634
Corporate Tax	0.57%			9,856
SDI	1.75%			30,431
Office Overhead & Profit	4.50%			79,622
Bonds and Insurance	1.50%			27,735
Escalation to Start Date (May 2025)	15.83%			297,148
Alternate Cost After Markups				**2,173,875**

City of Kirkland, Washington
Recreation & Aquatics Centers

Alternates

	Quantity	Unit	Rate	Total
Alt 3: North Kirkland Option 1 - Steel Structure in lieu of Mass Timber				
ADD				
Steel structure	78,700	SF	13.40	1,054,696
Alternate Cost Before Markups				**1,054,696**
Design Contingency	15.00%			158,204
Construction Contingency	5.00%			60,645
General Conditions	7.00%			89,148
General Requirements	7.50%			102,202
Corporate Tax	0.57%			8,350
SDI	1.75%			25,782
Office Overhead & Profit	4.50%			67,456
Bonds and Insurance	1.50%			23,497
Escalation to Start Date (May 2025)	15.83%			251,747
Alternate Cost After Markups				**1,841,728**
Alt 4: North Kirkland Option 2 - Steel Structure in lieu of Mass Timber				
ADD				
Steel structure	51,712	SF	13.76	711,572
Alternate Cost				**711,572**
Design Contingency	15.00%			106,736
Construction Contingency	5.00%			40,915
General Conditions	7.00%			60,146
General Requirements	7.50%			68,953
Corporate Tax	0.57%			5,633
SDI	1.75%			17,394
Office Overhead & Profit	4.50%			45,511
Bonds and Insurance	1.50%			15,853
Escalation to Start Date (May 2025)	15.83%			169,846
Alternate Cost After Markups				**1,242,559**
Alt 5: North Kirkland Option 2 - Pool in lieu of Basketball Court				
DEDUCT				
Hardwood sport flooring	16,449	SF	(28.00)	(460,572)
Basketball backboards - retractable	4	EA	(8,500.00)	(34,000)
Court divider curtain	1	EA	(17,300.00)	(17,300)

City of Kirkland, Washington
Recreation & Aquatics Centers

Alternates

	Quantity	Unit	Rate	Total
Wall padding	3,430	SF	(8.60)	(29,498)
Scoreboard	2	EA	(18,500.00)	(37,000)
ADD				
Temp shoring, allow	1	LS	75,000.00	75,000
New pool construction, allow	5,815	SF	390.00	2,267,850
Pool equipment, allow	1	LS	50,000.00	50,000
Pool mech/plumbing				*incl. above*
Natatorium decking	5,086	SF	18.20	92,565
Alternate Cost				**1,907,045**
Design Contingency	15.00%			286,057
Construction Contingency	5.00%			109,655
General Conditions	7.00%			161,193
General Requirements	7.50%			184,796
Corporate Tax	0.57%			15,098
SDI	1.75%			46,617
Office Overhead & Profit	4.50%			121,971
Bonds and Insurance	1.50%			42,486
Escalation to Start Date (May 2025)	15.83%			455,195
Alternate Cost After Markups				**3,330,114**

BALLARD*KING & ASSOCIATES LTD
Recreation Planning and Operations Consultants

The following are assumptions that have been made for the proposed facilities at the Houghton Park & Ride location.

- The operations plan is for the two different program options.
- The operations plan is based on a program for each option but without the benefit of a final concept plan or a designated site. The final concept plan could impact part-time staffing levels and site could influence revenue.
    - The net subsidy of each scenario could vary +/- 5-10% based on the above factors and/or changes in the market.
- All operating expenses are shown in current dollars and assumes the facility is fully operational for a complete calendar year. Depending on when the facility is ultimately constructed and operated, the City should expect that future staffing and operating costs will grow approximately 3% per year.
- The presence of other public or private aquatics providers in the market will remain the same.
- Operation of the center is shown by the City of Kirkland with all costs and revenues included. This is based on Department staff guarding the pool during all hours of use.
- Full-time staff costs are based on current staff rates for the same basic positions using City compensation and benefits.
- Part-time rates are based on current market rates in the Puget Sound area and include a 7.65% benefit factor.
- City of Kirkland administrative support charge backs have been added to the expense portion of the budget. Per the City, a factor of 18% of personnel, commodities, and contractual obligations was included.
- City of Kirkland IT charges have been added to the total expenses.
- Revenues assumptions are based on current market rates for aquatics and wellness facilities in the Puget Sound, and includes market rates for admissions, memberships, rentals, and programs.
- The operational plan assumes that the City will purchase all weight and cardio equipment.

Week Assumptions

- Summer Hours – 14 Weeks
- School Year Hours – 36 Weeks
- Total Operational Year 50 Weeks (2-week maintenance closure)

Operating Day Both Options:

• Monday-Friday:	5:30A-9:00P	77.5 hours
• Saturday:	7:00A-7:00P	12 hours
• Sunday:	10:00A-7:00P	9 hours
• Weekly Operational Hours:		98.5 hours

The following expenses have been developed by B*K using previous planning efforts and feedback from City staff. The information used to develop the plans also includes B*K's familiarity with similar operations. The location of the facility, along with final design, can impact the operational expenses associated with the facility.

Personnel	**Option #1**	**Option #2**
Full-Time	2,013,353	1,880,864
Part-Time	1,281,295	1,229,747
Sub-Total	$3,294,648	$3,110,611

Commodities/Service & Supplies	**Option #1**	**Option #2**
Office Supplies	8,000	7,000
Chemicals	80,000	80,000
Maintenance/Repair/Materials	50,000	40,000
Janitor Supplies	25,000	20,000
Recreation Supplies	9,500	8,500
Uniforms	8,000	6,000
Printing/Postage	5,000	4,000
Other Misc. Exp.	3,000	2,500
Fuel/Mileage	1,500	1,500
Sub-Total	$190,000	$169,500

Contractual	Option #1	Option #2
Utilities (gas and electric)	607,547[1]	483,313[2]
Water/Sewer	85,000	85,000
Insurance[3]	27,616	21,969
Communications (phone)	7,500	5,000
Contract Services	40,000	35,000
Rental Equipment	15,000	15,000
Advertising	15,000	15,000
Training	9,000	8,000
Conference	5,000	5,000
Dues/Subscriptions	2,500	2,500
Bank Charges[4]	109,817	102,450
Other	1,500	1,500
Sub-Total	925,479	779,731

Administrative Support	Option #1	Option #2
Charge Backs (18%)	793,823	730,772

IT Fees	Option #1	Option #2
Annual	127,284	127,284

Capital Improvement Fund	Option #1	Option #2
Annual Allocation	200,000	150,000

[1] 110,463 square feet @ $5.50 per square foot.
[2] 87,874 square feet @ $5.50 per square foot.
[3] Factored at $0.25 per square foot. Square footage used is the same as that to calculate utility costs.
[4] Factored at 3% of total revenue generation.

Totals	Option #1	Option #2
Staffing	3,294,648	3,110,611
Commodities	190,000	169,500
Contractual	925,479	779,731
Administrative Support	793,823	730,772
IT Fees	127,284	127,284
Total w/out Replacement Fund	**$5,331,234**	**$4,917,898**
Capital Replacement Fund	200,000	150,000
Total w/ Replacement Fund	**$5,531,234**	**$5,067,898**

Full Time Staffing

Positions	Salary/Benefit	Option #1	Option #2
Facility Manager	$106,500	1	1
Sports & Competition Supervisor	$85,500	1	1
Fitness Supervisor	$85,500	1	1
Front Desk Supervisor	$85,500	1	1
Aquatics Supervisor	$85,500	1	1
Aquatics Coordinator	$83,000	1	1
Lifeguards	$65,000	4	4
Youth Program Supervisor	$85,500	1	1
Enrichment & Senior Supervisor	$85,500	1	1
Maintenance Supervisor	$85,500	1	1
Maintenance Tech	$65,000	1.5	1
Custodial	$62,000	5	4
Total Positions		19.5	18
Total Full-Time Wages		$2,013,353	$1,880,864

NOTES:

- Full time wages include benefits, with information provided by the City.
- It is the belief of B*K that the number of allocated full-time Custodial/Building Maintenance positions is the minimum that the City should consider.

Part Time Staffing Option #1

Positions	Hourly Rate	Hours	Weeks	Total
Lead Front Desk	$21.00	94	14	27,489
		76	36	57,456
Front Desk	$18.00	164	14	41,202
		77	36	49,896
Building Supervisor	$24.00	59	14	19,824
		44	36	38,016
Fitness Attendant	$17.00	54	50	45,475
Lifeguard	$19.00	536	14	142,576
		378	36	258,552
Lead Lifeguard	$22.00	70	14	21,406
		54	36	42,372
Custodial Support	$16.00	40	50	32,000
Lead Child Care	$21.00	45	14	13,230
		54	36	40,446
Child Care	$18.00	90	14	22,680
		100	36	64,800
Sub-Total				917,420
Aquatic Programs				128,564
Rental Staff				13,680
Dry Programs				130,578
Sub-Total				1,190,242
FICA				91,053
Total				**$1,281,295**

Part Time Staffing Option #2

Positions	Hourly Rate	Hours	Weeks	Total
Lead Front Desk	$21.00	94	14	27,489
		76	36	57,456
Front Desk	$18.00	164	14	41,202
		77	36	49,896
Building Supervisor	$24.00	59	14	19,824
		44	36	38,016
Fitness Attendant	$17.00	54	50	45,475
Lifeguard	$19.00	477	14	126,749
		335	36	229,140
Lead Lifeguard	$22.00	70	14	21,406
		54	36	42,372
Custodial Support	$16.00	40	50	32,000
Lead Child Care	$21.00	45	14	13,230
		50	36	37,800
Child Care	$18.00	90	14	22,680
		100	36	64,800
Sub-Total				869,535
Aquatic Programs				128,564
Rental Staff				13,680
Dry Programs				130,578
Sub-Total				1,142,357
FICA				87,390
Total				**$1,229,747**

The following revenue opportunities developed by B*K, are based on feedback provided by the City, familiarity with the market, and experience as facility operators.

The projections are what B*K feels the City could anticipate achieving once the facility is fully operational. It is important to note that these numbers are reflective of new revenue and do not reflect existing program revenue. B*K believes this is a realistic estimation of potential revenue, in fact some of the revenue associated with competition rentals and practice rentals could be characterized as moderate to aggressive in nature.

Revenues:

Category	Option #1	Option #2
Fees		
Daily Admission	251,000	251,000
Membership	2,409,000	2,273,700
Sub-Total	$2,660,000	$2,524,700
Programs		
Aquatic	325,980	325,980
Non-Aquatic	274,125	274,125
Sub-Total	$600,105	600,105
Other		
Birthday Parties	78,400	78,400
Practice Rentals	220,800	138,000
Other Aquatic	32,850	21,600
Other Non-Aquatic	68,400	52,200
Sub-Total	$400,450	$290,200
Total	**$3,660,555**	**$3,415,005**

Note: Programs are not factored at maximum participant capacity.

Option #1

Daily Admission:

	Resident	Non-Resident
Under 2	Free	Free
Youth (2-17)	$12.00	$15.00
Adult	$14.00	$17.00
Senior (65+)	$12.00	$15.00

Membership Detail:

	Resident Annual	Non-Resident Annual
Youth	$540	$648
Adult	$900	$1,080
Household	$1,560	$1,872
Senior	$600	$720
Senior +1	$720	$864

- Fees are for drop-in use of all areas of the center (aquatics and dry-side amenities).
- Membership rates include basic fitness class and childcare/watch services.
- 20% differential between Resident & Non-Resident Rates
- 1,525 resident passes sold in option #1, which equates to a 3.88% household penetration rate.
- 525 non-resident passes.

Option #1 – 5-Year Cost Recovery Projection

Category	Year 1	Year 2	Year 3	Year 4	Year 5
Expenses	$5,531,234	$5,586,546	$5,754,142	$5,926,767	$6,104,570
Revenues	$3,660,555	$4,026,611	$4,227,941	$4,354,779	$4,485,423
Difference	($1,870,679)	($1,559,936)	($1,526,201)	($1,571,987)	($1,619,147)
Cost Recovery	66.2%	72.1%	73.5%	73.5%	73.5%
Cap. Invest.	$200,000	$400,000	$600,000	$800,000	$1,000,000

Capital Improvement line item is cumulative, with $200,000 allocated annually.

Option #2

Daily Admission:

	Resident	Non-Resident
Under 2	Free	Free
Youth (2-17)	$12.00	$15.00
Adult	$14.00	$17.00
Senior (65+)	$12.00	$15.00

Membership Detail:

	Resident Annual	Non-Resident Annual
Youth	$540	$648
Adult	$900	$1,080
Household	$1,560	$1,872
Senior	$600	$720
Senior +1	$720	$864

- Fees are for drop-in use of all areas of the center (aquatics and dry-side amenities).
- Membership rates include basic fitness class and childcare/watch services.
- 20% differential between Resident & Non-Resident Rates
- 1,475 resident passes sold in option #2, which equates to a 3.75% household penetration rate.
- 475 non-resident passes.

Option #1 – 5-Year Cost Recovery Projection

Category	Year 1	Year 2	Year 3	Year 4	Year 5
Expenses	$5,067,898	$5,118,577	$5,272,134	$5,430,298	$5,593,207
Revenues	$3,415,005	$3,756,506	$3,944,331	$4,062,661	$4,184,541
Difference	($1,652,893)	($1,362,071)	($1,327,803)	($1,367,637)	($1,408,666)
Cost Recovery	67.4%	73.4%	74.8%	74.8%	74.8%
Cap. Invest.	$150,000	$300,000	$450,000	$600,000	$750,000

Capital Improvement line item is cumulative, with $150,000 allocated annually.

Rental rate and program fees have been vetted with the City or are reflective of current/planned rate structure.

Rental Rates

- 25Y Lap Lane $25.00/hr
- Therapy Rental $75.00/hr
- Leisure Pool $600/hr
- Gymnasium $45.00/hr
- Community Rooms $25.00/hr

Aquatic Group Exercise[5]

- $65 per month for drop-in access

Swim Lessons

- $95 per session, 8, 35-minute classes per session

Private Swim Lessons

- $150 per session, 4, 30-minute classes per session

Semi-Private Swim Lessons

- $195 per session, 4, 30-minute classes per session

Birthday Parties

- $350 per party, 2 hour guided party

Dive-In Movie

- $5.00 per attendee

Little Swimmers

- $5.00 per attendee

Group Exercise Dry-Side[6]

- Included in Membership

Personal Training

- $65 per session

Camp Programs

- $175 per week

Enrichment Program

- $75 per session

[5] Aquatic group exercise classes would not be included in membership.
[6] Dry Side Group Exercise and Child Care would be included in membership.

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The following are assumptions that have been made for the proposed facilities at the Houghton Park & Ride location.

- The operations plan is for the two different program options.
- The operations plan is based on a program for each option but without the benefit of a final concept plan or a designated site. The final concept plan could impact part-time staffing levels and site could influence revenue.
    - The net subsidy of each scenario could vary +/- 5-10% based on the above factors and/or changes in the market.
- All operating expenses are shown in current dollars and assumes the facility is fully operational for a complete calendar year. Depending on when the facility is ultimately constructed and operated, the City should expect that future staffing and operating costs will grow approximately 3% per year.
- The presence of other public or private aquatics providers in the market will remain the same.
- Operation of the center is shown by the City of Kirkland with all costs and revenues included. This is based on Department staff guarding the pool during all hours of use.
- Full-time staff costs are based on current staff rates for the same basic positions using City compensation and benefits.
- Part-time rates are based on current market rates in the Puget Sound area and include a 7.65% benefit factor.
- City of Kirkland administrative support charge backs have been added to the expense portion of the budget. Per the City, a factor of 18% of personnel, commodities, and contractual obligations was included.
- City of Kirkland IT charges have been added to the total expenses.
- Revenues assumptions are based on current market rates for aquatics and wellness facilities in the Puget Sound, and includes market rates for admissions, memberships, rentals, and programs.
- The operational plan assumes that the City will purchase all weight and cardio equipment.

Week Assumptions

- Summer Hours – 14 Weeks
- School Year Hours – 36 Weeks
- Total Operational Year 50 Weeks (2-week maintenance closure)

Operating Day Both Options:

• Monday-Friday:	5:30A-9:00P	77.5 hours
• Saturday:	7:00A-7:00P	12 hours
• Sunday:	10:00A-7:00P	9 hours
• Weekly Operational Hours:		98.5 hours

The following expenses have been developed by B*K using previous planning efforts, feedback from City staff, and input from SplashForward. The information used to develop the plans also includes B*K's familiarity with similar operations. The location of the facility, along with final design, can impact the operational expenses associated with the facility. The expenses associated with this report do not consider the operation of Odle Pool.

Personnel	**Option #1**	**Option #2**	**Option #3**
Full-Time	1,586,444	1,110,021	1,586,444
Part-Time	1,013,677	547,607	1,013,677
Sub-Total	$2,600,121	$1,657,628	$2,600,121

Commodities/Service & Supplies	**Option #1**	**Option #2**	**Option #3**
Office Supplies	7,000	5,000	5,000
Chemicals	30,000	5,000	30,000
Maintenance/Repair/Materials	40,000	25,000	30,000
Janitor Supplies	20,000	15,000	15,000
Recreation Supplies	8,500	7,000	7,000
Uniforms	6,000	4,000	5,000
Printing/Postage	4,000	3,000	3,000
Other Misc. Exp.	2,500	2,000	2,000
Fuel/Mileage	1,500	1,500	1,500
Sub-Total	$119,500	$67,500	$95,500

Contractual	Option #1	Option #2	Option #3
Utilities (gas and electric	370,190[1]	182,452[2]	250,872
Water/Sewer	60,000	15,000	60,000
Insurance[3]	18,510	11,403	11,403
Communications (phone)	5,000	4,000	4,000
Contract Services	30,000	25,000	25,000
Rental Equipment	10,000	10,000	10,000
Advertising	12,000	12,000	12,000
Training	8,000	6,000	6,000
Conference	5,000	5,000	5,000
Dues/Subscriptions	2,500	2,500	2,500
Bank Charges[4]	87,533	35,176	74,424
Other	1,500	1,500	1,500
Sub-Total	$610,233	$310,031	$462,698

Administrative Support	Option #1	Option #2	Option #3
Charge Backs (18%)	599,374	366,329	569,038

IT Fees	Option #1	Option #2	Option #3
Annual	116,675	85,518	116,675

Capital Investment Fund	Option #1	Option #2	Option #3
Annual Allocation	150,000	100,000	150,000

[1] 74,038 square feet @ $5.50 per square foot.
[2] 45,613 square feet @ $4.00 per square foot.
[3] Factored at $0.25 per square foot. Square footage used is the same as that to calculate utility costs.
[4] Factored at 3% of total revenue generation.

Totals	Option #1	Option #2	Option #3
Staffing	2,600,121	1,657,628	2,600,121
Commodities	119,500	67,500	98,500
Contractual	610,233	310,031	462,698
Administrative Support	699,374	366,329	569,038
IT Fees	116,675	85,518	116,675
Total w/out Replace. Fund	**$4,045,902**	**$2,487,005**	**$3,847,032**
Capital Replacement Fund	150,000	100,000	150,000
Total w/ Replacement Fund	**$4,195,902**	**$2,587,005**	**$3,997,032**

Full Time Staffing

Positions	Salary/Benefit	Option #1	Option #2	Option #3
Facility Manager	$106,500	1	1	1
Sports & Competition Supervisor	$85,500	1	1	1
Fitness Supervisor	$85,500	1	1	1
Front Desk Supervisor	$85,500	1	1	1
Aquatics Supervisor	$85,500	1	0	1
Aquatics Coordinator	$83,000	0	0	0
Lifeguards	$65,000	3	0	3
Youth Program Supervisor	$85,500	1	1	1
Enrichment & Senior Supervisor	$85,500	1	1	1
Maintenance Supervisor	$85,500	1	1	1
Maintenance Tech	$65,000	1	1	1
Custodial	$62,000	3	2	3
Total Positions		15	10	15
Total Full-Time Wages		$1,586,444	$1,110,021	$1,586,444

NOTE:

- Full time wages include benefits, with information provided by the City.
- It is the belief of B*K that the number of allocated full-time Custodial/Building Maintenance positions is the minimum that the City should consider.

Part Time Staffing Option #1

Positions	Hourly Rate	Hours	Weeks	Total
Lead Front Desk	$21.00	94	14	27,489
		76	36	57,456
Front Desk	$18.00	98	14	24,570
		69	36	44,388
Building Supervisor	$24.00	59	14	19,824
		44	36	38,016
Fitness Attendant	$17.00	54	50	45,475
Lifeguard	$19.00	307	14	81,596
		219	36	149,796
Lead Lifeguard	$22.00	70	14	21,406
		54	36	42,372
Custodial Support	$16.00	40	50	32,000
Lead Child Care	$21.00	45	14	13,230
		50	36	37,800
Child Care	$18.00	90	14	22,680
		100	36	64,800
Sub-Total				722,898
Aquatic Programs				128,564
Rental Staff				13,680
Dry Programs				15,000
NK Existing Inst.				61,500
Sub-Total				941,642
FICA				72,036
Total				**$1,013,677**

Part Time Staffing Option #2

Positions	Hourly Rate	Hours	Weeks	Total
Lead Front Desk	$21.00	94	14	27,489
		76	36	57,456
Front Desk	$18.00	98	14	24,570
		69	36	44,388
Building Supervisor	$24.00	59	14	19,824
		44	36	38,016
Fitness Attendant	$17.00	54	50	45,475
Lifeguard	$19.00	0	14	0
		0	36	0
Lead Lifeguard	$22.00	0	14	0
		0	36	0
Custodial Support	$16.00	40	50	32,000
Lead Child Care	$21.00	45	14	13,230
		50	36	37,800
Child Care	$18.00	90	14	22,680
		100	36	64,800
Sub-Total				427,728
Rental Staff				4,464
Dry Programs				15,000
NK Existing Inst.				61,500
Sub-Total				508,692
FICA				38,915
Total				**$547,607**

Part Time Staffing Option #3

Positions	Hourly Rate	Hours	Weeks	Total
Lead Front Desk	$21.00	94	14	27,489
		76	36	57,456
Front Desk	$18.00	98	14	24,570
		69	36	44,388
Building Supervisor	$24.00	59	14	19,824
		44	36	38,016
Fitness Attendant	$17.00	54	50	45,475
Lifeguard	$19.00	307	14	81,596
		219	36	149,796
Lead Lifeguard	$22.00	70	14	21,406
		54	36	42,372
Custodial Support	$16.00	40	50	32,000
Lead Child Care	$21.00	45	14	13,230
		50	36	37,800
Child Care	$18.00	90	14	22,680
		100	36	64,800
Sub-Total				722,898
Aquatic Programs				128,564
Rental Staff				13,680
Dry Programs				15,000
NK Existing Inst.				61,500
Sub-Total				941,642
FICA				72,036
Total				**$1,013,677**

The following revenue opportunities developed by B*K, are based on feedback provided by the City, familiarity with the market, and experience as facility operators.

The projections are what B*K feels the City could anticipate achieving once the facility is fully operational. It is important to note that these numbers are reflective of new revenue and do not reflect existing program revenue. B*K believes this is a realistic estimation of potential revenue, in fact some of the revenue associated with competition rentals and practice rentals could be characterized as moderate to aggressive in nature.

Category	Option #1	Option #2	Option #3
Fees			
Daily Admission	204,000	133,700	204,000
Membership	2,001,540	729,720	$1,564,560
Sub-Total	$2,205,540	$863,420	$1,768,560
Programs			
Aquatic	325,980	0	$325,980
Non-Aquatic	70,000	70,000	$70,000
Sub-Total	$395,980	$70,000	$395,980
Other			
Birthday Parties	78,400	34,100	78,400
Practice Rentals	0	0	0
Other Aquatic	$32,850	0	$32,850
Other Non-Aquatic	0	0	0
Sub-Total	$111,250	$34,100	$111,250
Existing Revenue	$205,000	$205,000	$205,000
Total	**$2,917,770**	**$1,172,520**	**$2,480,790**

Note: Programs are not factored at maximum participant capacity.

Option #1

Daily Admission:

	Resident	Non-Resident
Under 2	Free	Free
Youth (2-17)	$12.00	$15.00
Adult	$14.00	$17.00
Senior (65+)	$12.00	$15.00

Membership Detail:

	Resident Annual	Non-Resident Annual
Youth	$480	$576
Adult	$840	$1,008
Household	$1,500	$1,800
Senior	$540	$648
Senior +1	$660	$792

- Fees are for drop-in use of all areas of the center (aquatics and dry-side amenities).
- Membership rates include basic fitness class and childcare/watch services.
- 20% differential between Resident & Non-Resident Rates
- 1,450 resident passes sold in option #1, which equates to a 3.68% household penetration rate.
- 365 non-resident passes.

Option #1 – 5-Year Cost Recovery Projection

Category	Year 1	Year 2	Year 3	Year 4	Year 5
Expenses	$4,195,902	$4,237,861	$4,364,997	$4,495,947	$4,630,826
Revenues	$2,917,770	$3,122,014	$3,278,115	$3,376,458	$3,477,752
Difference	($1,278,132)	($1,115,847)	($1,086,883)	($1,119,489)	($1,153,074)
Cost Recovery	69.5%	73.7%	75.1%	75.1%	75.1%
Cap. Invest.	$150,000	$300,000	$450,000	$600,000	$750,000

Capital Improvement line item is cumulative, with $150,000 allocated annually.

Option #2

Daily Admission:

	Resident	Non-Resident
Under 2	Free	Free
Youth (2-17)	$12.00	$15.00
Adult	$14.00	$17.00
Senior (65+)	$12.00	$15.00

Membership Detail:

	Resident Annual	Non-Resident Annual
Youth	$240	$288
Adult	$480	$576
Household	$960	$1,152
Senior	$300	$360
Senior +1	$360	$432

- Fees are for drop-in use of all areas of the center.
- Membership rates include basic fitness class and childcare/watch services.
- 20% differential between Resident & Non-Resident Rates
- 926 resident passes sold in option #2, which equates to a 2.35% household penetration rate.
- 205 non-resident passes.

Option #2 – 5-Year Cost Recovery Projection

Category	Year 1	Year 2	Year 3	Year 4	Year 5
Expenses	$2,587,005	$2,612,875	$2,691,262	$2,772,000	$2,855,160
Revenues	$1,172,520	$1,231,146	$1,292,703	$1,331,484	$1,371,429
Difference	($1,414,485)	($1,381,729)	($1,398,558)	($1,440,515)	($1,483,731)
Cost Recovery	45.3%	47.1%	48.0%	48.0%	48.0%
Cap. Invest.	$100,000	$200,000	$300,000	$400,000	$500,000

Capital Improvement line item is cumulative, with $100,000 allocated annually.

Option #3

Daily Admission:

	Resident	Non-Resident
Under 2	Free	Free
Youth (2-17)	$12.00	$15.00
Adult	$14.00	$17.00
Senior (65+)	$12.00	$15.00

Membership Detail:

	Resident Annual	Non-Resident Annual
Youth	$420	$504
Adult	$660	$792
Household	$1,140	$1,368
Senior	$480	$576
Senior +1	$540	$648

- Fees are for drop-in use of all areas of the center (aquatics and dry-side amenities).
- Membership rates include basic fitness class and childcare/watch services.
- 20% differential between Resident & Non-Resident Rates
- 1,450 resident passes sold in option #3, which equates to a 3.68% household penetration rate.
- 365 non-resident passes.

Option #3 – 5-Year Cost Recovery Projection

Category	Year 1	Year 2	Year 3	Year 4	Year 5
Expenses	$3,997,032	$4,037,002	$4,158,112	$4,282,856	$4,411,341
Revenues	$2,480,790	$2,654,445	$2,787,168	$2,870,783	$2,956,906
Difference	($1,516,242)	($1,382,557)	($1,370,945)	($1,412,073)	($1,454,435)
Cost Recovery	62.1%	65.8%	67.0%	67.0%	67.0%
Cap. Invest.	$150,000	$300,000	$450,000	$600,000	$750,000

Capital Improvement line item is cumulative, with $150,000 allocated annually.

Rental rate and program fees have been vetted with the City or are reflective of current/planned rate structure.

Rental Rates

- 25Y Lap Lane $25.00/hr
- Therapy Rental $75.00/hr
- Leisure Pool $600/hr
- Gymnasium $45.00/hr
- Community Rooms $25.00/hr

Aquatic Group Exercise[5]

- $65 per month for drop-in access

Swim Lessons

- $95 per session, 8, 35-minute classes per session

Private Swim Lessons

- $150 per session, 4, 30-minute classes per session

Semi-Private Swim Lessons

- $195 per session, 4, 30-minute classes per session

Birthday Parties

- $350 per party, 2 hour guided party

Dive-In Movie

- $5.00 per attendee

Little Swimmers

- $5.00 per attendee

Group Exercise Dry-Side[6]

- Included in Membership

Personal Training

- $65 per session

Camp Programs

- $175 per week

Enrichment Program

- $75 per session

[5] Aquatic group exercise classes would not be included in membership.
[6] Dry Side Group Exercise and Child Care would be included in membership.

STATION 10
ENGINEERING
CIVIL SITE DESIGN
PO Box 171
Edmonds, WA 98020
206.419.0873

Memo

To: Chris Roberts, Opsis Architecture

From: Steve Hatzenbeler, P.E.

Date: September 15, 2022

Re: Kirkland RAFS Civil Site Assessment

This memo summarizes our findings to date regarding the existing conditions at the four sites under consideration for new Kirkland Community/Recreation/Aquatics Centers. The four sites are the North Kirkland Community Center Park, the Houghton Park and Ride, Peter Kirk Park, and Juanita Beach Park.

North Kirkland Community Center Park

Water (Northshore Utility District)

Existing Infrastructure Nearby:	6" CI in 103rd Ave NE; 8" DI on site west of bldg, from NE 124th St; 12" DI in NE 124th St
Existing Connections:	4" DI fire line on west side; 2" irrig off 103rd Ave NE; 1" possibly dom water svc off 103rd Ave NE

Sewer (Northshore Utility District)

Existing Infrastructure Nearby:	8" conc pipe on south edge of NE 124th St; 8" conc pipe in 103rd Ave NE
Existing Connections:	6" on south side of bldg, to 103rd Ave NE

Stormwater (City of Kirkland)

Existing Infrastructure Nearby:	12" "Drainage Concern" Line in 103rd Ave NE; 18" CPEP in NE 124th St; drainage ditch (identified as a conveyance ditch and not a stream in the Kirkland GIS) along the west property edge
Existing Connections:	6" from CB in parking lot appears to drain west to the ditch along the west property edge. CBs in 103rd Ave NE connect to main line in 103rd Ave NE.
Stormwater Mitigation:	Level 2 Flow Control (forested pre-developed condition) and Flow Control BMPs

Electrical/Communications

Appears to be underground (no overhead wires).

Right of Way (City of Kirkland)

Existing Conditions:	103rd Ave NE:	Curb, gutter, sidewalk on west side. Curb, gutter on east side. One traffic lane each direction, widening to 3 lanes at the intersection for left turn lane. Right of way is narrow: southern 1/3 is only 30 ft, northern 1/3 only 50 ft. Portion of the sidewalk in the southern 1/3 appears to be on private property.
	NE 124th St:	Curb, gutter, sidewalk on both sides. Two traffic lanes each direction, plus center turn lane. Right of way width +/-84 ft; appears to be narrower here than several other properties nearby, so a right of way dedication may be required.

Grading

Existing Conditions: Site is mostly below the level of both adjacent streets, with considerable fall of approximately 30 ft from the streets down to the drainage ditch. Seems to lend itself to a building with a daylight basement facing west.

Houghton Park & Ride Site

Water (City of Kirkland)

Existing Infrastructure Nearby:	8" DI water main in 116th Ave NE; 8" AC water main in NE 70th Place (not connected to the main in 116th Ave NE)
Existing Connections:	No apparent connections to on-site facilities

Sewer (City of Kirkland)

Existing Infrastructure Nearby:	8" conc pipe in NE 70th St right of way; 8" conc pipe in 116th Ave NE; 8" AC pipe continues west across I-405 right of way
Existing Connections:	No apparent connections to on-site facilities

Stormwater (City of Kirkland)

Existing Infrastructure Nearby:	Stormwater pond at north end of site (not well maintained, with vegetation overgrowth); At least 2, 12" CMP pipes come off the park & ride lot; 12" CMP SD main line in 116th Ave NE; 18" CMP SD main line in NE 70th Place. The SD main lines in 116th Ave NE and NE 70th Place both appear to drain to the pond at the north end of the property.
Existing Connections:	At least 2, 12" CMP pipes come off the parking lot, connecting to SD main line in 116th Ave NE
Stormwater Mitigation:	Level 2 Flow Control (forested pre-developed condition) and Flow Control BMPs

Electrical/Communications

Appears to be underground (no overhead wires).

Right of Way (City of Kirkland)

Existing Conditions:	116th Ave NE:	Curb, gutter, sidewalk on project (east) side. Width varies from 3 lanes at the south, to 5 lanes north of the I-405 onramp traffic signal, to 4 lanes at the intersection w/ NE 70th Place.
	NE 70th Place:	Curb, gutter, sidewalk both sides. One traffic lane each direction plus a center turn lane, and bike lane each side. Right of way width +/-64 ft.
	NE 70th St:	Appears the 40-ft right of way still exists and cuts across the middle of the site.
	Other:	Another 60-ft right of way appears to cross the south end of the site. Other rights of way appear to wrap around the perimeter of the site.

Grading

Existing Conditions: Site slopes down from southeast to northwest, getting progressively steeper toward the northwest corner. There is a grade drop of over 30 ft. A building with a north/south oriented axis may need to be stepped or have a partial basement.

Peter Kirk Park

Water (City of Kirkland)

Existing Infrastructure Nearby:	12" DI water main in Kirkland Ave; 8" AC water line on-site serving FH just NE of the Peter Kirk Pool
Existing Connections:	Appears to be a service connection (size unknown) from Kirkland Ave at the SE corner of the pool building

Sewer (City of Kirkland)

Existing Infrastructure Nearby:	6" PVC north of pool, continues west and ties into 8" PVC, over to 10" PVC in 3rd St; Also 8" PVC and 8" conc pipe in Kirkland Ave
Existing Connections:	Multiple

Stormwater (City of Kirkland)

Existing Infrastructure Nearby:	24" conc SD main line in Kirkland Ave; Various on-site SD lines including 18" PVC along west edge of pool, other 6", 8", and 12" pipes originating on-site and flowing north.
Existing Connections:	Most on-site improvements appear to connect to the on-site 6", 8", 12", and 18" pipes, draining across the site to Central Way at the north, or to 3rd St at the west.
Stormwater Mitigation:	Level 1 Flow Control (existing conditions) and Flow Control BMPs

Electrical/Communications

Appears to be underground (no overhead wires).

Right of Way (City of Kirkland)

Existing Conditions:	Kirkland Ave:	Curb, gutter, sidewalk w/ street tree pits; One traffic lane each direction w/ bike lanes and parking both sides Right of way width +/-60 ft.
	3rd Street:	Curb, gutter, sidewalk w/ planter strip both sides. Two traffic lanes (w/ left turn lane) southbound; one wide lane northbound. Right of way width +/-30 ft and it appears a large percentage of the road is in an easement on private property for the library.

Grading

Existing Conditions: South edge of the site is relatively level with the street, and steps down roughly 15 ft to the north into the baseball field. A building with a daylight basement facing north may be a good fit here.

Juanita Beach Park

Water (Northshore Utility District)

Existing Infrastructure Nearby:	8" DI in 97th Ave NE; 12" DI in NE Juanita Dr
Existing Connections:	1" @ SE prop corner near pkg lot; 2" irrig of NE Juanita Dr

Sewer (Northshore Utility District)

Existing Infrastructure Nearby:	8" conc pipe in 97th Ave NE
Existing Connections:	6" SSS to ex bldg on site, connected to 8" SS in 97th Ave NE

Stormwater (City of Kirkland)

Existing Infrastructure Nearby:	12" PVC SD main in 97th Ave NE; 12" PE SD main in Juanita Drive
Existing Connections:	No documented connections to on-site facilities
Stormwater Mitigation:	Level 2 Flow Control (forested pre-developed condition) and Flow Control BMPs

Electrical/Communications

Appears to be underground (no overhead wires), except for an overhead service to the on-site building.

Right of Way (City of Kirkland)

Existing Conditions:	97th Ave NE:	Curb, gutter, sidewalk w/ tree pits east side of street. No improvements on most of west side; limited curb and gutter near Juanita Dr intersection. One traffic lane each direction, plus parking lane on east side. Right of way width +/-60 ft.
	Juanita Dr:	Curb, gutter, sidewalk, and planter strip both sides. One traffic lane each direction plus vegetated median, which transitions to a left turn lane at the intersection. Bike lane each side. Right of way width +/-60 ft.

Grading

Existing Conditions: Site has a relatively uniform and gentle slope down from northeast to southwest, with a grade drop of approximately 10 ft.

GeoEngineers

17425 NE Union Hill Road, Suite 250, Redmond, WA 98052 Telephone: 425.861.6000, Fax: 425.861.6050 www.geoengineers.com

Memorandum

To:	Chris Roberts – Opsis Architecture
From:	Carson Cheung, PE and Morgan A. McArthur, PE
Date:	September 21, 2022
File:	0231-159-00
Subject:	Preliminary Geotechnical Findings City of Kirkland Recreation and Aquatics Centers

INTRODUCTION AND PURPOSE

This memorandum transmits the results of our geotechnical feasibility evaluation and preliminary geotechnical findings for the City of Kirkland Recreation and Aquatics Centers. We performed a site visit to each of the four proposed sites, and reviewed existing information, including geologic maps, previous geotechnical reports, available nearby well logs, and geologic hazard maps. Our services were provided in accordance with our signed agreement dated August 22, 2022.

The following sections summarize our findings for each of the four proposed sites. This information is preliminary in nature and is not sufficient for design of proposed facilities. No project-specific subsurface explorations were advanced as part of this evaluation. Additional geotechnical studies, including subsurface explorations, will be required to facilitate design and construction. The findings and considerations presented herein are subject to change, depending on the results of the design geotechnical studies.

HOUGHTON PARK AND RIDE

- **Site address:** 7024 116th Avenue NE, Kirkland, Washington 98033
- **Area Geology:** Published geologic information for the site vicinity includes a United States Geological Survey (USGS) Geologic Map of the Kirkland Quadrangle, Washington (Minard 1983) and Geologic Map of Surficial Deposits in the Seattle 30' x 60' Quadrangle, Washington (Yount, Minard, and Dembroff 1993). The mapped surface geologic unit in the site vicinity includes advance outwash (Qva). Advance outwash generally consists of moderately- to well-sorted, stratified sand and gravel with varying amounts of silt and clay in a dense nature.
- **Subsurface Conditions:** Based on our review of limited geotechnical subsurface exploration information obtained from the Washington State Department of Natural Resource (WA DNR), soils encountered in the site vicinity generally consists of relatively shallow fill overlying native, very dense sand with variable silt and gravel content. These soils generally become saturated at about 7 to 22 feet blow existing site grades. Hard silt with variable sand content was encountered below the native sand at about 25 feet below existing site grades. A landfill (Houghton Landfill) is located approximately 325 feet southeast of the site.
- **Groundwater Conditions:** Nearby exploration logs indicate that groundwater was encountered at about 6 to 20 feet below existing site grades at the time of exploration. No well logs and information are available in the immediate site vicinity from the Department of Ecology (WA DOE).

- **Liquefaction Potential:** Based on our review of the City of Kirkland Liquefaction Potential Map (2020), the site is not mapped as having liquefaction potential.
- **Landslide Susceptibility:** Based on our review of the City of Kirkland Landslide Susceptibility Map (2020), portions of the site (mainly in the northwest corner and along the west portion of the site) are mapped as having moderate and high landslide susceptibility. These designations are likely associated with the steepness and/or overall height of the localized slopes and adjacent slopes to the property. Most of these areas are either developed or covered with vegetation, and we do not anticipate these areas will adversely impact the development.
- **Topographic Information:** Based on our review of the City of Kirkland Topographic Survey, existing site grades range from approximate Elevation 380 to 410 feet. The site generally slopes down from the east to the west and northwest.
- **Preliminary Geotechnical Findings and Considerations:** Based on our review of very limited geotechnical information, we anticipate the proposed building may be supported on conventional spread or mat foundations on the dense to very dense advance outwash deposits. We recommend a detailed field exploration program to further identity and evaluate the nature and extent of unsuitable surficial soils, groundwater conditions, and the depth to soils suitable for foundation support. The native outwash deposits are likely to be suitable for reuse as structural fill, provided that they meet the project plans and specifications. The upper portions of on-site surficial soils may contain a sufficient percentage of fines content (silt/clay) to be highly sensitive to changes in moisture content. Because portions of the site are mapped as having moderate and high landslide susceptibility, a quantitative slope stability analysis may be required to determine necessary setback for proposed structures in the slope vicinity per City of Kirkland Municipal Code.

  We anticipate that the proposed buildings will be constructed at-grade, and the pool will be constructed approximately 20 feet below grade. For planning purposes, temporary unsupported cut slopes more than 4 feet high may be inclined at 1½H:1V (horizontal to vertical) maximum steepness. Flatter slopes may be necessary if seepage is present on the face of the cut slopes or if localized sloughing occurs. Soil nail walls or solider pile and tieback walls may also be considered for temporary excavation support. If excavation occurs above the regional groundwater table, groundwater seepage encountered during excavation may be handled adequately by dewatering sumps and pumps. However, if excavation occurs below the regional groundwater table and/or if excessive groundwater seepage is encountered during excavation, more extensive dewatering techniques such as deep pumping wells or vacuum wellpoints may be needed. In addition, if the proposed structures extend below the regional groundwater table, they will need to either be designed to resist hydrostatic pressure or exercise permanent dewatering, if approved by City of Kirkland.

NORTH KIRKLAND COMMUNITY CENTER PARK

- **Site address:** 12421 103rd Avenue NE, Kirkland, Washington 98034
- **Area Geology:** Published geologic information for the site vicinity includes a USGS Geologic Map of the Kirkland Quadrangle, Washington (Minard 1983) and Geologic Map of Surficial Deposits in the Seattle 30’ x 60’ Quadrangle, Washington (Yount, Minard, and Dembroff 1993). The mapped surface geologic in the site vicinity includes recessional outwash (Qvr), advance outwash (Qva) and transitional beds (Qtb).

Recessional outwash generally consists of moderately sorted to well sorted, stratified sand and gravel with varying amounts of silty sand and silt in a loose to dense nature. Advance outwash generally consists of moderately- to well-sorted, stratified sand and gravel with varying amounts of silt and clay in a medium dense to dense nature. Transitional beds generally consist of massive to bedded clay, silt and fine to very fine sand that were mostly deposited in lakes, distant from the ice front, and in fluvial systems prior to the advance of the ice. Peaty sand and gravel may occur in the lower part. The deposits have been compacted by the overriding Vashon glacier and are therefore typically dense to very dense. The transitional beds may be underlain by older glacial sediments deposited by pre-Fraser glacial episodes.

- **Subsurface Conditions:** Based on our review of limited geotechnical subsurface exploration information obtained from the WA DNR, soils encountered in the site vicinity generally consists of shallow fill overlying native stiff silt and clay with variable sand content, and loose to dense sand and gravel with variable silt content. These soils become saturated at about 5 feet below existing site grades.
- **Groundwater Conditions:** Nearby exploration logs indicate that groundwater was encountered at about 5 feet below existing site grades at the time of exploration. No well logs and information are available in the immediate site vicinity from the WA DOE.
- **Liquefaction Potential:** Based on our review of the City of Kirkland Liquefaction Potential Map (2020), the entire site is mapped as having a medium liquefaction potential.
- **Landslide Susceptibility:** Based on our review of the City of Kirkland Landslide Susceptibility Map (2020), portions of the site are mapped as having moderate and high landslide susceptibility. These designations are likely associated with the steepness and/or overall height of the localized slopes and adjacent slopes to the property. Most of these areas are either developed or covered with vegetation, and we do not anticipate these areas will adversely impact the development.
- **Topographic Information:** Based on our review of the City of Kirkland Topographic Survey, existing site grades range from approximate Elevation 96 to 160 feet. The site generally slopes down from the southeast to the west and northwest.
- **Preliminary Geotechnical Findings and Considerations:** Based on our review of very limited geotechnical information, potentially liquefiable soils may be present at the site. The site may be designated as seismic Site Class F per American Society of Civil Engineers (ASCE) 7-16, and ground improvement or deep foundations may be needed if potentially liquefiable soils are found to be present. Shallow conventional spread or mat foundations bearing on improved ground may be feasible such that: (1) differential settlement is compliant with provisions in ASCE 7-16 and (2) an adequate factor of safety against bearing failure is achieved for the post seismic condition where a weaker, liquefied soil layer underlies the non-liquefiable soil/improved ground.

  Ground improvement methods such as densification by means of stone columns or rammed aggregate piers may be feasible at the site, depending on percentage of fines of the potentially liquefiable soils. These ground improvement methods are not feasible and effective in soils with a high percentage of fines content. Other ground improvement methods may include augercast grout columns or rigid inclusions. Deep foundations may include augercast piles or drilled shafts, or driven piles. It should be noted that liquefiable soils can impose downdrag loads on deep foundations, which may significantly reduce the axial load capacity, depending on the thickness of potentially liquefiable soils.

We recommend a detailed field exploration program to further identity and evaluate the nature and extent of unsuitable surficial soils, the nature, thickness and presence of potentially liquefiable soils, groundwater conditions, and the depth to soils suitable for foundation support. Because the site is mapped as having liquefaction susceptibility, we anticipate deep subsurface explorations such as borings or cone penetration tests, and quantitative liquefaction analyses will be required to address liquefaction per City of Kirkland Municipal Code.

The native outwash deposits are expected to be suitable for reuse as structural fill, provided they meet the project plans and specifications. The upper portions of on-site surficial soils and silty and clayey soils (transitional bed deposits) may contain a sufficient percentage of fines content (silt/clay) to be highly sensitive to changes in moisture content.

We anticipate that the proposed buildings will be constructed at-grade, and the pool will be constructed approximately 20 feet below grade. For planning purposes, temporary unsupported cut slopes more than 4 feet high may be inclined at 1½H:1V maximum steepness. Flatter slopes may be necessary if seepage is present on the face of the cut slopes or if localized sloughing occurs. Soil nail walls or solider pile and tieback walls may also be considered for temporary excavation support. If excavation occurs above the regional groundwater table, groundwater seepage encountered during excavation may be handled adequately by dewatering sumps and pumps. However, if excavation occurs below the regional groundwater table and/or if excessive groundwater seepage is encountered during excavation, more extensive dewatering techniques such as deep pumping wells or vacuum wellpoints may be needed. In addition, if the proposed structures extend below the regional groundwater table, they will need to either be designed to resist hydrostatic pressure or exercise permanent dewatering, if approved by City of Kirkland.

PETER KIRK PARK

- **Site address:** 352 Kirkland Avenue, Kirkland, Washington 98033
- **Area Geology:** Published geologic information for the site vicinity includes a USGS Geologic Map of the Kirkland Quadrangle, Washington (Minard 1983) and Geologic Map of Surficial Deposits in the Seattle 30’ x 60’ Quadrangle, Washington (Yount, Minard, and Dembroff 1993). The mapped surface geologic unit at the site includes transitional beds (Qtb), and mapped surface geologic units in the site vicinity include Vashon glacial till (Qvt), advance outwash (Qva), and modified land (ml). Glacial till generally consists of a non-sorted, non-stratified mixture of clay, silt, sand, and gravel with larger constituents up to the size of boulders. The glacial till is very dense and relatively impermeable but can contain localized zones of interbedded stratified sand and gravel. Advance outwash generally consists of moderately- to well-sorted, stratified sand and gravel with varying amounts of silt and clay in a medium dense to dense nature. Transitional beds generally consist of massive to bedded clay, silt and fine to very fine sand that were mostly deposited in lakes, distant from the ice front, and in fluvial systems prior to the advance of the ice. Peaty sand and gravel may occur in the lower part. The deposits have been compacted by the overriding Vashon glacier and have been oxidized. The transitional beds may be underlain by older glacial sediments deposited by pre-Fraser glacial episodes. Modified land generally refers to land areas altered by man for construction or development purposes that involve cutting, filling, leveling, and constructing at engineering projects.
- **Subsurface Conditions:** Based on our review of limited geotechnical boring information obtained from the WA DNR, soils encountered in the site vicinity generally consists of variable thickness of fill and high

compressible peat overlying loose to medium dense sand with variable silt and gravel content and soft to stiff silt with variable sand and gravel content. The thickness of fill ranges from approximately 4 to 14 feet, and the thickness of peat ranges from approximately 2 to 7 feet. The sand generally becomes medium dense to dense, and the silt generally becomes stiff to hard at approximately 15 to 22 feet below existing site grades.

- **Groundwater Conditions:** Nearby exploration logs indicate that groundwater was encountered at about 4 to 15 feet below existing site grades at the time of exploration. Well logs and information in the immediate site vicinity obtained from the WA DOE generally confirm the subsurface and groundwater conditions at the site. Groundwater was generally encountered at about 2 to 8 feet below existing site grades in the WA DOE wells. The north-central portion of the site is mapped as Federal Emergency Management Agency (FEMA) 100-year floodplain by the King County iMap and a regulatory floodplain by the City of Kirkland Interactive Map. A stream is mapped along Central Way (north of the site) and Kirkland Avenue (south of the site) by the City of Kirkland Interactive Map.
- **Liquefaction Potential:** Based on our review of the City of Kirkland Liquefaction Potential Map (2020), approximately the west two-thirds of the site is mapped as having a medium liquefaction potential. The east approximate one-third is mapped as having zones of medium and high liquefaction potential.
- **Landslide Susceptibility:** Based on our review of the City of Kirkland Landslide Susceptibility Map (2020), portions of the site (mainly in the southwest quadrant and west portion of the site) are mapped as having moderate and high landslide susceptibility. These designations are likely associated with the steepness and/or overall height of the localized slopes. Most of these areas are either developed or covered with vegetation, and we do not anticipate these areas will adversely impact the development.
- **Topographic Information:** Based on our review of the City of Kirkland Topographic Survey, existing site grades range from approximate Elevation 32 to 58 feet. The site generally slopes down from the east and southeast to the north and west.
- **Preliminary Geotechnical Findings and Considerations:** Based on our review of very limited geotechnical information, potentially liquefiable soils may be present at the site. The site may be designated as seismic Site Class F per ASCE 7-16, and ground improvement or deep foundations may be needed if potentially liquefiable soils are found to be present. In addition, highly compressible peat may be present at the site.

  We recommend a detailed field exploration program to further identity and evaluate the nature, thickness, extent and presence of unsuitable surficial soils, potentially liquefiable soils and/or highly compressible peat, groundwater conditions, and the depth to soils suitable for foundation support. Because the site is mapped as having liquefaction susceptibility, we anticipate deep subsurface explorations such as borings or cone penetration tests, and quantitative liquefaction analyses will be required to address liquefaction per City of Kirkland Municipal Code.

  Ground improvement methods such as densification by means of stone columns or rammed aggregate piers may not be feasible and effective given the high percentage of fines content in underlying peat and silty soils. Other ground improvement methods may include augercast grout columns or rigid inclusions. Deep foundations may include augercast piles or drilled shafts, or driven piles. It should be noted that liquefiable soils can impose downdrag loads on deep foundations, which may significantly reduce the axial load capacity, depending on the thickness of potentially liquefiable soils. Installation of augercast piles or drilled piles also produces minimal ground vibrations, which is beneficial given the close proximity of adjacent buildings and other improvements.

Groundwater seepage encountered during excavation may be handled adequately by dewatering sumps and pumps, if completed in a manner that does not cause adverse impacts to adjacent buildings and other improvements. Settlement of the adjacent buildings and other improvements caused by increases in effective stress as groundwater levels are lowered by temporary dewatering is possible if drawdown extends significantly offsite and affects the groundwater levels.

We anticipate that the proposed buildings will be constructed at-grade, and the pool will be constructed approximately 20 feet below grade. For planning purposes, temporary unsupported cut slopes more than 4 feet high may be inclined at 1½H:1V maximum steepness. Flatter slopes may be necessary if seepage is present on the face of the cut slopes or if localized sloughing occurs. If below-grade configuration is considered, the risk of potential settlement to adjacent buildings and other improvements from temporary dewatering and potential for offsite drawdown is considered moderate to high if the project were to be completed using conventional temporary shoring, such as soldier pile and tieback walls, given the shallow groundwater table anticipated at the site. Given this risk, we recommend that temporary excavation support be completed using a diaphragm-type shoring system, such as sheet piles, secant piles or cutter soil-mixed walls (CSM walls). Diaphragm-type temporary shoring systems are relatively impermeable and where the walls are embedded in low permeability silty and/or clayey soils, cutoff for horizontal groundwater flow can be achieved. This condition can reduce the drawdown of groundwater outside the site footprint and can reduce the risk of settlement of adjacent improvements. We recommend that a settlement monitoring program be implemented to confirm that dewatering induced settlements do not adversely impact adjacent buildings and other improvements. In addition, if the proposed structures extend below the regional groundwater table, they will need to either be designed to resist hydrostatic pressure or exercise permanent dewatering, if approved by City of Kirkland.

The native on-site surficial soils may contain a sufficient percentage of fines content (silt/clay) to be highly sensitive to changes in moisture content, and a sufficient percent of organic content which may not meet the project plans and specifications.

JUANITA BEACH PARK

- **Site address:** 9703 NE Juanita Drive, Kirkland, Washington 98034
- **Area Geology:** Published geologic information for the site vicinity includes a USGS Geologic Map of the Kirkland Quadrangle, Washington (Minard 1983) and Geologic Map of Surficial Deposits in the Seattle 30’ x 60’ Quadrangle, Washington (Yount, Minard, and Dembroff 1993). The mapped surface geologic unit at the site includes recessional outwash (Qvr). Mapped surface geologic unit in the site vicinity also include advance outwash (Qva). Recessional outwash generally consists of moderately sorted to well sorted, stratified sand and gravel with varying amounts of silty sand and silt in a loose to dense nature. Advance outwash generally consists of moderately- to well-sorted, stratified sand and gravel with varying amounts of silt and clay in a medium dense to dense nature.
- **Subsurface Conditions:** Based on our review of limited geotechnical boring information obtained from the WA DNR, soils encountered in the site vicinity generally consists of relatively shallow fill overlying approximately 3 to 9 feet of loose to medium dense sand with variable silt and gravel content. The loose to medium dense sand was underlain by approximately 5 to 9 feet thick of soft silt and peat. Dense to very dense silty sand with variable silt and gravel content was observe below the soft silt and peat at approximately 18 to 23 feet below existing site grades.

- **Groundwater Conditions:** Nearby exploration logs indicate that groundwater was encountered at about 10 feet below existing site grades at the time of exploration. Well logs and information in the immediate site vicinity obtained from the WA DOE generally confirm the groundwater conditions at the site. Groundwater was generally encountered at about 6 to 8 feet below exiting site grades in the WA DOE wells. A creek (Juanita Creek) runs along the west portions of the site, and is mapped by both the King County iMap and City of Kirkland Interactive Map. Three wetlands are also mapped in the southern portions of the site by the City of Kirkland Interactive Map.
- **Liquefaction Potential:** Based on our review of the City of Kirkland Liquefaction Potential Map (2020), the entire site is mapped as having a high liquefaction potential, with the exception of approximately the northeast quadrant. The northeast quadrant of the site is mapped as having a medium liquefaction potential.
- **Landslide Susceptibility:** Based on our review of the City of Kirkland Landslide Susceptibility Map (2020), portions of the site (mainly along Juanita Creek) are mapped as having moderate and high landslide susceptibility. These designations are likely associated with the steepness and/or overall height of the localized slopes along Juanita Creek. Most of these areas are either developed or covered with vegetation, and we do not anticipate these areas will adversely impact the development.
- **Topographic Information:** Based on our review of the City of Kirkland Topographic Survey, existing site grades range from approximate Elevation 18 to 42 feet. The site generally slopes down from the northeast to the east and the south.
- **Preliminary Geotechnical Findings and Considerations:** Based on our review of very limited geotechnical information, potentially liquefiable soils may be present at the site. The site may be designated as seismic Site Class F per ASCE 7-16, and ground improvement or deep foundations may be needed if potentially liquefiable soils are found to be present. In addition, highly compressible peat may be present at the site.

  We recommend a detailed field exploration program to further identity and evaluate the nature, thickness, extent and presence of unsuitable surficial soils, potentially liquefiable soils and/or highly compressible peat, groundwater conditions, and the depth to soils suitable for foundation support.. Because the site is mapped as having medium liquefaction susceptibility, we anticipate deep subsurface explorations such as borings or cone penetration tests, and quantitative liquefaction analyses will be required to address liquefaction per City of Kirkland Municipal Code.

  Ground improvement methods such as densification by means of stone columns or rammed aggregate piers may not be feasible and effective given the high percentage of fines content in underlying peat and silty soils. Other ground improvement methods may include augercast grout columns or rigid inclusions. Deep foundations may include augercast piles or drilled shafts, or driven piles. It should be noted that liquefiable soils can impose downdrag loads on deep foundations, which may significantly reduce the axial load capacity, depending on the thickness of potentially liquefiable soils. Installation of augercast piles or drilled piles also produces minimal ground vibrations, which is beneficial given the close proximity of adjacent buildings and other improvements.

  Groundwater seepage encountered during excavation may be handled adequately by dewatering sumps and pumps, if completed in a manner that does not cause adverse impacts to adjacent buildings and other improvements. Settlement of the adjacent buildings and other improvements caused by increases in effective stress as groundwater levels are lowered by temporary dewatering is possible if drawdown extends significantly offsite and affects the groundwater levels.

We anticipate that the proposed buildings will be constructed at-grade, and the pool will be constructed approximately 20 feet below grade. For planning purposes, temporary unsupported cut slopes more than 4 feet high may be inclined at 1½H:1V maximum steepness. Flatter slopes may be necessary if seepage is present on the face of the cut slopes or if localized sloughing occurs. If below-grade configuration is considered, the risk of potential settlement to adjacent buildings and other improvements from temporary dewatering and potential for offsite drawdown is considered moderate to high if the project were to be completed using conventional temporary shoring, such as soldier pile and tieback walls, given the shallow groundwater table anticipated at the site. Given this risk, we recommend that temporary excavation support be completed using a diaphragm-type shoring system, such as sheet piles, secant piles or CSM walls. Diaphragm-type temporary shoring systems are relatively impermeable and where the walls are embedded in low permeability silty and/or clayey soils, cutoff for horizontal groundwater flow can be achieved. This condition can reduce the drawdown of groundwater outside the site footprint and can reduce the risk of settlement of adjacent improvements. We recommend that a settlement monitoring program be implemented to confirm that dewatering induced settlements do not adversely impact adjacent buildings and other improvements. In addition, if the proposed structures extend below the regional groundwater table, they will need to either be designed to resist hydrostatic pressure or exercise permanent dewatering, if approved by City of Kirkland.

The native on-site surficial soils may contain a sufficient percentage of fines content (silt/clay) to be highly sensitive to changes in moisture content, and a sufficient percent of organic content which may not meet the project plans and specifications.

LIMITATIONS

We have prepared this report for the exclusive use of Opsis Architecture, LLP and their authorized agents for the City of Kirkland Recreation and Aquatics Centers project in Kirkland, Washington.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

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Please refer to Appendix B for additional information pertaining to use of this report.

Attachments:

Appendix A. Reference Information

Appendix B. Report Limitations and Guidelines for Use

CC:MM:nld

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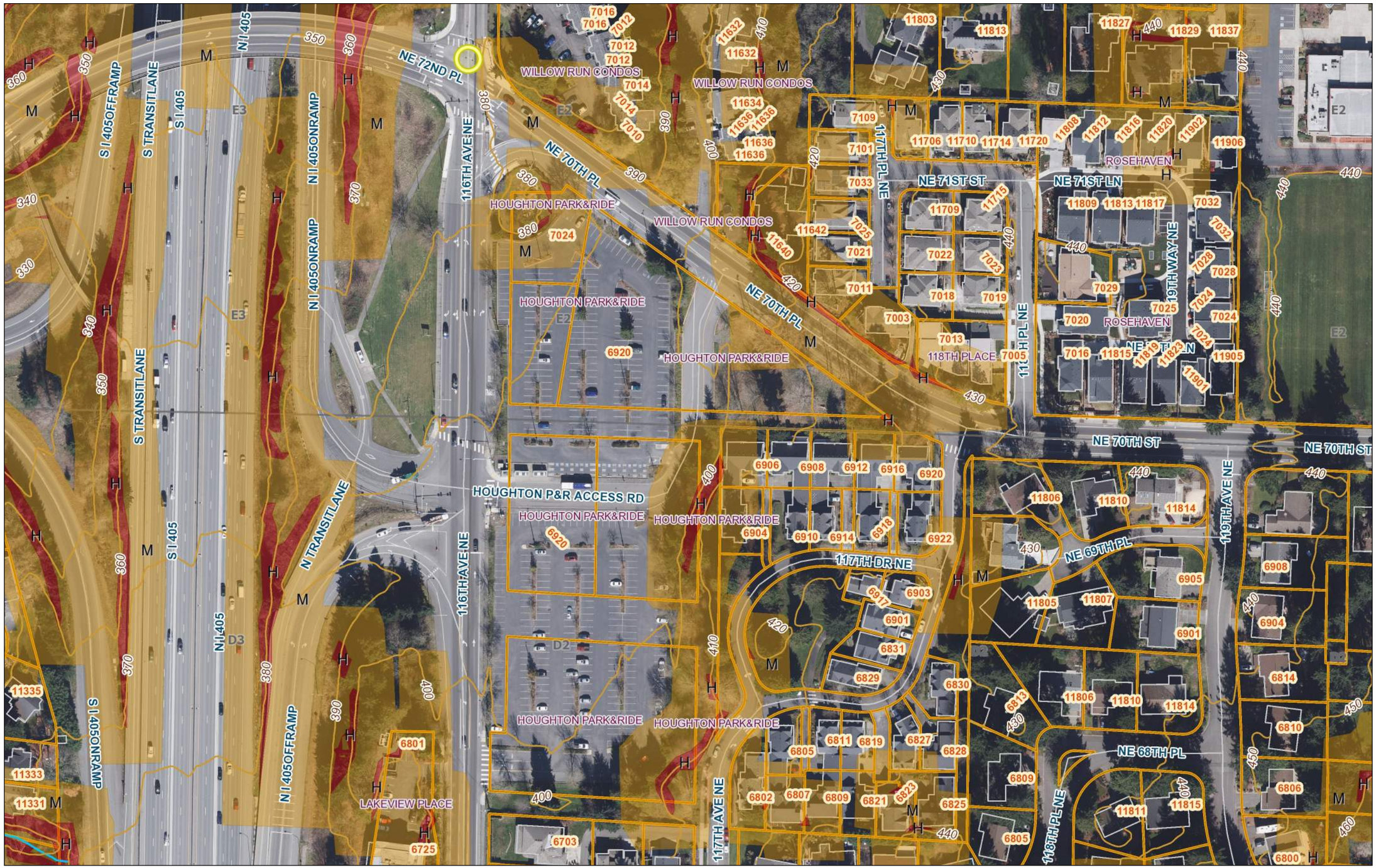
APPENDIX A
Reference Information

APPENDIX A.1
REFERENCE INFORMATION FOR HOUGHTON PARK AND RIDE

Included in this section are City of Kirkland Landslide Susceptibility Map and Liquefaction Susceptibility Map, and exploration logs from previous studies completed in the immediate vicinity of the project site.

City of Kirkland GIS



Legend

- Contours 10 Feet
- Streams
  - Open
  - Pipe
- Landslide
  - Deposit Areas
  - Head Scarps
  - High Susceptibility
  - Moderate Susceptibility
- Wetlands
- Address
- City Limits
- Grid
- QQ Grid
- Regional Rail Corridor
- Cross Kirkland Corridor
- Streets
- Parcels
- Place Names
- Buildings
- Lakes

1: 1,500

0.0 0 0.02 0.0 Miles

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

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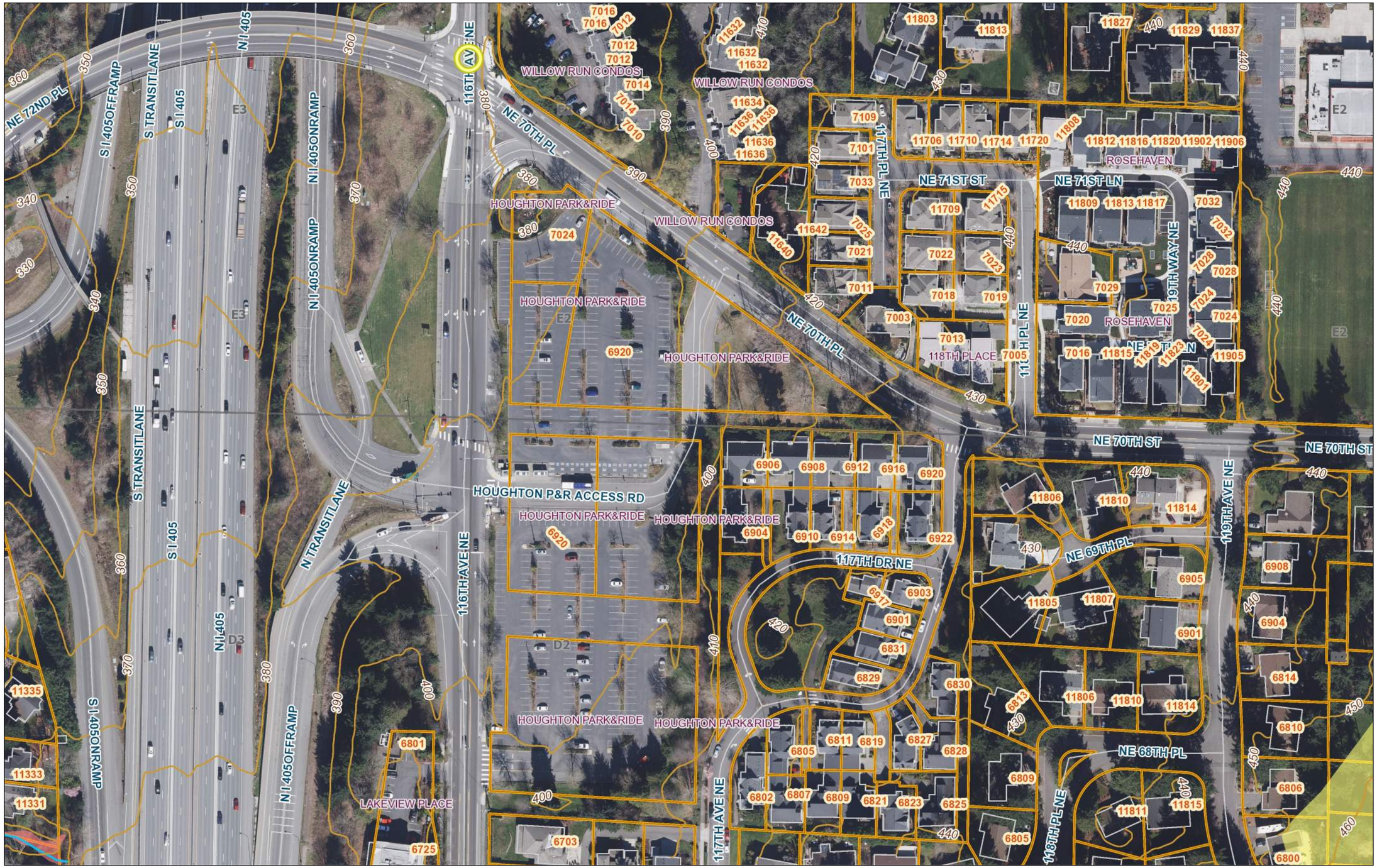
No warranties of any sort, including but not limited to accuracy, fitness, or merchantability, accompany this product.

Notes

This map was automatically generated using Geocortex Essentials.

City of Kirkland GIS



Legend

- Contours 10 Feet
- Streams
  - Open
  - Pipe
- Wetlands
- Liquefaction Potential
  - High
  - Medium or Mixed
- Address
- City Limits
- Grid
- QQ Grid
- Regional Rail Corridor
- Cross Kirkland Corridor
- Streets
- Parcels
- Place Names
- Buildings
- Lakes

1: 1,500

0.0 0 0.02 0.0 Miles

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

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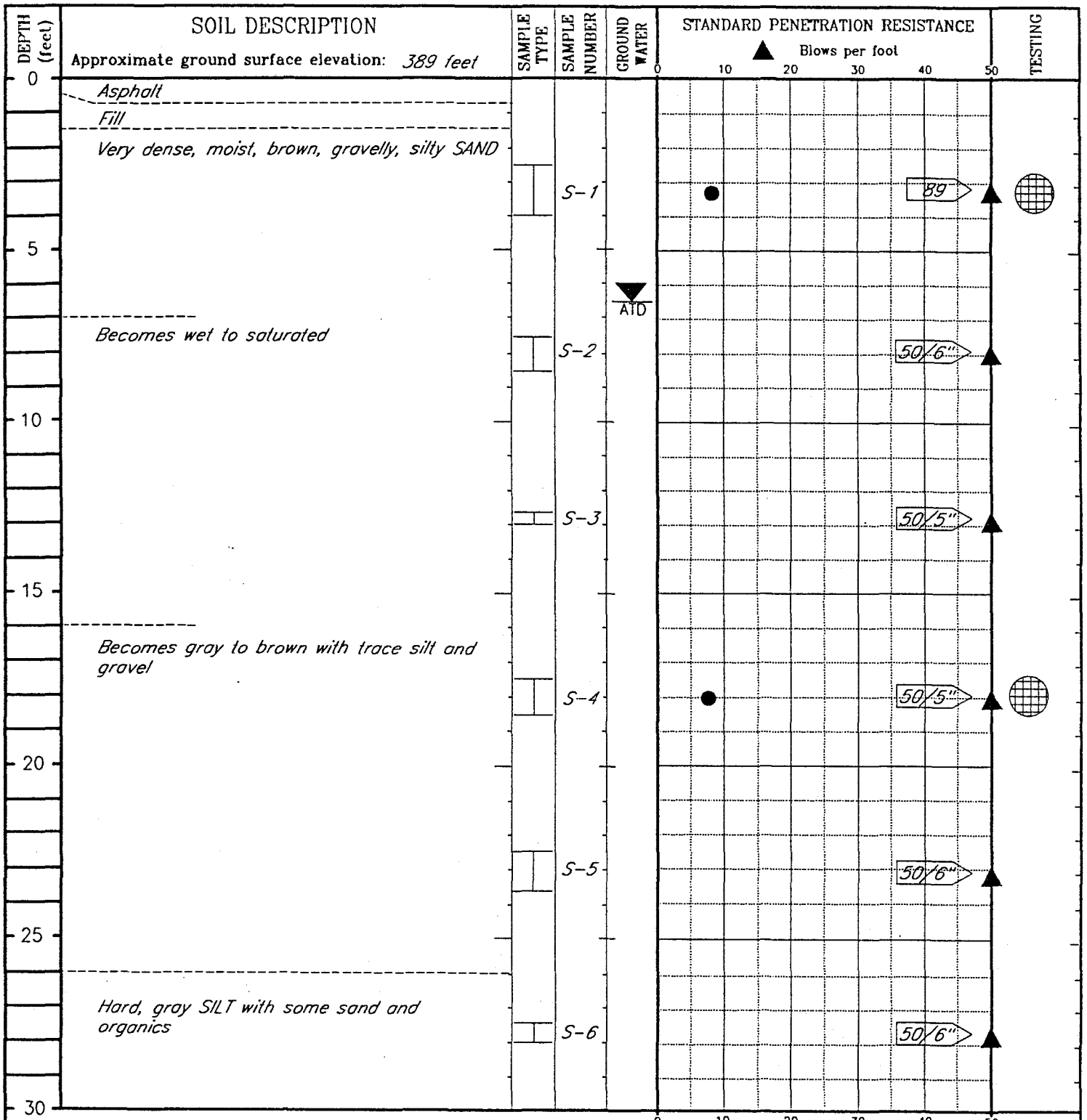
Notes

This map was automatically generated using Geocortex Essentials.

PROJECT *SR-405: Northup to Bothell* W.O. *W 7148-1* BORING NO. *BRZ-39*



LEGEND

- 2-inch OD split spoon sampler
- Sample not recovered
- Grain size analysis
- ATD Groundwater level at time of drilling
- CBR California bearing ratio test

RZA

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started: *12 April 1991* Drilling completed: *12 April 1991* Logged by: *JDC*

PROJECT *SR-405: Northup to Bothell* W.O. *W 7148-1* BORING NO. *BRZ-39*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	STANDARD PENETRATION RESISTANCE (Blows per foot)	TESTING
	Approximate ground surface elevation: *389 feet*				0 10 20 30 40 50	
30	*SILT as above*					
		I	S-7		NP ● 50/6" ▲	⊞
35	*Boring terminated at 33.5 feet*					
40						
45						
50						
55						
60						

0 10 20 30 40 50
MOISTURE CONTENT
Plastic limit — Natural — Liquid limit

LEGEND

I 2-inch OD split spoon sampler

X Sample not recovered

⊞ Grain size analysis

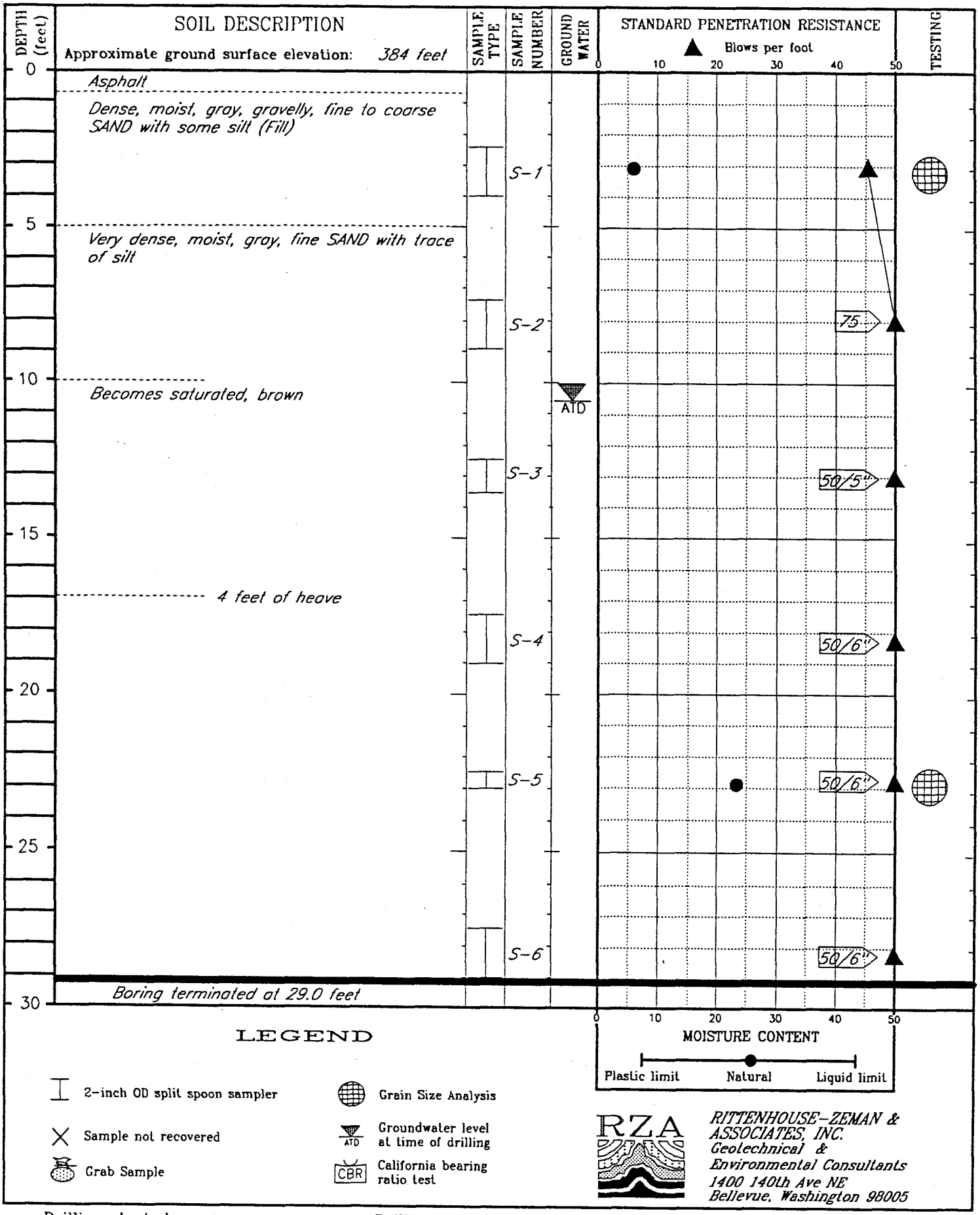
AtD Groundwater level at time of drilling

CBR California bearing ratio test

RZA
RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started: *12 April 1991* Drilling completed: *12 April 1991* Logged by: *JDC*

PROJECT *SR-405: Northup to Bothell* W.O. *W 7148-1* BORING NO. *BRZ-40*



LEGEND

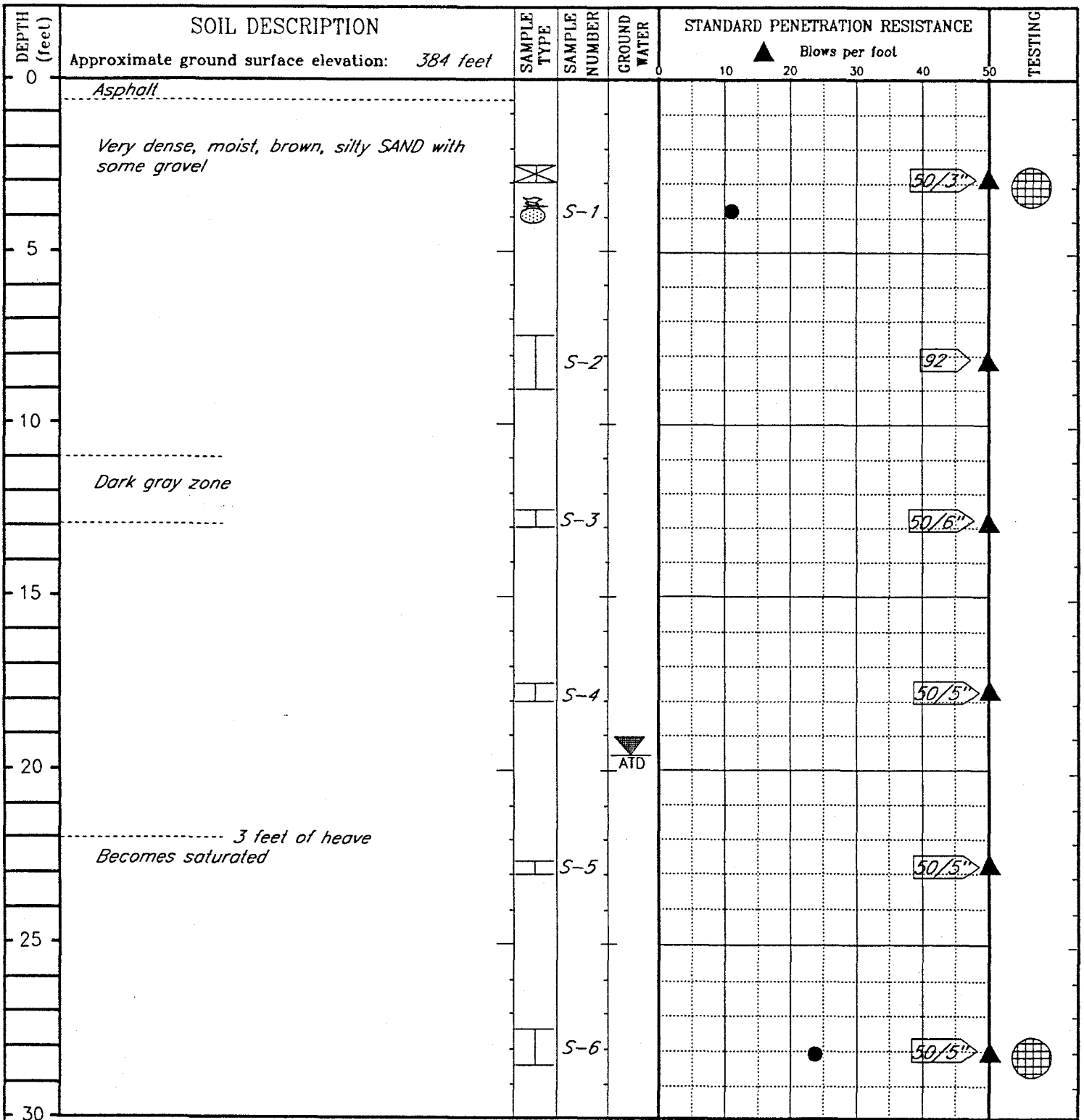
- 2-inch OD split spoon sampler
- Sample not recovered
- Grab Sample
- Grain Size Analysis
- Groundwater level at time of drilling (ATD)
- California bearing ratio test (CBR)

RZA

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started: *12 April 1991* Drilling completed: *12 April 1991* Logged by: *JDC*

PROJECT *SR-405: Northup to Bothell* W.O. *W 7148-1* BORING NO. *BRZ-41*



LEGEND

- 2-inch OD split spoon sampler
- Sample not recovered
- Grab Sample
- Grain Size Analysis
- Groundwater level at time of drilling (ATD)
- California bearing ratio test (CBR)

RZA

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started: *15 April 1991* Drilling completed: *15 April 1991* Logged by: *JDC*

PROJECT *SR-405: Northup to Bothell* W.O. *W 7148-1* BORING NO. *BRZ-41*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	STANDARD PENETRATION RESISTANCE (Blows per foot)	TESTING
	Approximate ground surface elevation: *384 feet*					
30	*SAND as above*					
	Becomes mottled gray	I	S-7		50/4"	
	Boring terminated at 33.3 feet					
35						
40						
45						
50						
55						
60						

0 10 20 30 40 50

MOISTURE CONTENT

Plastic limit — Natural — Liquid limit

LEGEND

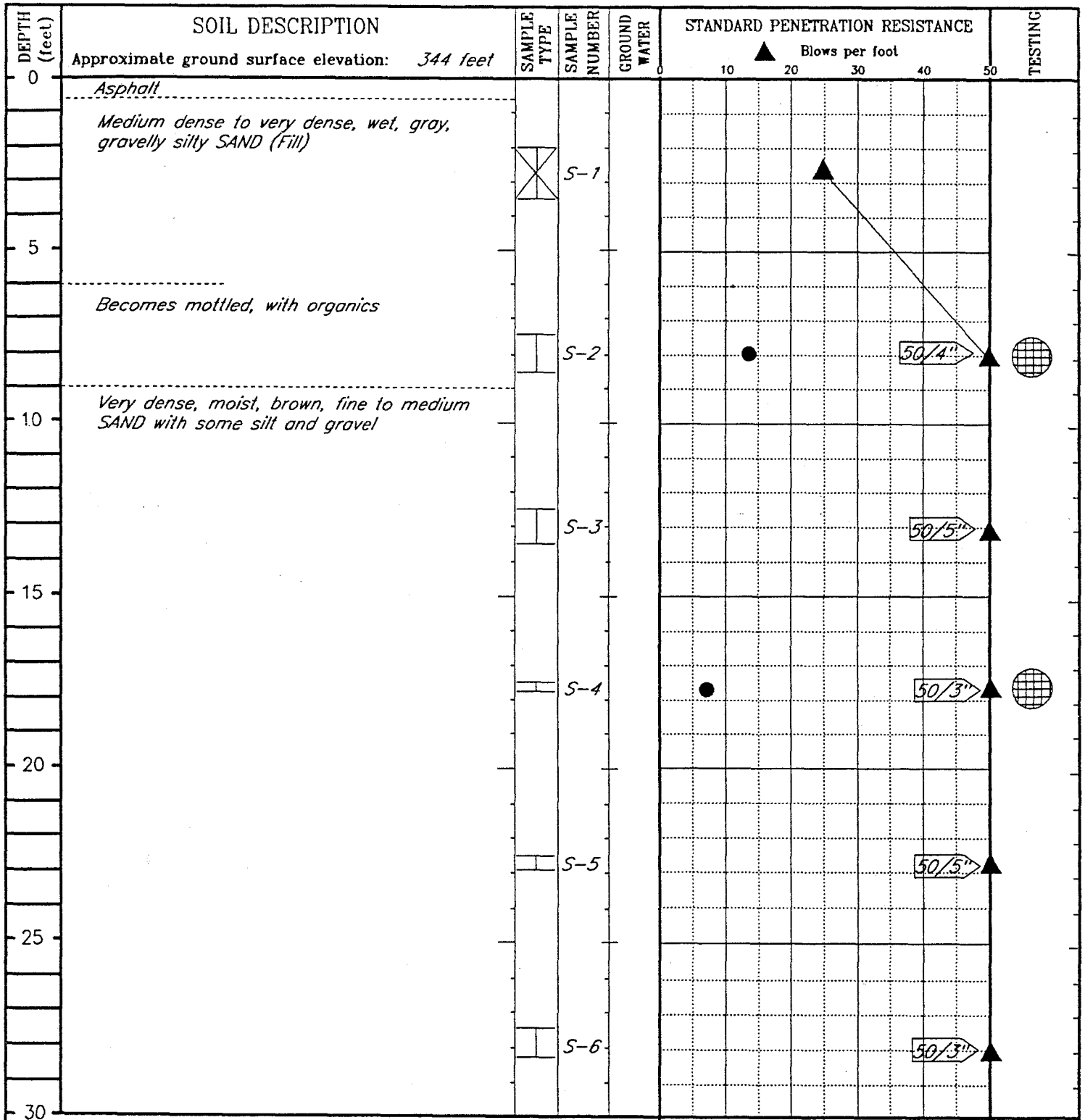
- I — 2-inch OD split spoon sampler
- X — Sample not recovered
- Grab Sample
- Grain Size Analysis
- ATD — Groundwater level at time of drilling
- CBR — California bearing ratio test

RZA

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started: *15 April 1991* Drilling completed: *15 April 1991* Logged by: *JDC*

PROJECT *SR-405: Northup to Bothell* W.O. *W 7148-1* BORING NO. *BRZ-43*



LEGEND

- 2-inch OD split spoon sampler
- Sample not recovered
- Grab Sample
- Grain Size Analysis
- Groundwater level at time of drilling (ATD)

RZA

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started: *15 April 1991* Drilling completed: *15 April 1991* Logged by: *JDC*

PROJECT *SR-405: Northup to Bothell* W.O. *W 7148-1* BORING NO. *BRZ-43*

DEPTH (feet)	SOIL DESCRIPTION Approximate ground surface elevation: *344 feet*	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	STANDARD PENETRATION RESISTANCE Blows per foot 0 10 20 30 40 50	TESTING
30	*SAND as above* --- *Becomes mottled gray*	I	S-7		50/3"	
	Boring terminated at 32.8 feet					
35						
40						
45						
50						
55						
60						

0 10 20 30 40 50
MOISTURE CONTENT
Plastic limit — Natural — Liquid limit

LEGEND

- I — 2-inch OD split spoon sampler
- X — Sample not recovered
- Grab Sample
- Grain Size Analysis
- ATD — Groundwater level at time of drilling

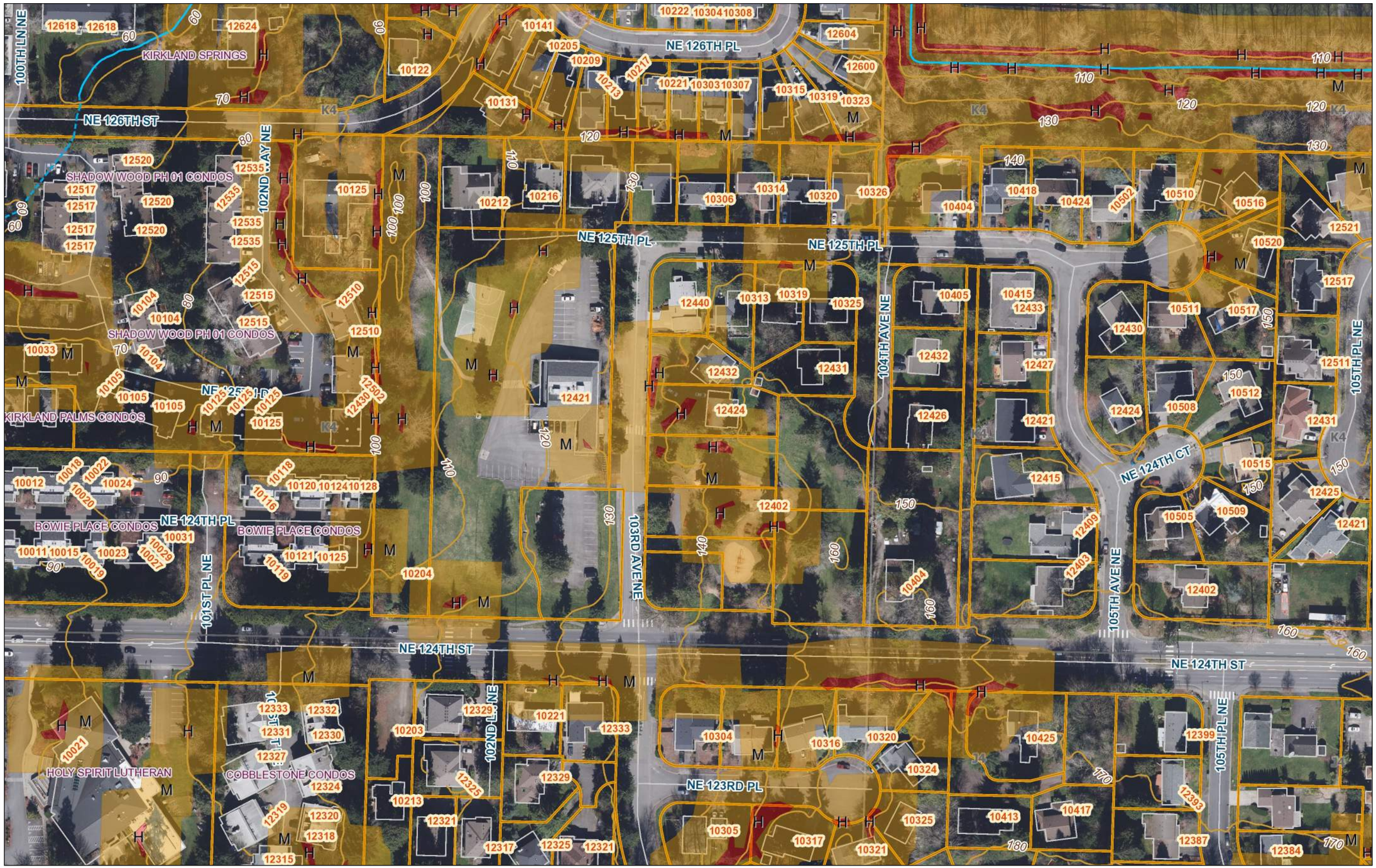
RZA
RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

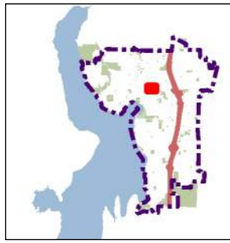
Drilling started: *15 April 1991* Drilling completed: *15 April 1991* Logged by: *JDC*

APPENDIX A.2
REFERENCE INFORMATION FOR NORTH KIRKLAND COMMUNITY CENTER PARK

Included in this section are City of Kirkland Landslide Susceptibility Map and Liquefaction Susceptibility Map, and exploration logs from previous studies completed in the immediate vicinity of the project site.

City of Kirkland GIS





Legend

- Contours 10 Feet
- Streams
  - Open
  - Pipe
- Landslide
  - Deposit Areas
  - Head Scarps
  - High Susceptibility
  - Moderate Susceptibility
- Wetlands
- Address
- City Limits
- Grid
- QQ Grid
- Regional Rail Corridor
- Cross Kirkland Corridor
- Streets
- Parcels
- Place Names
- Buildings
- Lakes

1: 1,500

0.0 0 0.02 0.0 Miles

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

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Notes

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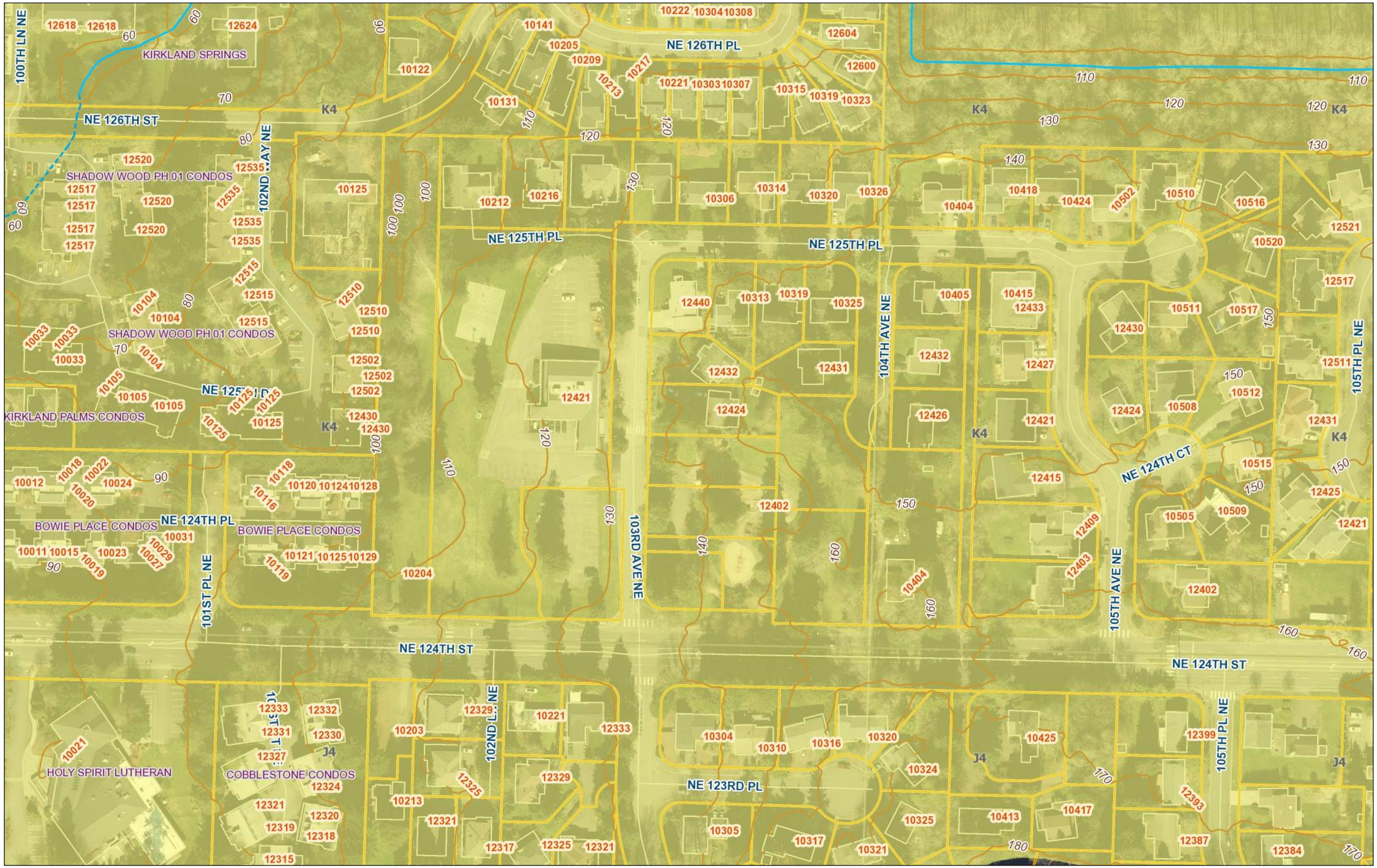
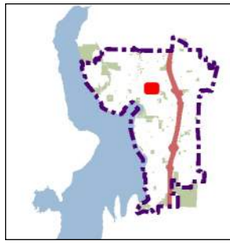
City of Kirkland GIS





Legend

- Contours 10 Feet
- Streams
  - Open
  - Pipe
- Wetlands
- Liquefaction Potential
  - High
  - Medium or Mixed
- Address
- City Limits
- Grid
- QQ Grid
- Regional Rail Corridor
- Cross Kirkland Corridor
- Streets
- Parcels
- Place Names
- Buildings
- Lakes

1: 1,500

0.0 0 0.02 0.0 Miles

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

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Notes

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TEST PIT NO. 15

Logged By CRL

Date 7-9-85

Elev. -1±

Depth (ft.)	USCS	Soil Description	W (%)	
0		TOPSOIL		
	ml	gray mottled SILT with fine sand, non-plastic, moist, loose to medium dense	29	
5		becomes dense	32	
		becomes wet		
10		Test pit terminated at 9' below existing grade. No groundwater seepage encountered during excavation.		
15				

TEST PIT NO. 16

Logged By CRL

Date 7-9-85

Elev. -5±

Depth (ft.)	USCS	Soil Description	W (%)	
0		TOPSOIL		
	sm	tan silty fine SAND, moist, loose to medium dense	50	LL=45 PI=20 q_u=1.0 tsf
5	CL	gray clayey SILT, wet, stiff		
	gp	gray sandy GRAVEL with silt, wet, dense		
10		Test pit terminated at 8.5' below existing grade. Moderate groundwater seepage encountered at 5.5' during excavation.		
15				

Earth Consultants Inc.
GEOTECHNICAL ENGINEERING & GEOLOGY

TEST PIT LOGS

JUANITA 84
KING COUNTY, WASHINGTON

Proj. No. 2674	Date July '85	Plate 11

Test Pit Log

Project Name:			Sheet	of
Holy Spirit Lutheran Church			1	1
Job No. 10262	Logged by: SSR	Date: 8/29/02	Test Pit No.: TP-1	
Excavation Contactor: NW Excavating			Ground Surface Elevation: 100'	
Notes:				

General Notes	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Topsoil & Sod 6": grass
			1		SM	Brown silty SAND, loose to medium dense, moist (Fill)
	4.3		2			-occasional wood fragments
			3		SP-SM	Brown poorly graded SAND with silt, loose to medium dense, moist
	5.8		4			
			5			
			6			
	9.6		7			Test pit terminated at 7.0 feet below existing grade. No groundwater encountered during excavation.

Earth Consultants Inc.
Geotechnical Engineers, Geologists & Environmental Scientists

Test Pit Log
Holy Spirit Lutheran Church
Kirkland, Washington

Proj. No. 10262	Dwn. GLS	Date Sept. 2002	Checked SSR	Date 9/9/02	Plate A2

Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

TEST PIT LOG 10262.GPJ ECI.GDT 9/9/02

Test Pit Log

Project Name:			Sheet	of
Holy Spirit Lutheran Church			1	1
Job No. 10262	Logged by: SSR	Date: 8/29/02	Test Pit No.: TP-2	
Excavation Contactor: NW Excavating			Ground Surface Elevation: 98'	
Notes:				

General Notes	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Topsoil & Sod 6": grass
			1		SM/ML	Brown silty SAND to sandy SILT, medium dense, moist
	5.3		2			-50% fines
			3		SP-SM	Brown poorly graded SAND with silt, medium dense, moist
	6.3		4			
			5			
			6			Test pit terminated at 6.0 feet below existing grade. No groundwater encountered during excavation.

Earth Consultants Inc.
Geotechnical Engineers, Geologists & Environmental Scientists

Test Pit Log
Holy Spirit Lutheran Church
Kirkland, Washington

Proj. No. 10262	Dwn. GLS	Date Sept. 2002	Checked SSR	Date 9/9/02	Plate A3

TEST PIT LOG 10262.GPJ ECI.GDT 9/9/02

Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

APPENDIX A.3
REFERENCE INFORMATION FOR PETER KIRK PARK

Included in this section are City of Kirkland Landslide Susceptibility Map and Liquefaction Susceptibility Map, and exploration logs from previous studies completed in the immediate vicinity of the project site.

City of Kirkland GIS

Legend

- Contours 10 Feet
- Streams
  - Open
  - Pipe
- Landslide
  - Deposit Areas
  - Head Scarps
  - High Susceptibility
  - Moderate Susceptibility
- Wetlands
- Address
- City Limits
- Grid
- QQ Grid
- Regional Rail Corridor
- Cross Kirkland Corridor
- Streets
- Parcels
- Place Names
- Buildings
- Lakes

1: 1,500

0.0 0 0.02 0.0 Miles

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

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Notes

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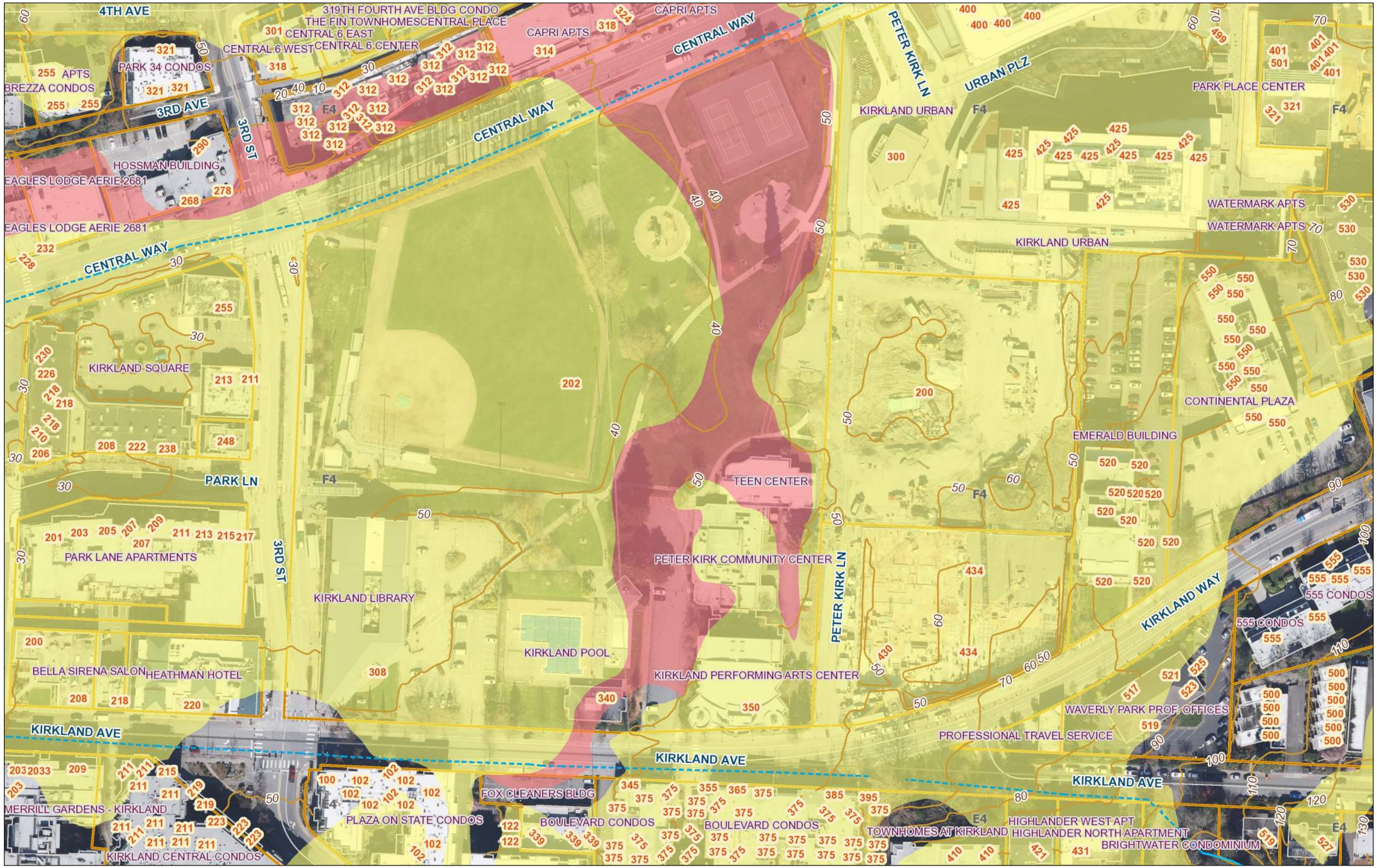
City of Kirkland GIS



Legend

- Contours 10 Feet
- Streams
  - Open
  - Pipe
- Wetlands
- Liquefaction Potential
  - High
  - Medium or Mixed
- Address
- City Limits
- Grid
- QQ Grid
- Regional Rail Corridor
- Cross Kirkland Corridor
- Streets
- Parcels
- Place Names
- Buildings
- Lakes

1: 1,500

0.0 0 0.02 0.0 Miles

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

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Notes

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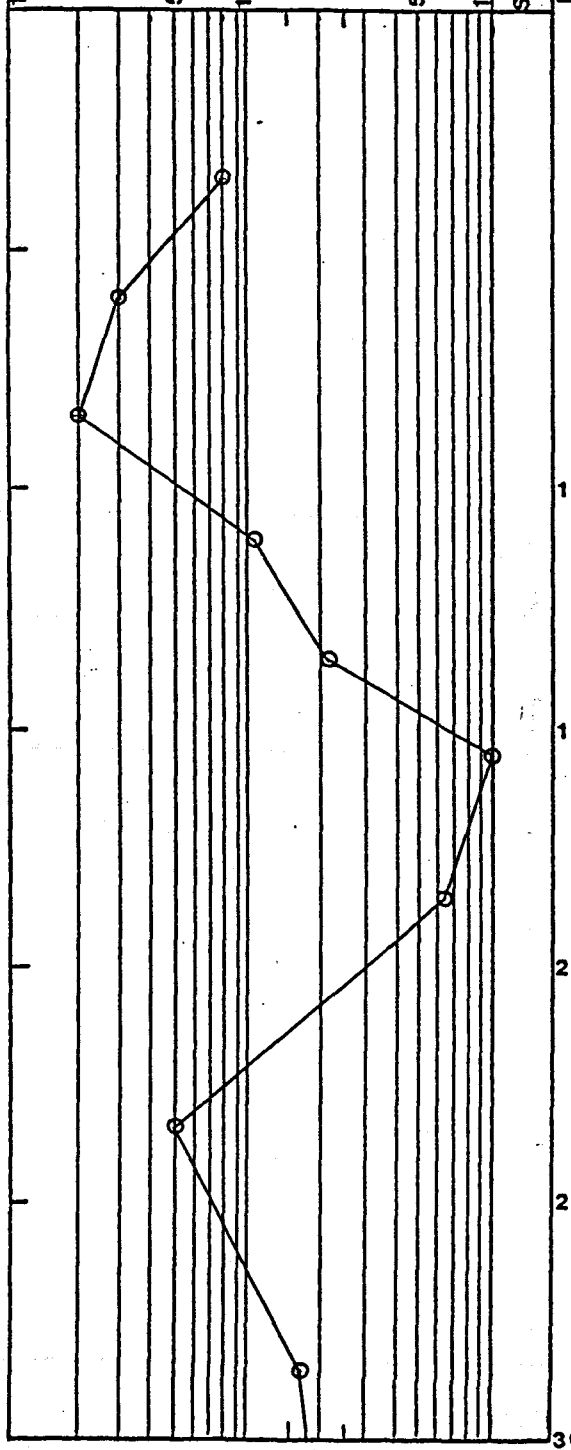
DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

SAMPLING METHOD(S):
STANDARD PENETRATION, SHELBY TUBE

BORING DESIGNATION: EB-1
SHEET 1 OF 2

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



DEPTH FT.	MATERIAL DESCRIPTION	TEST RESULTS
0	Loose, grey, silty fine sandy Artificial Fill, moist, poorly sorted, dark organic silt inclusions.	4-9-86 ▽
5	Very soft, dark brown, peat with rotted wood fragments, saturated, fiberous.	
	Very loose, brown, organic silty fine to medium sand, saturated, poorly sorted.	
10	Medium dense, grey, slightly silty fine to medium sand, saturated, well sorted.	
15	Very dense, grey, gravelly, medium to coarse sand, saturated, poorly sorted.	
	becomes fine to medium grained.	
20	Soft, grey, silty clay, wet, with interbeds of grey, silty very fine sand.	Pocket pen.=0.5 TSF Torvane=0.25 TSF
25	Dense, grey, silty, clayey fine sand, saturated.	
	Stiff, grey, silty clay with fine sand seams, moist to wet.	
30		

LOG OF BORING

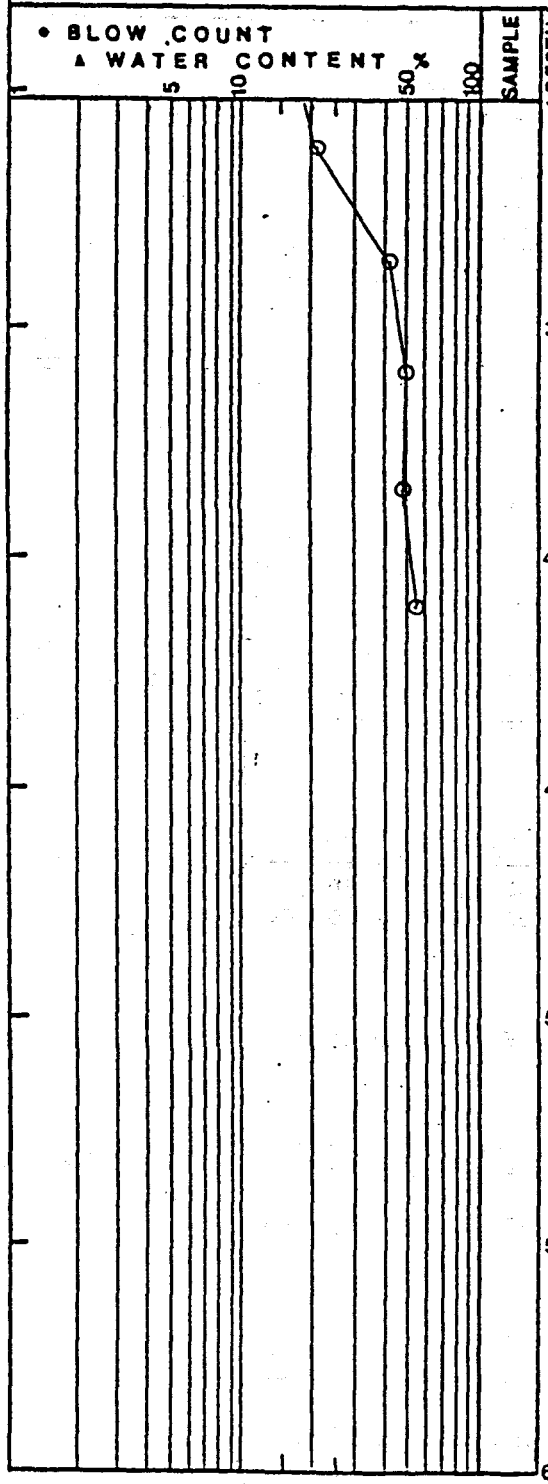
8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

SAMPLING METHOD(S):
STANDARD PENETRATION, SHELBY TUBE

BORING DESIGNATION: EB-1
SHEET 2 OF 2

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



MATERIAL DESCRIPTION	TEST RESULTS
Very stiff to hard, grey very fine sandy silt. clayey in zones.	
TD @ 41.5' 3-13-86	

LOG OF BORING

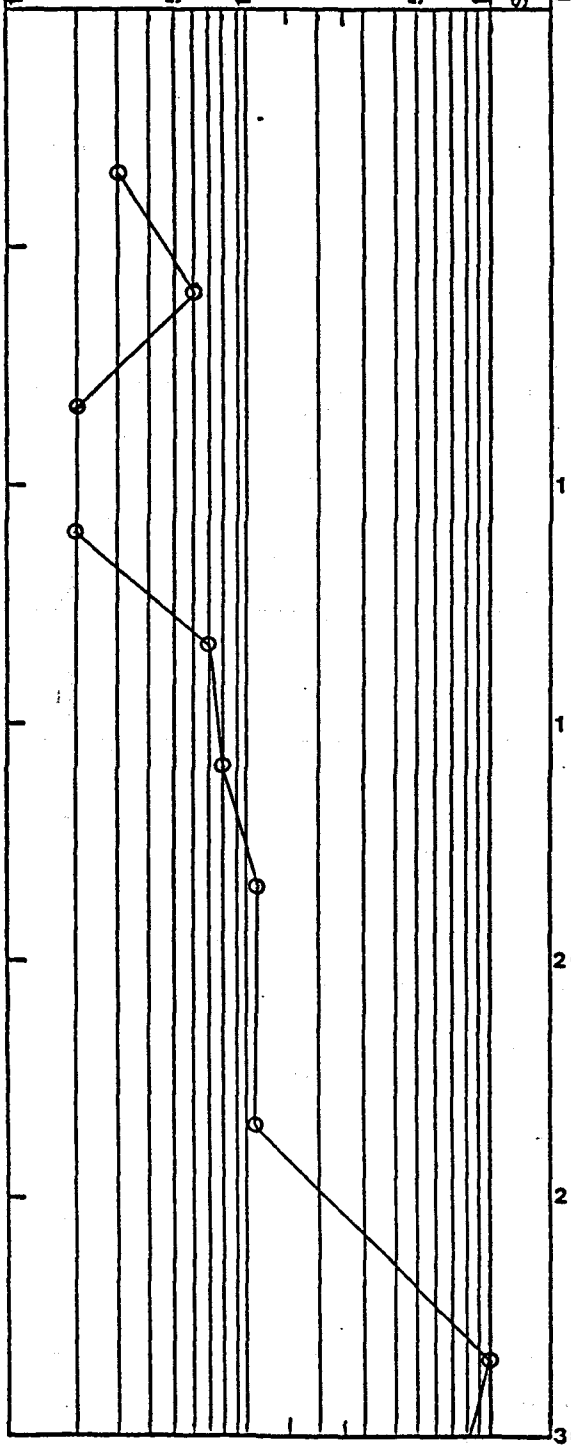
8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

SAMPLING METHOD(S):
STANDARD PENETRATION

BORING DESIGNATION: EB-2
SHEET 1 OF 2

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



DEPTH FT.	MATERIAL DESCRIPTION	TEST RESULTS
0	Very loose to loose, brown, silty very fine sandy Artificial Fill, wet, fine roots.	
5	scattered asphalt debris. becomes organic and silty.	4-9-86 ▽
	Very soft, brown, organic fine sandy silt, wet to saturated.	
10	fine organics on bedding.	
	zones of very loose, dark brown silty organic sands. concentrated wood debris 12'-15.5', to log size.	
15	Medium stiff, grey clayey silt with fine sandy silt and silty very fine sand interbeds.	Pocket Pen.=0.25 TSF Torvane = 0.15 TSF
20		
	fine sand seams.	
25	Very dense, grey, gravelly, silty, fine to medium sand, saturated, with very fine sandy silt seams.	
	Hard, grey fine sandy silt, saturated.	
30		

LOG OF BORING

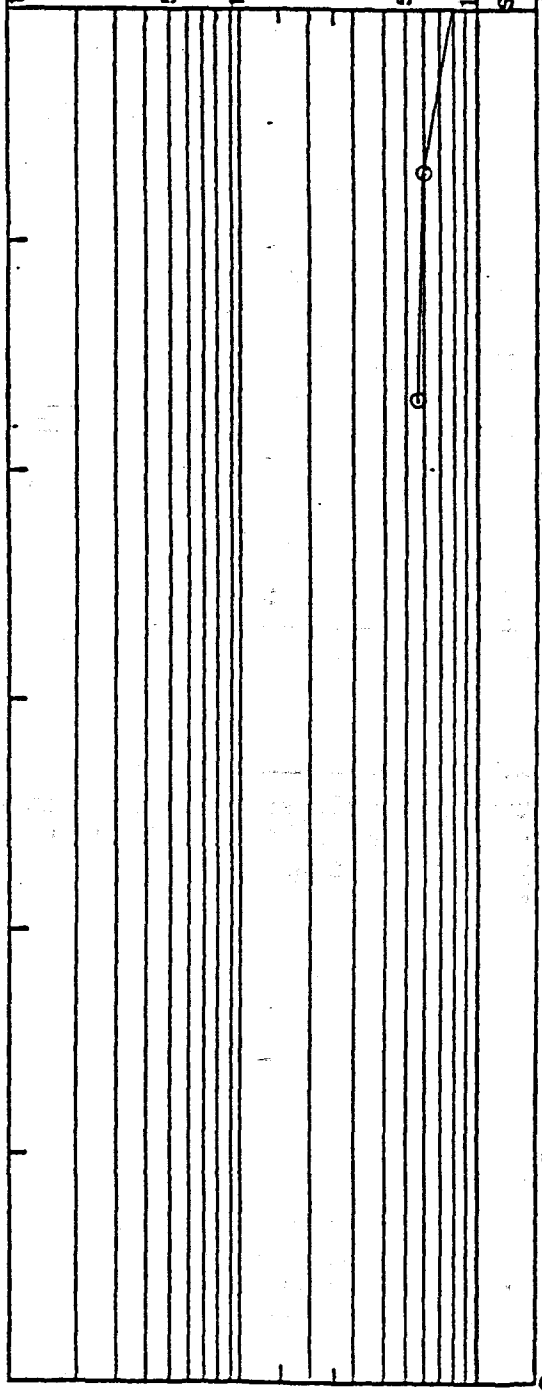
8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

SAMPLING METHOD(S):
STANDARD PENETRATION

BORING DESIGNATION: EB-2
SHEET OF

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



MATERIAL DESCRIPTION	TEST RESULTS
as above	
very fine, white sand coating on thin random partings.	
TD @ 39.0' 3-14-86	

LOG OF BORING

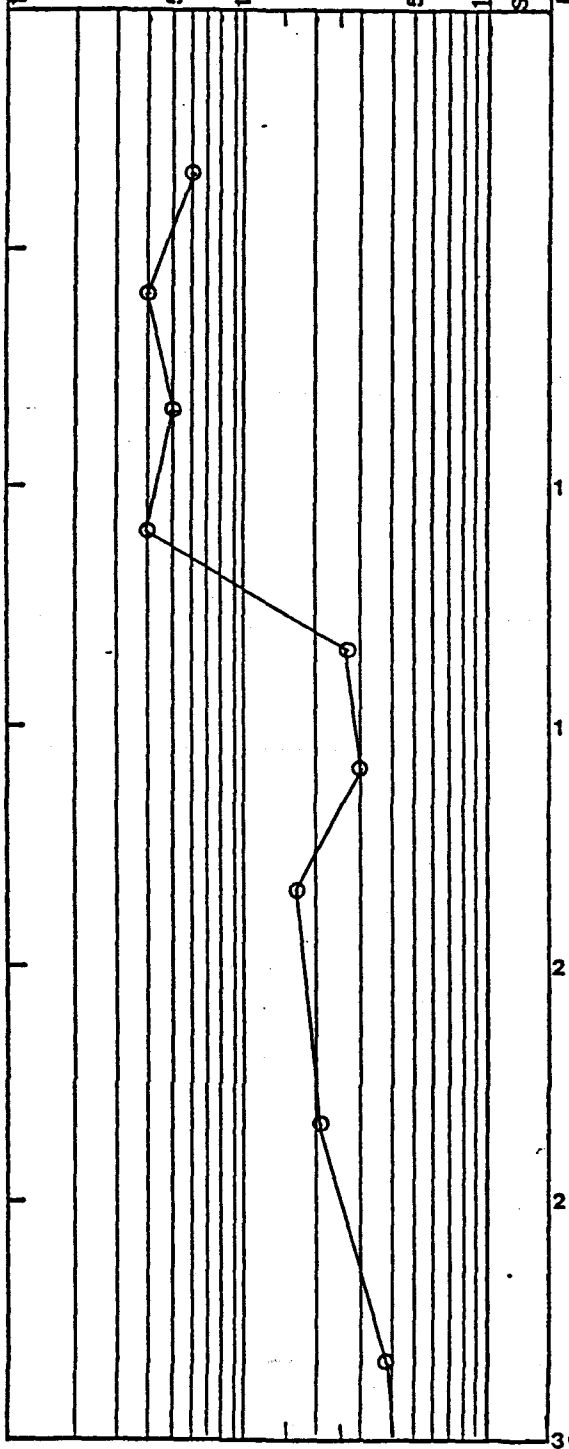
8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

SAMPLING METHOD(S):
STANDARD PENETRATION

BORING DESIGNATION: EB-3
SHEET 1 OF 2

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



DEPTH FT.	MATERIAL DESCRIPTION	TEST RESULTS
0	Loose, grey and brown, fine sandy silty Artificial Fill, damp.	
5	Soft, dark brown, peaty organic silt, saturated.	4-9-86
10	Loose, dark brown, organic silty sand, saturated. grades into medium dense, grey, slightly silty medium sand, saturated.	
15	Dense, silty fine sand, saturated.	
	Medium dense, grey, fine to medium sand, saturated, few roots.	
20	Medium stiff, grey with greenish hue, very fine sandy silt.	
	Stiff to very stiff, grey, very fine sandy silt, damp to moist.	
25	very fine, white quartz sand coating on occasional, random partings. grades hard.	
30		

LOG OF BORING

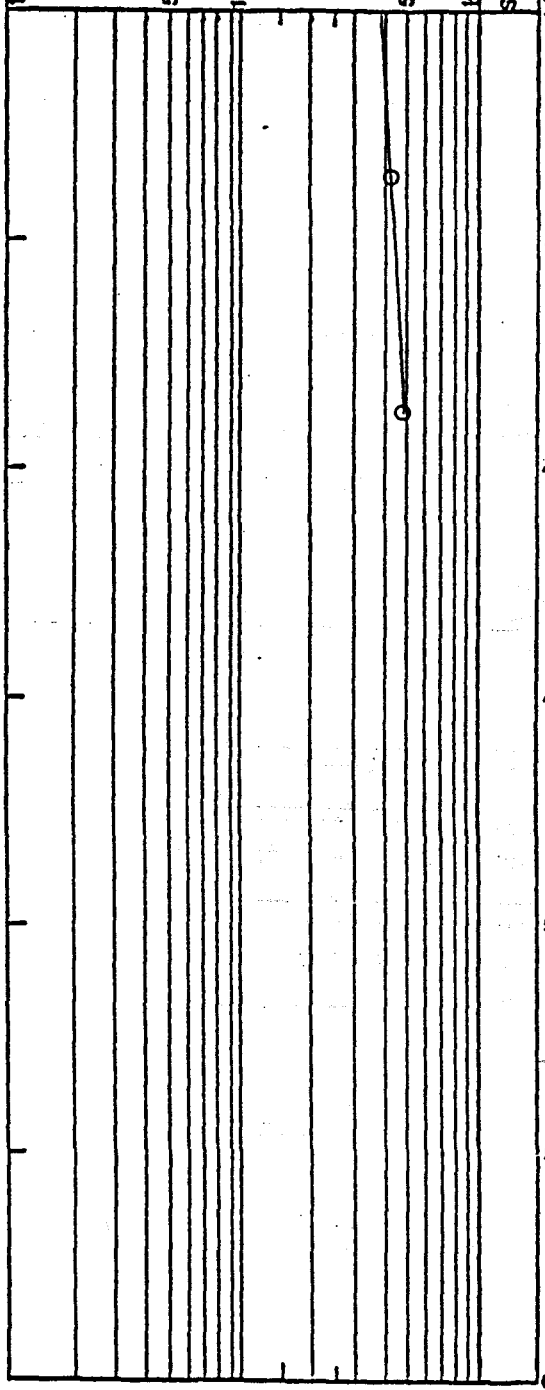
8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

BORING DESIGNATION: EB-3
SHEET 2 OF 2

SAMPLING METHOD(S):
STANDARD PENETRATION

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



MATERIAL DESCRIPTION	TEST RESULTS
As above.	
TD @ 39.0' 3-15-86	

LOG OF BORING

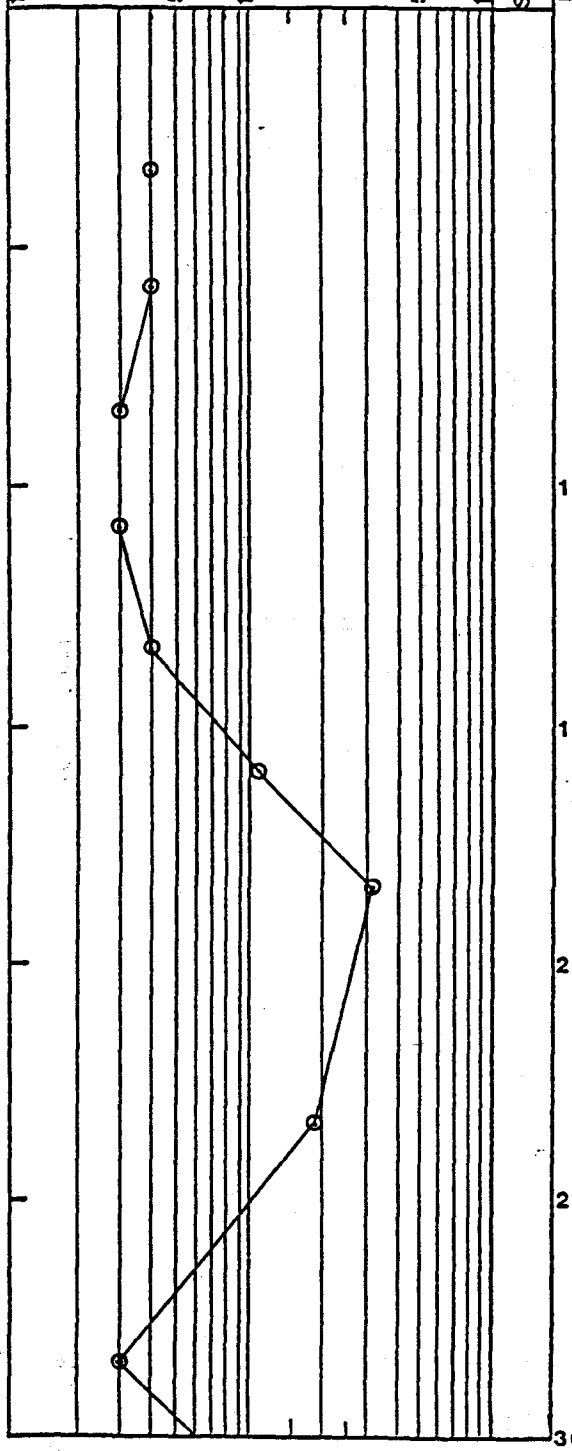
8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

SAMPLING METHOD(S):
STANDARD PENETRATION

BORING DESIGNATION: EB-4
SHEET 1 OF 2

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



DEPTH FT.	MATERIAL DESCRIPTION	TEST RESULTS
0	Very loose to loose, grey and brown, sandy silty Artificial Fill, wet, intermixed organics.	
5		4-9-86 ▽
	Soft, dark to light brown peat, wet, fiberous.	
10	Very loose, grey brown, organic, silty medium sand, saturated fine organics in matrix.	
	Soft, dark brown, peat and organic silt, wet.	
15	Loose, brown, organic, silty fine sand.	
	Medium dense to dense, grey, fine to medium sand, saturated.	
20		
	Medium stiff to stiff, grey, very fine sandy silt to clayey silt.	Pocket Pen.=0.25 TSF Torvane = 0.25 TSF
25	grades soft with fine sand seams.	
30		

LOG OF BORING

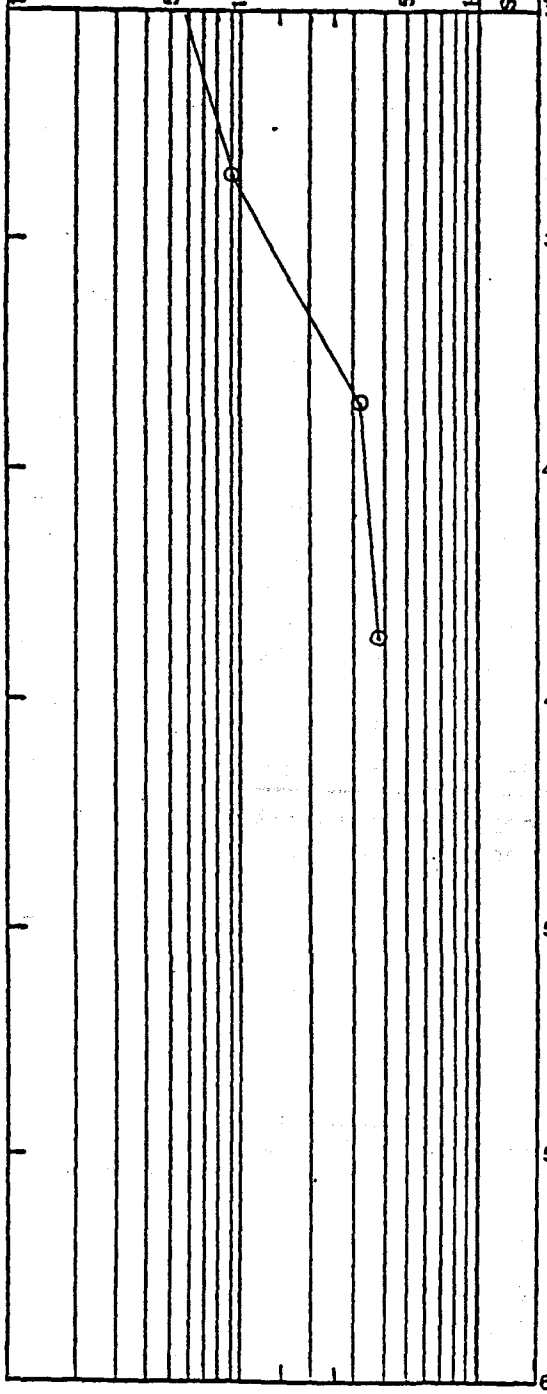
8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

SAMPLING METHOD(S):
STANDARD PENETRATION

BORING DESIGNATION: EB-4
SHEET 2 OF 2

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



DEPTH FT.	MATERIAL DESCRIPTION	TEST RESULTS
30	grades medium stiff to stiff.	
	Dense, grey, gravelly, silty fine sand saturated.	
35	Hard, grey, very fine sandy silt, damp to moist.	
	thin, white, very fine quartz sand coating on random partings.	
40		
45	TD @ 44.0' 3-15-86	
50		
55		
60		

LOG OF BORING

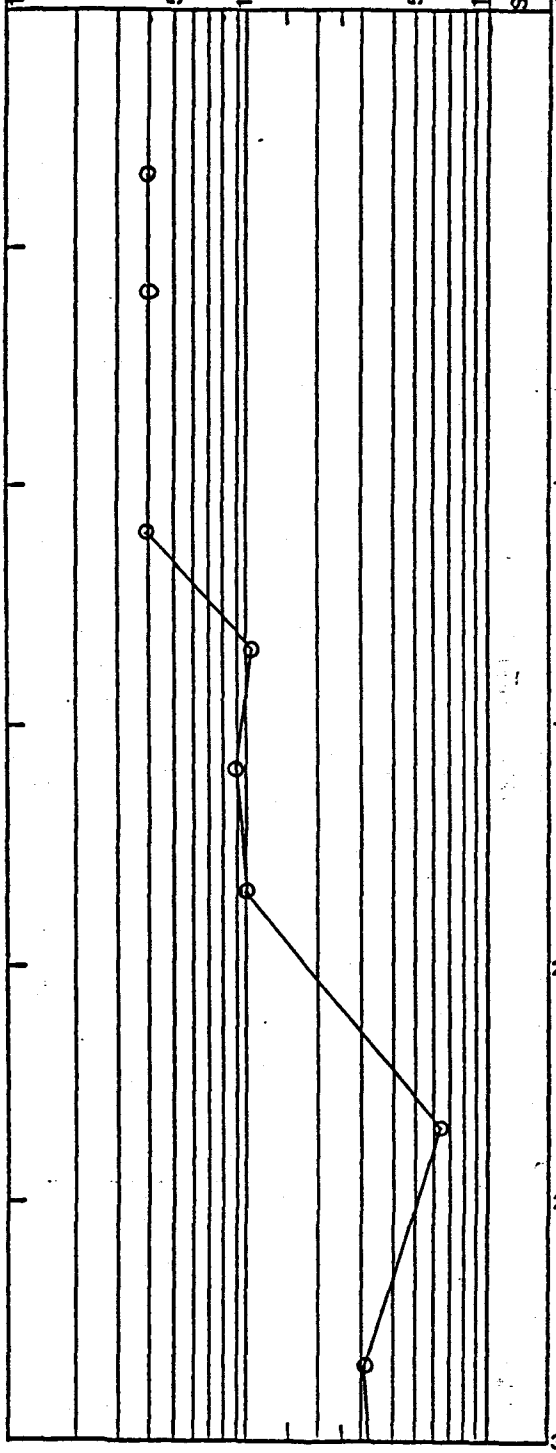
8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

SAMPLING METHOD(S):
STANDARD PENETRATION, SHELBY TUBE

BORING DESIGNATION: EB-5
SHEET 1 OF 2

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



DEPTH FT.	MATERIAL DESCRIPTION	TEST RESULTS
0	Very loose to loose, brown, organic, silty medium to coarse sandy, Artificial Fill, moist to wet.	
5	Soft, brown, peat and wood fragments, wet, fiberous.	4-9-86 ▽
	Loose, grey, organic medium to coarse sand, saturated, some silt, fine organics in matrix.	
10	Soft, brown, peat, saturated, fiberous.	
	Loose to medium dense, brown, silty, fine to medium sand, saturated, occasional fine wood, scattered gravels in seams.	
15	Stiff, grey, clayey silt, moist to wet.	
	fine sand partings and occasional fine to medium sand layers.	
20	Hard grey, very fine sandy silt, damp.	Pocket Pen.>4.5 TSF
25	clayey in zones.	
	thin, white, very fine quartz sand coating on random partings.	Pocket Pen.>4.5 TSF
30		

LOG OF BORING

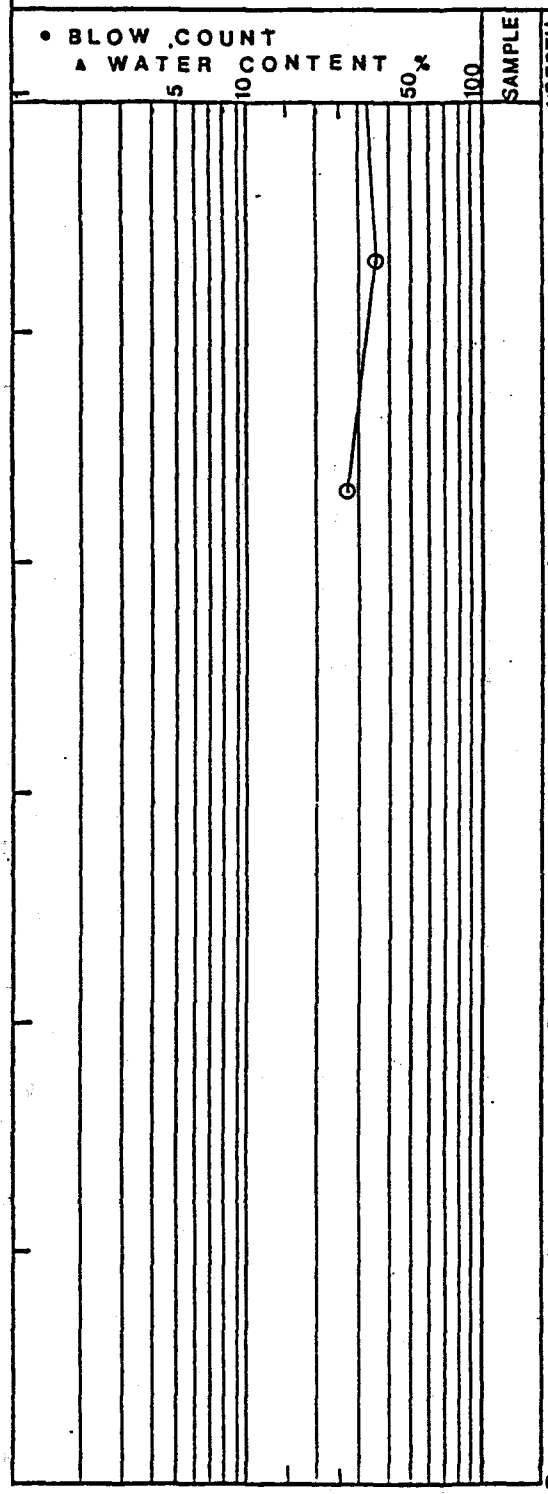
8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

DRILLING METHOD:
ROTARY - HOLLOW STEM AUGER

SAMPLING METHOD(S):
STANDARD PENETRATION, SHELBY TUBE

BORING DESIGNATION: EB-5
SHEET 2 OF 2

SURFACE ELEVATION: GRADE
DATUM: NO CONTROL



MATERIAL DESCRIPTION	TEST RESULTS
As above	
grades to very stiff.	
TD @ 39.0' 3-16-86	

LOG OF BORING

8013-001 APRIL 1986
KIRKLAND SQUARE DEVELOPMENT

BORING NO. B-1

Logged By: WB Date: 3/31/03 Ground Elev. 36.9' ±

Depth ft	USCS	Soil Description	Sample Type	Sample No.	(N) Blows/ ft.	W %	Other Test
		Asphalt pavement and gravel base					
	SM	Gray, loose to medium-dense, silty fine SAND, with some gravel, moist (FILL)					
5		4/11/03 ▼					
	ML	Gray, stiff, very-fine sandy SILT, moist (FILL)	SS	1	11		
	OL	Dark-brown, soft, organic silty PEAT, with few sand seams, saturated					
10			SS	2	2		
	SP/OL	Gray, very-loose, medium-grained SAND, with peat and organic silt seams, saturated					
15			SS	3	2		
20	SP/GP	Brown, medium-dense, SAND and GRAVEL seam, saturated	SS	4	24		
	SM	Gray-brown to gray, medium-dense, silty, fine to very-fine SAND, moist					
25	ML	Gray, very-stiff, SILT, with thin, gray, very fine sand and silt partings, moist	SS	5	33		
30	SM	Gray, dense, silty, very fine SAND, trace of fine gravel, moist	SS	6	28		
35		(Continued on PLATE 4B)					

LEGEND: SS - 2" O.D. Split-Spoon Sample
ST - 3" O.D. Shelby-Tube Sample
B - Bulk Sample

GROUNDWATER: Seal
Water Level ▼
Observation Well Tip

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BORING LOG
KIRKLAND HOTEL
KIRKLAND AVENUE AND 3RD STREET
KIRKLAND, WASHINGTON

JOB NO. 3A033 DATE 5/19/03 PLATE 4A

BORING NO. B-1 (Continued from PLATE 4A)

Logged By: _____ Date: _____ Ground Elev. ± _____

Depth ft.	USCS	Soil Description	Sample Type	Sample No.	(N) Blows/ ft.	W %	Other Test
	SM	Gray, dense, silty, very fine SAND, trace of fine gravel, moist (same as above)	SS	7	39		
40		- few fine sand seams	SS	8	46		
45			SS	9	47		
50		Boring terminated at 46.5 ft.					
55							
60							
65							

LEGEND: SS - 2" O.D. Split-Spoon Sample
ST - 3" O.D. Shelby-Tube Sample
B - Bulk Sample

GROUNDWATER: Seal
Water Level
Observation Well Tip

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BORING LOG
KIRKLAND HOTEL
KIRKLAND AVENUE AND 3RD STREET
KIRKLAND, WASHINGTON

JOB NO. 3A033 | DATE 5/19/03 | PLATE 4B

BORING NO. B-2

Logged By: WB Date: 4/11/03 Ground Elev. 42.9' ±

Depth ft.	USCS	Soil Description	Sample Type	Sample No.	(N) Blows/ ft.	W %	Other Test
		Asphalt pavement and gravel base					
	ML	Gray, medium-stiff, gravelly SILT, intermixed with gravel and brick fragments, moist (FILL)					
5			SS	1	11		
	OL/SP	Dark-brown, very-loose, interbedded, organic silty PEAT and gray fine SAND, saturated					
10	▼4/11/03	(sand in about 2-inch seams)	SS	2	2		
15	CL	Brown-gray, very-soft, silty CLAY with scattered gravel, wet (gravel in thin bedding)	SS	3	24		
20	GP	Gravel seams, saturated	SS	4	33		
	SM/ML	Gray-brown to gray, very-stiff, sandy SILT to SILT, with gray, thin, very-fine sand partings, moist					
25			SS	5	33		
	SM	Gray, dense, silty, very-fine SAND, moist					
30			SS	6	28		
		- increased moisture below 35 ft					
35	4/11/03 ▼	(Continued on PLATE 5B)					

LEGEND: SS - 2" O.D. Split-Spoon Sample
ST - 3" O.D. Shelby-Tube Sample
B - Bulk Sample

GROUNDWATER: Seal
Water Level ▼
Observation Well Tip

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BORING LOG
KIRKLAND HOTEL
KIRKLAND AVENUE AND 3RD STREET
KIRKLAND, WASHINGTON

JOB NO. 3A033 DATE 5/19/03 PLATE 5A

BORING NO. B-2 (Continued from PLATE 5A)

Logged By: _____ Date: _____ Ground Elev. ±

Depth ft.	USCS	Soil Description	Sample Type	Sample No.	(N) Blows/ ft.	W %	Other Test
	SM	Gray, dense, silty, very-fine SAND, moist (same as above)	SS	7	29		
		- with fine sand in phases					
40			SS	8	39		
45			SS	9	47		
50		Boring terminated at 46.5 ft.	SS	4	37		
55							
60							
65							

LEGEND: SS - 2" O.D. Split-Spoon Sample
ST - 3" O.D. Shelby-Tube Sample
B - Bulk Sample

GROUNDWATER: Seal
Water Level
Observation Well Tip

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BORING LOG
KIRKLAND HOTEL
KIRKLAND AVENUE AND 3RD STREET
KIRKLAND, WASHINGTON

JOB NO. 3A033 | DATE 5/19/03 | PLATE 5B

BORING NO. B-3

Logged By: WB Date: 4/14/03 Ground Elev. 36.9' ±

Depth ft.	USCS	Soil Description	Sample Type	Sample No.	(N) Blows/ ft.	W %	Other Test
		6-inch concrete slab over pea gravel base					
	ML	Brown, soft, sandy SILT, intermixed with brick fragments (FILL)					
	ML	Brown-gray, very-stiff, very-fine sandy SILT, moist					
5			SS	1	18		
	SM	Brown, very-dense, silty, very-fine SAND, vague bedding, moist					
10			SS	2	59		
15	ML	Gray, very-stiff SILT, with trace very fine sand, moist	SS	3	24		
20		- less sand	SS	4	21		
25		▼ 4/14/03	SS	5	31		
	ML	Gray, very-stiff, very-fine sandy SILT, moist to wet in seams of silty very-fine sand					
30			SS	6	25		
	ML	Gray, very-stiff SILT, with one 2-inch fine gravelly sand seam, moist (Continued on PLATE 6B)					
35							

LEGEND: SS - 2" O.D. Split-Spoon Sample
ST - 3" O.D. Shelby-Tube Sample
B - Bulk Sample

GROUNDWATER: Seal
Water Level ▼
Observation Well Tip

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BORING LOG
KIRKLAND HOTEL
KIRKLAND AVENUE AND 3RD STREET
KIRKLAND, WASHINGTON

JOB NO. 3A033 DATE 5/19/03 PLATE 6A

BORING NO. B-3 (continued from previous page)

Logged By: _____ Date: _____ Ground Elev. ± _____

Depth ft.	USCS	Soil Description	Sample Type	Sample No.	(N) Blows/ ft.	W %	Other Test
	ML	Gray, very-stiff SILT, with one 2-inch fine gravelly sand seams, moist (same as above)	SS	7	24		
40	SM/ML	Gray, medium-dense, silty, very-fine SAND to fine sandy SILT, in 1/4-inch bedding, moist to wet	SS	8	24		
45			SS	9	37		
50	ML/CL	Brown and gray, soft, clayey SILT, with some fine sand, saturated					
	ML	Gray, dense, very-fine, sandy SILT, moist to wet	SS	10	34		
55		Test boring terminated @ 51.5 ft.					
60							
65							

LEGEND: SS - 2" O.D. Split-Spoon Sample
ST - 3" O.D. Shelby-Tube Sample
B - Bulk Sample

GROUNDWATER: Seal
Water Level
Observation Well Tip

LIU & ASSOCIATES, INC.

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BORING LOG
KIRKLAND HOTEL
KIRKLAND AVENUE AND 3RD STREET
KIRKLAND, WASHINGTON

JOB NO. 3A033 | DATE 5/19/03 | PLATE 6B

BORING NO. B-4

Logged By: WB Date: 4/14/03 Ground Elev. 51.4' ±

Depth ft.	USCS	Soil Description	Sample Type	Sample No.	(N) Blows/ ft.	W %	Other Test
		6-inch concrete slab over fill					
	ML	Brown-gray to gray mottled, medium-stiff SILT, with very fine sand, moist (FILL)					
5			SS	1	5		
	ML	Brown to light-gray, very-stiff SILT, with interbeds of very-fine sandy silt, moist					
10			SS	2	28		
15			SS	3	27		
	ML	Gray, very-stiff, very-fine sandy SILT, moist					
20			SS	4	23		
25		- zones of very fine sand	SS	5	29		
	SM	Gray, dense, silty, very-fine SAND, moist					
30			SS	6	29		
35		4/14/03 ▼ (Continued on PLATE 7B)					

LEGEND: SS - 2" O.D. Split-Spoon Sample
ST - 3" O.D. Shelby-Tube Sample
B - Bulk Sample

GROUNDWATER: Seal
Water Level ▼
Observation Well Tip

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KIRKLAND HOTEL
KIRKLAND AVENUE AND 3RD STREET
KIRKLAND, WASHINGTON

JOB NO. 3A033 | DATE 5/19/03 | PLATE 7A

BORING NO. B-4 (Continued from PLATE 7A)

Logged By: _____ Date: _____ Ground Elev. ± _____

Depth ft.	USCS	Soil Description	Sample Type	Sample No.	(N) Blows/ ft.	W %	Other Test
		Gray, dense, silty, very-fine SAND, moist (Same as above) - saturated seam @ 35.0 ft	SS	7	32		
40	ML	Gray, very-stiff SILT, with occasional seams of silty very-fine sand, thin bedding with interbedded gray very-fine sand, moist	SS	8	19		
45	SM	Gray, medium-dense, silty, very-fine SAND, saturated	SS	9	20		
50			SS	10	38		
55			SS	11	29		
60	ML	Gray, very-stiff SILT, moist	SS	12	23		
65		Test Boring terminated @ 61.5 ft.					

LEGEND: SS - 2" O.D. Split-Spoon Sample
ST - 3" O.D. Shelby-Tube Sample
B - Bulk Sample

GROUNDWATER: Seal
Water Level
Observation Well Tip

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BORING LOG
KIRKLAND HOTEL
KIRKLAND AVENUE AND 3RD STREET
KIRKLAND, WASHINGTON

JOB NO. 3A033 | DATE 5/19/03 | PLATE 7B

BORING NO. B-5

Logged By: WB Date: 4/14/03 Ground Elev. 38.2' ±

Depth ft.	USCS	Soil Description	Sample Type	Sample No.	(N) Blows/ ft.	W %	Other Test
		Asphalt pavement over crushed rock base					
	SP/ML	Brown-gray intermixed, loose, very-fine SAND and SILT, trace gravel, moist (FILL)					
5			SS	1	6		
	ML	Dark-brown, to gray-brown, soft, sandy SILT, with fine organics in matrix, one 2-inch sand seam, and gray, soft, clayey silt at base of sampler, saturated					
10	ML	Brown-gray mottled, stiff, very-fine sandy SILT, moist	SS	2	15		
15	SM/ML	Brown-gray to gray, medium-dense, very-fine sandy SILT to silty very-fine SAND, moist	SS	3	31		
20	▼	4/14/03	SS	4	15		
		- grades to silty very-fine SAND, saturated					
25			SS	5	26		
		Test Boring terminated @ 26.5 ft.					
30							
35							

LEGEND: SS - 2" O.D. Split-Spoon Sample
ST - 3" O.D. Shelby-Tube Sample
B - Bulk Sample

GROUNDWATER: Seal
Water Level ▼
Observation Well Tip

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BORING LOG
KIRKLAND HOTEL
KIRKLAND AVENUE AND 3RD STREET
KIRKLAND, WASHINGTON

JOB NO. 3A033 | DATE 5/19/03 | PLATE 8

RECORD OF BOREHOLE GB-1

SHEET 1 of 2

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/17/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 49.5
INCLINATION: -90

DEPTH (ft)	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft ■ (10 20 30 40) / WATER CONTENT (PERCENT) W_p — W — W_l	NOTES WATER LEVELS GRAPHIC
0	4.25 inch I.D. HSA with 140lb. Autohammer	0.0 - 0.1 ASPHALT (SURFACING) 0.1 - 0.2 CRUSHED ROCK (SUBBASE) 0.2 - 3.0 Hard, olive gray to medium gray, massive, CLAYEY SILT, little fine sand, damp. PID: 0 ppm (TRANSITIONAL BEDS)	ML/CL		0.2							Monument and Concrete Bentonite Chips
					46.5							
		3.0 - 3.1 Dense, light gray, fine to medium SAND lense	SP		3.1	1	SPT	8-14-17	31	1.5/1.5		
		3.1 - 12.0 Stiff to very stiff, medium gray, massive, CLAYEY SILT with light gray fine SAND and SILT laminae, damp. PID: 0 ppm										
5						2	SPT	3-3-7	10	1.5/1.5		1-inch pvc riser
			ML/CL									
		At 7.5 feet, becomes very stiff.				3	SPT	4-7-10	17	1.5/1.5		
10		Sample 4: Slightly fractured with steeply dipping laminae.				4	SPT	5-11-14	25	1.5/1.5		10-20 Silica Sand
					37.5							
		12.0 - 15.0 Compact, medium gray, SILT and fine SAND, moist to wet. PID: 0 ppm			12.0							
			ML/SP			5	SPT	5-8-11	19	1.5/1.5		1-inch diameter slotted pvc
15					34.5							
		15.0 - 29.0 Stiff to very stiff, medium gray, massive, CLAYEY SILT, with steeply dipping, light gray, fine SAND laminae, damp. PID: 0 ppm			15.0	6	SPT	3-7-9	16	1.5/1.5		
												Bentonite Chips
						7	SPT	3-4-8	12	1.5/1.5		
20			ML/CL									
						8	SPT	5-6-11	17	1.5/1.5		Bentonite Chips
25		Log continued on next page										

2/25/03
2/18/03

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-1

SHEET 2 of 2

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/17/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 49.5
INCLINATION: -90

DEPTH (ft)	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft ■ (10 20 30 40) / WATER CONTENT (PERCENT) W_p W W_l	NOTES WATER LEVELS / GRAPHIC
25		15.0 - 29.0 Stiff to very stiff, medium gray, massive, CLAYEY SILT, with steeply dipping, light gray, fine SAND laminae, damp. PID: 0 ppm *(Continued)* (same as above)	ML/CL									
						9	SPT	4-11-14	25	1.5 / 1.5	■	
					20.5							
		Boring completed at 29.0 ft.			29.0							
30												
35												
40												
45												
50												

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-2

SHEET 1 of 1

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/18/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 48
INCLINATION: -90

DEPTH (ft)	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft ■ (10 20 30 40) / WATER CONTENT (PERCENT) W_p W W_l	NOTES WATER LEVELS / GRAPHIC
0	4.25-inch I.D. HSA with 140lb. Autohammer	0.0 - 1.0 CRUSHED ROCK (FILL) PID: 0 ppm			47.0							
		1.0 - 11.0 Very stiff, medium gray, massive, CLAYEY SILT to SILTY CLAY, with light gray fine sand and silt laminae, damp. PID: 0 ppm (TRANSITIONAL BEDS)			1.0							
5			CL/ML			1	SPT	6-12-13	25	1.5/1.5		
		Sample 2: Becomes olive gray with steeply dipping (75 degrees) fine sand and silt laminae.				2	SPT	4-8-12	20	1.5/1.5		
10												Bentonite Chips
		11.0 - 14.5 Very stiff, olive gray, massive, CLAYEY SILT interbedded with olive gray fine SAND and SILT. PID: 0 ppm			37.0 11.0							
			ML/CL/SM			3	SPT	7-10-15	25	1.5/1.5		
15		14.5 - 20.0 Very stiff, olive gray, massive, CLAYEY SILT, with steeply dipping (60 degrees) light gray, fine sand and silt laminae, damp.			33.5 14.5							
			CL/ML			4	SPT	4-7-13	20	1.5/1.5		
20		Boring completed at 20.0 ft.			28.0 20.0							
25												

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-3

SHEET 1 of 1

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/17/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 45
INCLINATION: -90

DEPTH (ft)	BORING METHOD	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft ■ (10 20 30 40) / WATER CONTENT (PERCENT) W_p W W_l	NOTES WATER LEVELS / GRAPHIC
0	4.25-inch I.D. HSA with 140lb. Autohammer	0.0 - 0.2 ASPHALT (SURFACING) 0.2 - 0.3 CRUSHED ROCK (SUBBASE) 0.3 - 1.0 Loose, yellow brown, gravelly SAND. (FILL) 1.0 - 19.0 Compact, medium gray, massive, SILT, trace fine sand, with fine sand and silt laminae, damp. PID: 0 ppm (TRANSITIONAL BEDS)			0.3 44.0 1.0							
5						1	SPT	6-8-9	17	1.5/1.5		
						2	SPT	4-8-13	21	1.5/1.5		
10		At 9 feet: 1-inch thick lense of fine to medium SAND.	ML			3	SPT	5-9-14	23	1.5/1.5		Bentonite Chips
						4	SPT	3-6-8	14	1.5/1.5		
15		At 14.5 feet: slightly fractured.				5	SPT	2-5-10	15	1.5/1.5		
		At 16 feet: Becomes dark gray, SILT, little fine sand, steeply dipping (60 degrees) laminae of fine sand.				6	SPT	4-7-12	19	1.5/1.5		
		19.0 - 20.0 Very stiff, medium gray, massive, SILTY CLAY, trace fine sand, damp. PID: 0 ppm	ML/CL		26.0 19.0	7	SPT	8-7-9	16	1.5/1.5		
20		Boring completed at 20.0 ft.			25.0 20.0							
25												

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-4

SHEET 1 of 1

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/17/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 44
INCLINATION: -90

DEPTH (ft)	BORING METHOD	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft ■ (10 20 30 40) / WATER CONTENT (PERCENT) W_p — W — W_l	NOTES WATER LEVELS GRAPHIC
0	4.25-inch I.D. HSA with 140lb. Autohammer	0.0 - 0.1 ASPHALT (SURFACING) 0.1 - 0.2 CRUSHED ROCK (SUBBASE) 0.2 - 1.0 Loose, yellow brown, gravelly SAND. PID: 1.8 ppm (FILL) 1.0 - 7.1 Soft to very stiff, yellow brown to medium gray, massive, CLAYEY SILT, with fine sand laminae, trace fine roots in upper 6 inches, moist. PID: 0 ppm (TRANSITIONAL BEDS)	SW		0.2 43.0 1.0							
5			CL/ML			1	SPT	1-5-8	13	1.5 / 1.5	■	Bentonite Chips →
						2	SPT	3-9-14	23	1.5 / 1.5	■	
		At 7 feet: 1-inch thick lense of fine to medium SAND. 7.1 - 10.0 Compact, dark gray, massive, SILT, trace fine sand, damp. PID: 0 ppm			36.9 7.1							
10		At 9 feet: Light gray fine SAND laminae and occasional fractures observed.	ML		34.0	3	SPT	5-9-13	22	1.5 / 1.5	■	
		Boring completed at 10.0 ft.			10.0							
15												
20												
25												

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-5

SHEET 1 of 1

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/17/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 43.5
INCLINATION: -90

DEPTH (ft)	BORING METHOD	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft ■ (10 20 30 40) / WATER CONTENT (PERCENT) W_p W W_l	NOTES WATER LEVELS GRAPHIC
0	4.25-inch I.D. HSA with 140lb. Autohammer	0.0 - 0.1 ASPHALT (SURFACING) 0.1 - 0.2 CRUSHED ROCK (SUBBASE) 0.2 - 1.0 Soft, light gray, CLAYEY SILT, little fine to medium sand, petroleum odor. PID reading: 29 ppm 1.0 - 13.3 Stiff to very stiff, olive gray, slightly fractured, CLAYEY SILT, with moderately dipping (45 degrees), light gray, fine sand laminae. PID: 0 ppm (TRANSITIONAL BEDS)	ML/CL		0.2 42.5 1.0							
5						1	SPT	2-9-11	20	1.5/1.5		
						2	SPT	1-3-6	9	1.5/1.5		
		At 6 feet: Becomes stiff and dark gray.	ML/CL									
		At 8.5 feet: Becomes massive.				3	SPT	3-5-6	11	1.5/1.5		
10						4	SPT	3-5-7	12	1.5/1.5		Bentonite Chips
		13.3 - 15.5 Compact, medium gray, SILT and fine SAND, moist. PID: 0 ppm	ML/SP		30.2 13.3	5	SPT	6-7-9	16	1.5/1.5		
15		15.5 - 20.0 Firm, medium gray, massive, CLAYEY SILT, trace fine sand, moisl. PID: 0 ppm	ML/CL		28.0 15.5	6	SPT	2-2-4	6	1.5/1.5		
		At 19 feet: Light gray, fine sand laminae observed.				7	SPT	2-2-3	5	1.5/1.5		
20		Boring completed at 20.0 ft.			23.5 20.0							
25												

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-6

SHEET 1 of 2

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/18/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 42.5
INCLINATION: -90

DEPTH (ft)	DESCRIPTION	USCS	ELEV. DEPTH (ft)	NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT
0	0.0 - 0.2 ASPHALT (SURFACING) 0.2 - 0.3 CRUSHED ROCK. PID: 5 ppm (SUBBASE) 0.3 - 5.5 Compact, medium gray, SILT, some fine sand, moist, heavy petroleum odor. (TRANSITIONAL BEDS)	ML	0.3					
	At 3.5 to 4 feet, PID: 88 ppm At 4 to 5 feet, PID: 44 to 52 ppm			1	SPT	5-7-7	14	1.2 / 1.5
5	5.5 - 10.5 Stiff, olive gray, CLAYEY SILT, with light gray, fine sand laminae.		37.0 5.5					
	From 6.5 feet to 7 feet, PID: 28 ppm From 7 feet to 8 feet, PID: 10 ppm	ML/CL		2	SPT	1-4-5	9	1.5 / 1.5
	From 9 feet to 9.5 feet, PID: 18 ppm From 9.5 feet to 10.5 feet, PID: 4 to 8 ppm			3	SPT	4-5-7	12	1.5 / 1.5
10	10.5 - 13.0 Compact, olive gray, SILT, trace fine sand, with light gray, fine sand laminae, moist. PID: 9 ppm	ML	32.0 10.5	4	SPT	3-5-11	16	1.5 / 1.5
	13.0 - 15.8 Dense, medium gray, fine SAND, some silt, interbedded with olive gray clayey silt, moist, 1-inch diameter rock in tip of sampler. PID: 1 - 2 ppm	SP	29.5 13.0	5	SPT	6-10-13	23	1.5 / 1.5
15	15.8 - 30.0 Stiff to very stiff, olive gray, massive, CLAYEY SILT, trace fine sand, moist. PID: 3 - 5 ppm		26.8 15.8	6	SPT	3-5-7	12	1.5 / 1.5
	At 18.5 feet: Becomes very stiff. PID: 0 ppm.	ML/CL		7	SPT	4-6-12	18	1.5 / 1.5
20	At 23.5 feet: Light gray, fine sand laminae observed.			8	SPT	5-7-13	20	1.5 / 1.5
25	Log continued on next page							

BORING METHOD: 4.25-inch I.D. HSA with 140lb. Autohammer

PENETRATION RESISTANCE BLOWS / ft ■
10 20 30 40
WATER CONTENT (PERCENT)
W_p — W — W_l

NOTES WATER LEVELS
GRAPHIC

Monument in Concrete
Bentonite Chips
2-inch PVC riser
10-20 Silica Sand
2-inch slotted PVC
Bentonite Chips
Bentonite Chips

2/25/03
2/21/03

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-6

SHEET 2 of 2

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/18/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 42.5
INCLINATION: -90

DEPTH (ft)	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft ■ (10 20 30 40) / WATER CONTENT (PERCENT) W_p W W_l	NOTES WATER LEVELS GRAPHIC
25		15.8 - 30.0 Stiff to very stiff, olive gray, massive, CLAYEY SILT, trace fine sand, moist. PID: 3 - 5 ppm *(Continued)* (same as above)	ML/CL									
						9	SPT	3-6-10	16	1.5 / 1.5	■	
30					12.5							
		Boring completed at 30.0 ft.			30.0							
35												
40												
45												
50												

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-7

SHEET 1 of 1

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA) DATUM:
DRILLING DATE: 2/18/03
DRILL RIG: Mobile B-59
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 41.5
INCLINATION: -90

DEPTH (ft)	BORING METHOD	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	NOTES WATER LEVELS GRAPHIC
0	4.25-inch I.D. HSA with 140lb. Autohammer	0.0 - 0.2 ASPHALT (SURFACING) 0.2 - 0.3 CRUSHED ROCK. PID: 5 ppm (SUBBASE) 0.3 - 12.5 Stiff, medium gray to olive gray, massive, CLAYEY SILT, trace fine sand, with steeply dipping (60 degrees) light gray fine sand and silt laminae, damp. (TRANSITIONAL BEDS)			0.3						
		At 3.5 feet, PID: 2 ppm From 4 feet to 4.5 feet, PID: 0 ppm				1	SPT	3-4-4	8	1.5/1.5	
5		At 6 feet, PID: 0 ppm Becomes medium gray.	ML/CL			2	SPT	2-3-7	10	1.5/1.5	Bentonite Chips
		Becomes very stiff. PID: 0 ppm Occasional fine gravel.				3	SPT	3-5-9	14	1.5/1.5	
10		From 10.5 feet to 12 feet, PID: 0 ppm				4	SPT	3-4-9	13	1.5/1.5	
		12.5 - 14.5 Compact, dark gray, fine to medium SAND, some silt, interbedded with medium gray, CLAYEY SILT, moist. PID: 0 ppm	SP		29.0 12.5	5	SPT	4-8-13	21	1.5/1.5	
15		Boring completed at 14.5 ft.			27.0 14.5						
20											
25											

PENETRATION RESISTANCE BLOWS / ft ■ (10, 20, 30, 40)
WATER CONTENT (PERCENT) w_p — w — w_l

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-8

SHEET 1 of 1

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/18/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 43.5
INCLINATION: -90

DEPTH (ft)	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft (10 20 30 40) / WATER CONTENT (PERCENT) W_p W W_l	NOTES WATER LEVELS GRAPHIC
0	4.25-inch I.D. HSA with 140lb. Autohammer	0.0 - 0.1 ASPHALT (SURFACING) 0.1 - 0.3 CONCRETE 0.3 - 0.6 CRUSHED ROCK (SUBBASE) PID: 14 ppm			42.9 / 0.6							
		0.6 - 10.0 Stiff, medium gray, massive, CLAYEY SILT, with light gray, fine sand laminae, damp. PID: 0 ppm (TRANSITIONAL BEDS)	ML/CL			1	SPT	2-4-5	9	1.5/1.5		
5		At 6 feet: Becomes very stiff. PID: 0 ppm				2	SPT	7-8-9	17	1.5/1.5		
						3	SPT	2-3-4	7	1.5/1.5		
10		10.0 - 12.8 Compact, medium gray, massive, fine to medium SAND and SILT, moist. PID: 0 ppm	SP/ML		33.5 / 10.0	4	SPT	4-10-12	22	1.5/1.5		
		12.8 - 14.5 Very stiff, olive gray, massive, CLAYEY SILT, trace fine sand, with light gray, fine sand laminae, moist, 1-inch gravel at 14 ft. PID: 0 ppm	ML/CL		30.8 / 12.8	5	SPT	3-5-9	14	1.5/1.5		
15		Boring completed at 14.5 ft.			29.0 / 14.5							Bentonite Chips
20												
25												

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03

RECORD OF BOREHOLE GB-9

SHEET 1 of 1

PROJECT: WWREG/75 State Street/WA
PROJECT NUMBER: 033-1562-100
LOCATION: 75 State Street, Kirkland, WA
DRILLING METHOD: Hollow Stem Auger (HSA)
DRILLING DATE: 2/18/03
DRILL RIG: Mobile B-59
DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed
ELEVATION: 44
INCLINATION: -90

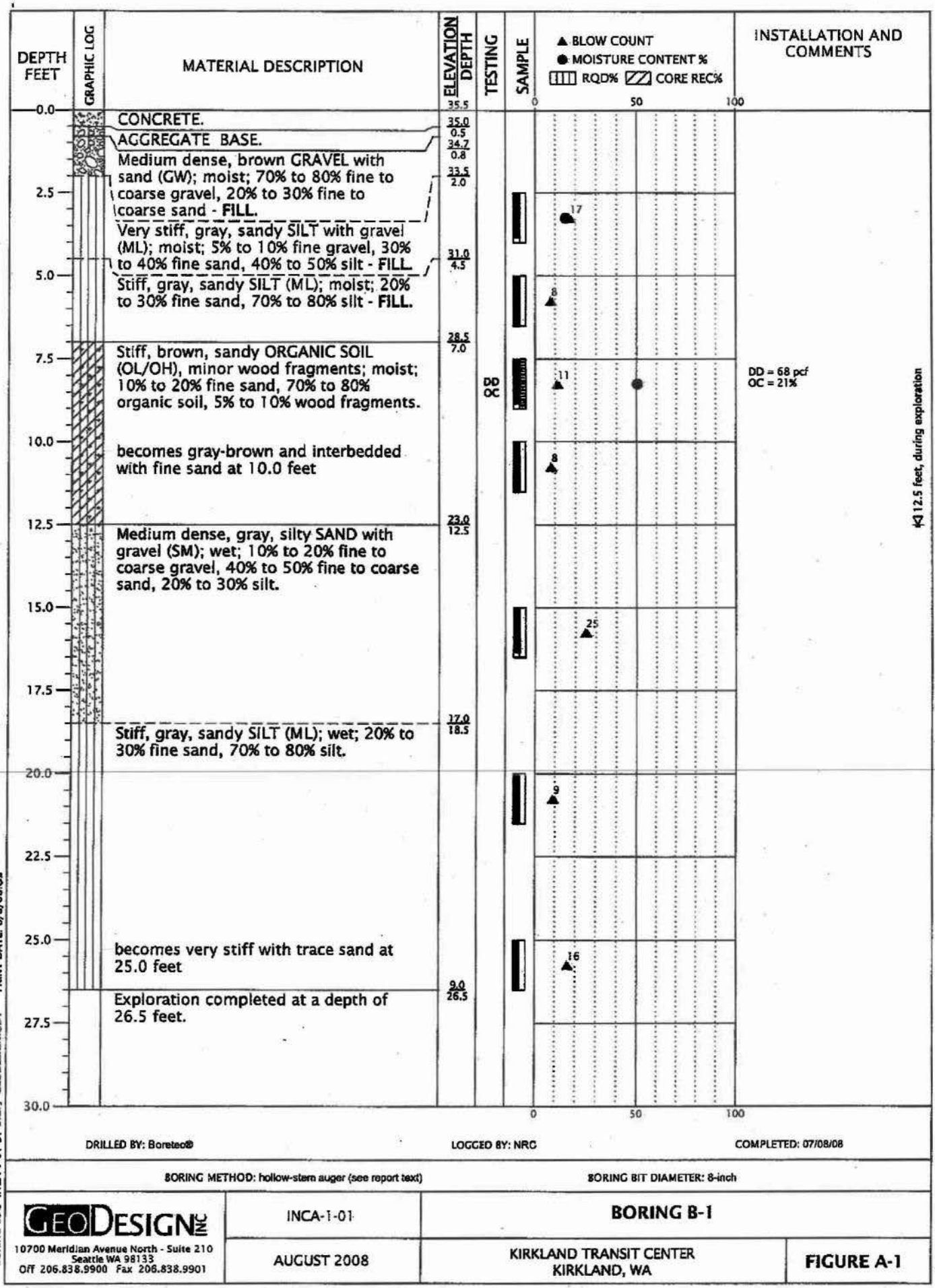
DEPTH (ft)	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft (10 20 30 40) / WATER CONTENT (PERCENT) W_p W W_l	NOTES WATER LEVELS GRAPHIC
0	4.25-inch I.D. HSA with 140lb. Autohammer	0.0 - 0.2 ASPHALT (SURFACING) 0.2 - 0.3 CRUSHED ROCK (SUBBASE) 0.3 - 5.5 Soft, olive gray, SILT, trace fine sand, moist. (TRANSITIONAL BEDS)	ML		0.3							
						1	SPT	0-0-2	2	0.7 / 1.5		
5		At 4.5 feet: Becomes stiff, medium gray, SILT, trace fine sand, with steeply dipping, light gray, fine sand and silt laminae. PID: 2.5 ppm			38.5 / 5.5							
		5.5 - 13.0 Very stiff, medium gray, massive, CLAYEY SILT, with light gray, fine sand and silt laminae, damp. PID: 0 ppm				2	SPT	3-5-7	12	1.5 / 1.5		
		At 9 feet: interbeds of light gray to olive gray, fine to medium sand. PID: 0 ppm	ML/CL			3	SPT	4-8-13	21	1.5 / 1.5		
10												Bentonite Chips
						4	SPT	4-10-16	26	1.5 / 1.5		
					31.0							
		13.0 - 14.5 Compact, olive gray, fine to medium SAND, some silt, moist. PID: 0 ppm	SP/SM		13.0							
					29.5	5	SPT	9-9-9	18	1.5 / 1.5		
		14.5 - 20.0 Very stiff, olive gray, massive, CLAYEY SILT, with steeply dipping, light gray fine sand and silt laminae. PID: 0 ppm			14.5							
15												
						6	SPT	4-7-12	19	1.5 / 1.5		
			ML/CL									
						7	SPT	3-5-9	14	1.5 / 1.5		
20					24.0							
		Boring completed at 20.0 ft.			20.0							
25												

1 in to 3 ft
DRILLING CONTRACTOR: Holt Drilling
DRILLER: Mike Reynolds

LOGGED: T. Marshall
CHECKED: RDL
DATE: 7/9/03

Golder Associates

BOREHOLE RECORD BORE.GPJ GLDR_WA.GDT 7/9/03



GEODESIGN INC
10700 Meridian Avenue North - Suite 210
Seattle WA 98133
Off 206.838.9900 Fax 206.838.9901

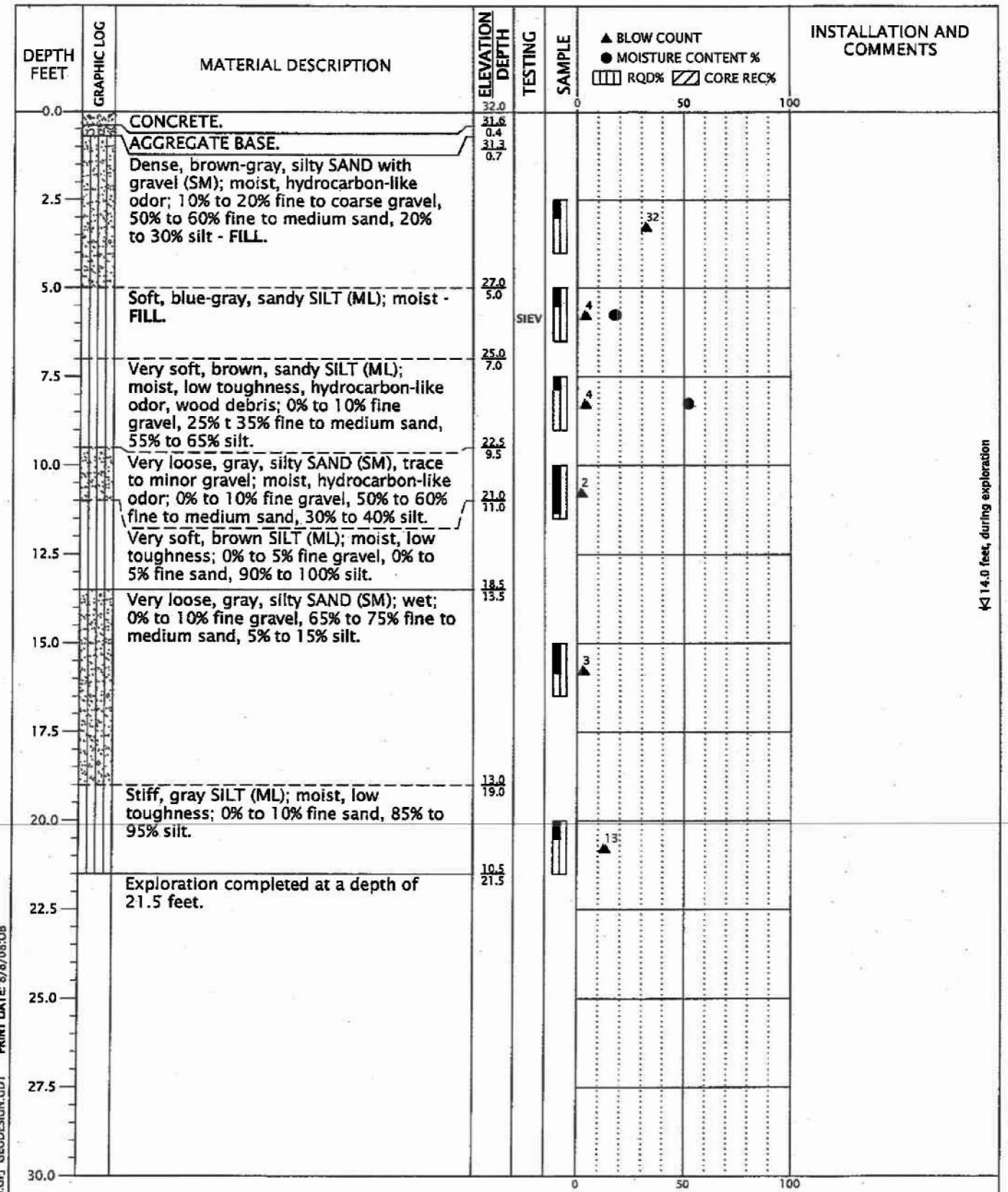
INCA-1-01

BORING B-1

AUGUST 2008

KIRKLAND TRANSIT CENTER
KIRKLAND, WA

FIGURE A-1



DRILLED BY: Boretec®

LOGGED BY: HFH

COMPLETED: 07/07/08

BORING METHOD: hollow-stem auger (see report text)

BORING BIT DIAMETER: 8-inch

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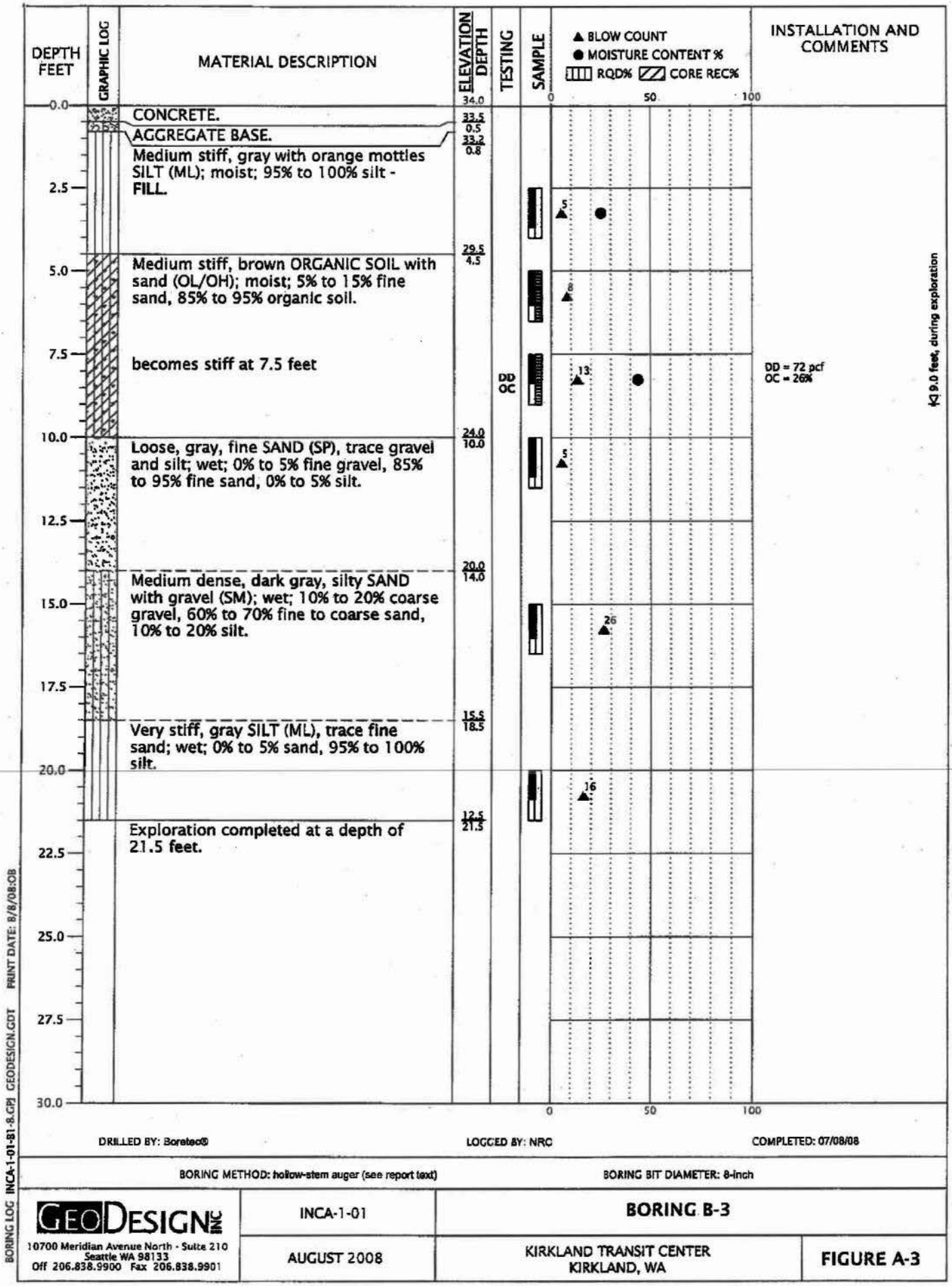
BORING B-2

AUGUST 2008

KIRKLAND TRANSIT CENTER
KIRKLAND, WA

FIGURE A-2

BORING LOG INCA-1-01-B-2.GPJ GEODESIGN.GDT PRINT DATE: 8/8/08:OB



DRILLED BY: Boretec®

LOGGED BY: NRC

COMPLETED: 07/08/08

BORING METHOD: hollow-stem auger (see report text)

BORING BIT DIAMETER: 8-inch

BORING LOG INCA-1-01-B1-8.GPJ GEODESIGN.GDT PRINT DATE: 8/8/08:OB

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BORING B-3

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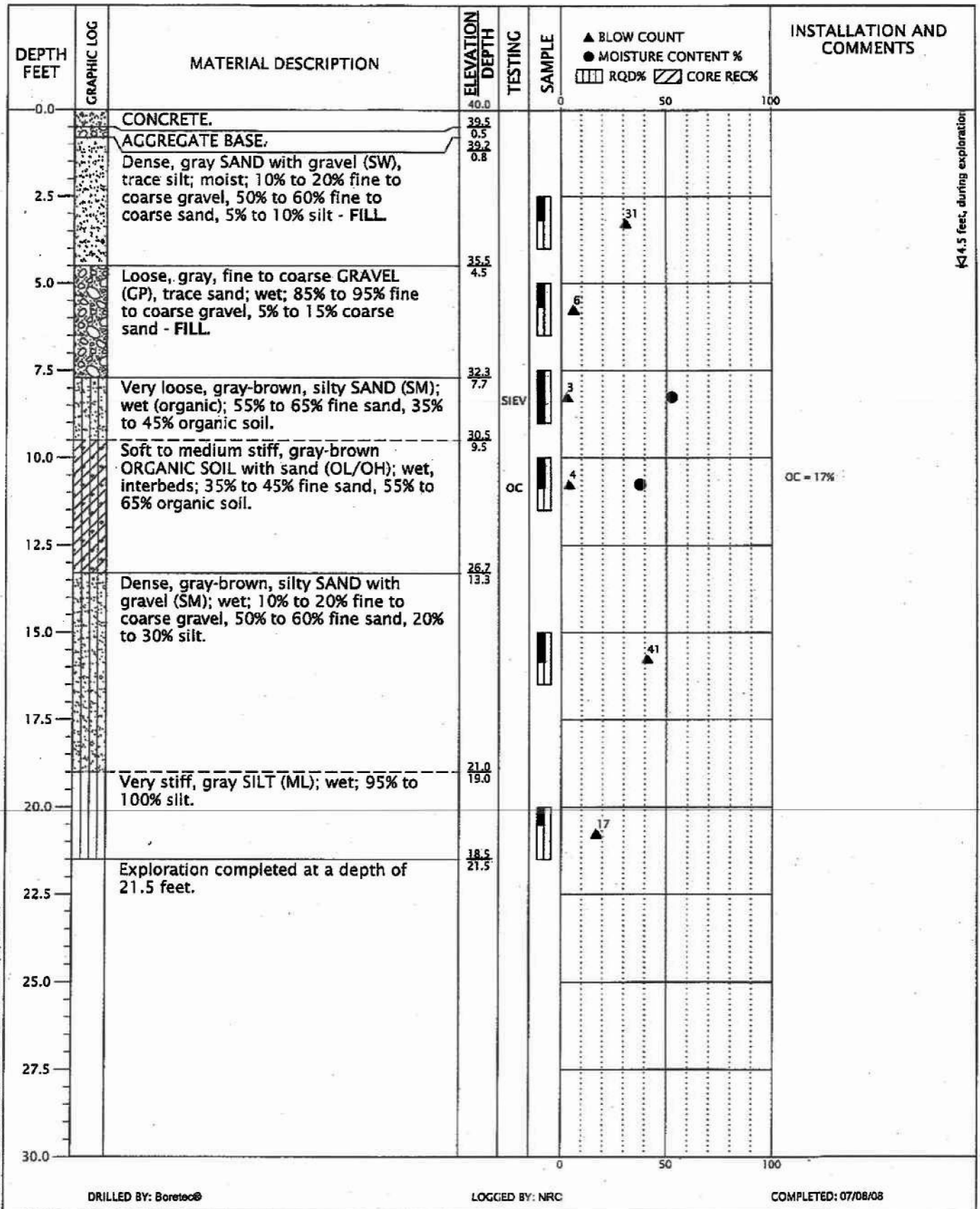
KIRKLAND TRANSIT CENTER
KIRKLAND, WA

FIGURE A-3



BORING LOG INCA-1-01-B1-B.GPJ GEODESIGN.GDT PRINT DATE: 8/8/08:OB

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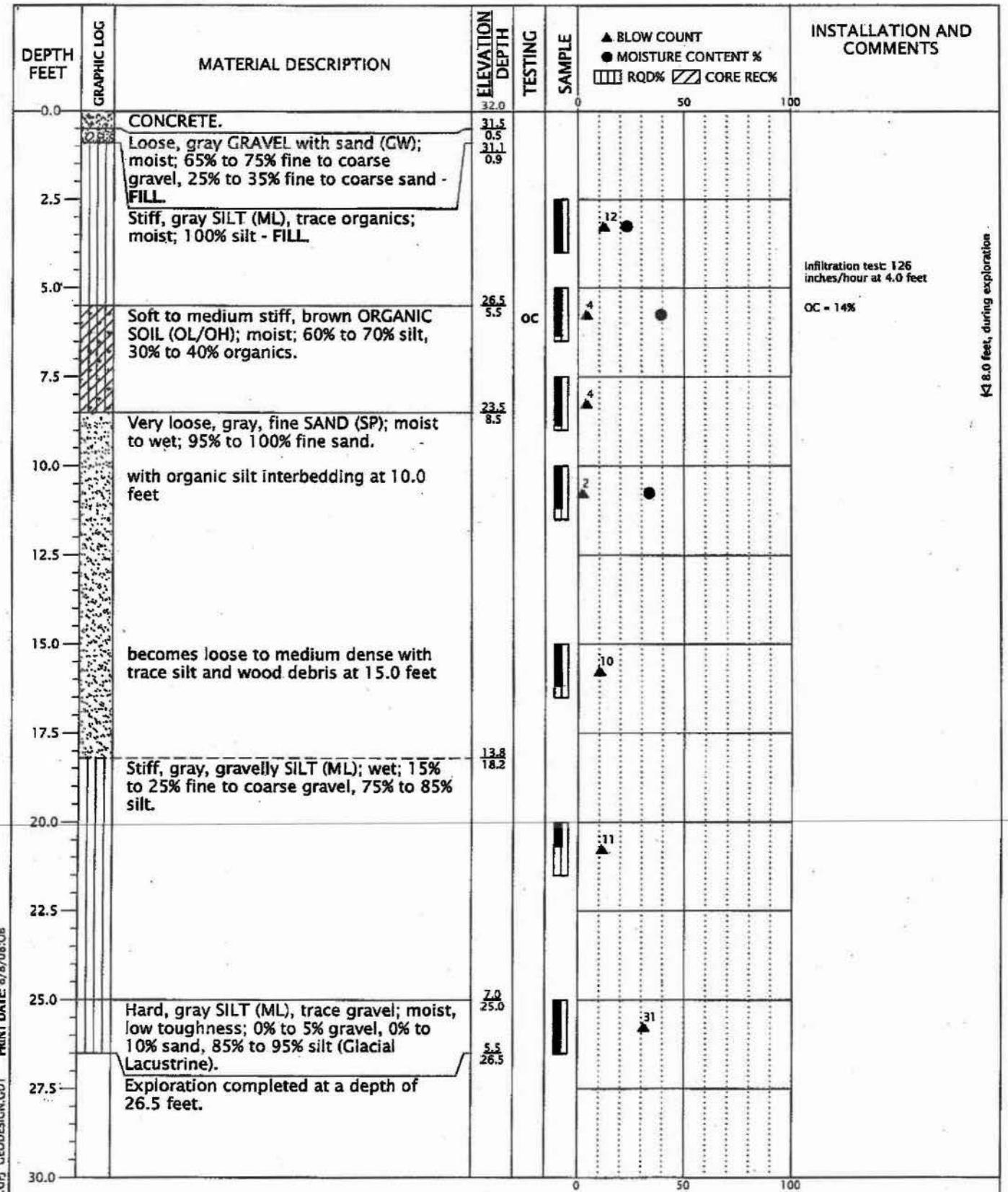
INCA-1-01	BORING B-4	
AUGUST 2008	KIRKLAND TRANSIT CENTER KIRKLAND, WA	FIGURE A-4



DRILLED BY: Boretec®

LOGGED BY: NRG

COMPLETED: 07/08/08

BORING METHOD: hollow-stem auger (see report text)

BORING BIT DIAMETER: 8-inch

BORING LOG INCA-1-01-B1-B.GPJ GEODESIGN.GDT PRINT DATE: 8/8/08:OB

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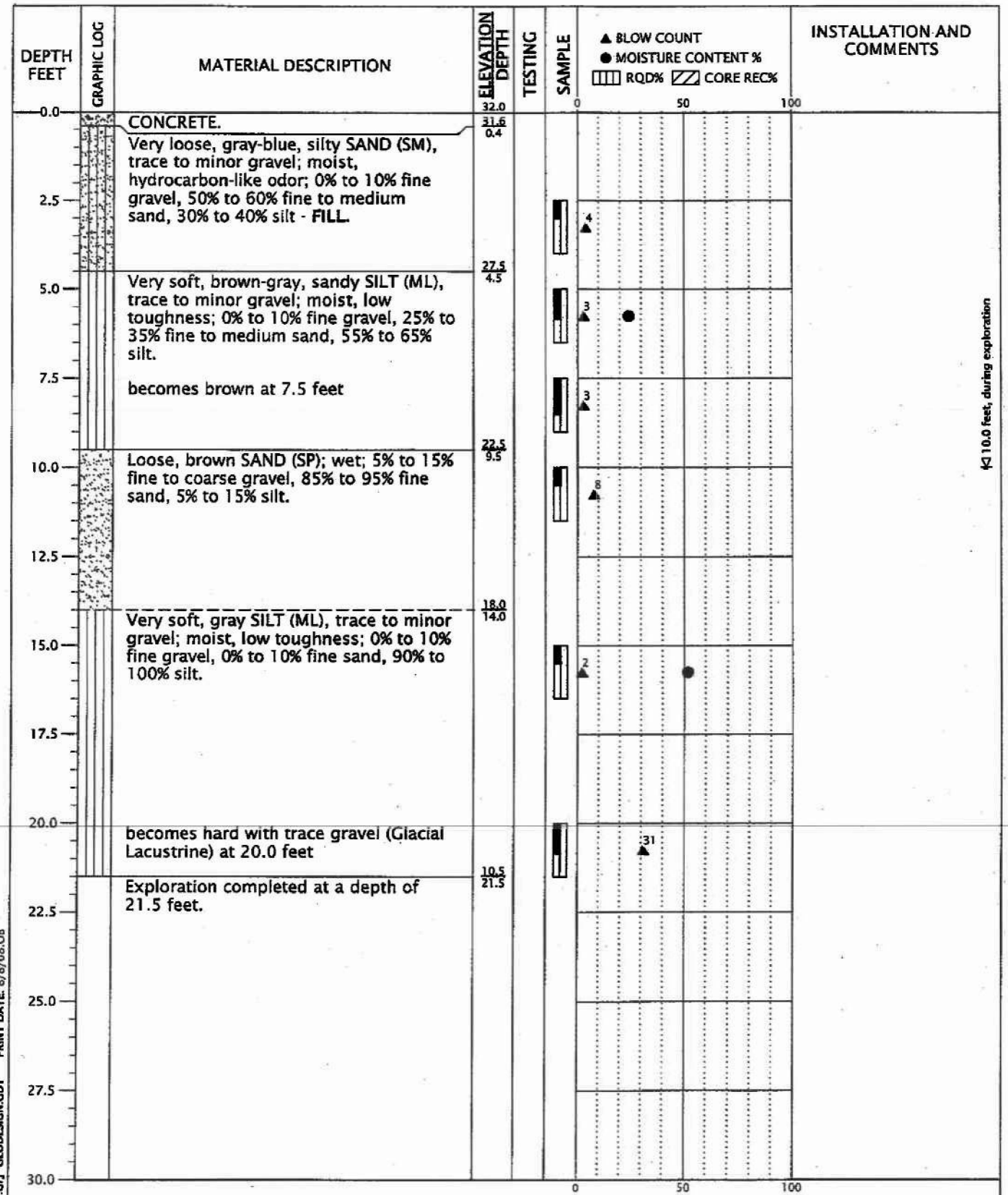
BORING B-5

AUGUST 2008

KIRKLAND TRANSIT CENTER
KIRKLAND, WA

FIGURE A-5



DRILLED BY: Boretec®

LOGGED BY: HFH

COMPLETED: 07/07/08

BORING METHOD: hollow-stem auger (see report text)

BORING BIT DIAMETER: 8-inch

BORING LOG INCA-1-01-B1-B.GPJ GEODESIGN.GDT PRINT DATE: 8/8/08:OB

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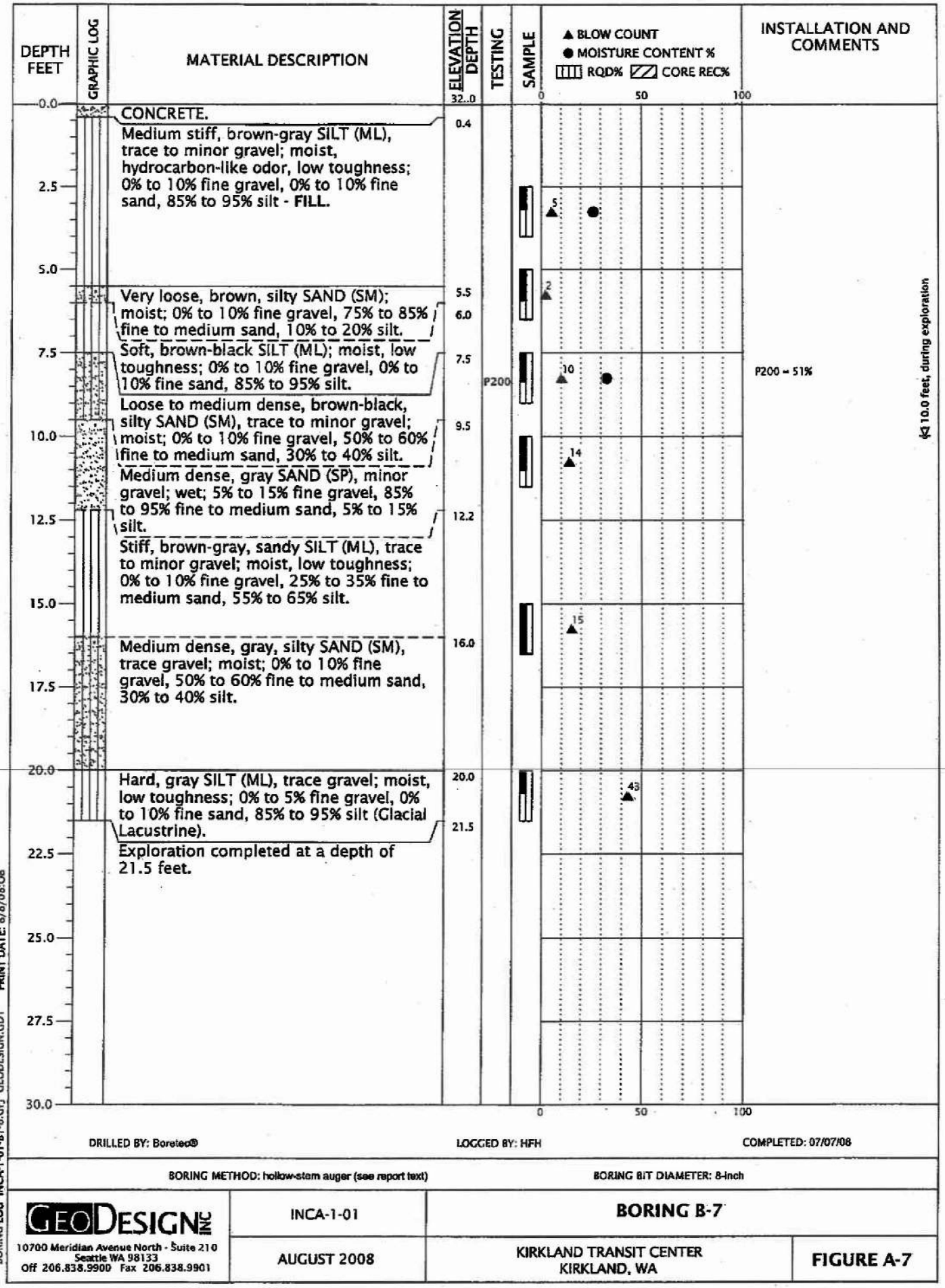
BORING B-6

AUGUST 2008

KIRKLAND TRANSIT CENTER
KIRKLAND, WA

FIGURE A-6



BORING LOG INCA-1-01-B1-8.GPJ GEODESIGN.GDT PRINT DATE: 8/8/08:08

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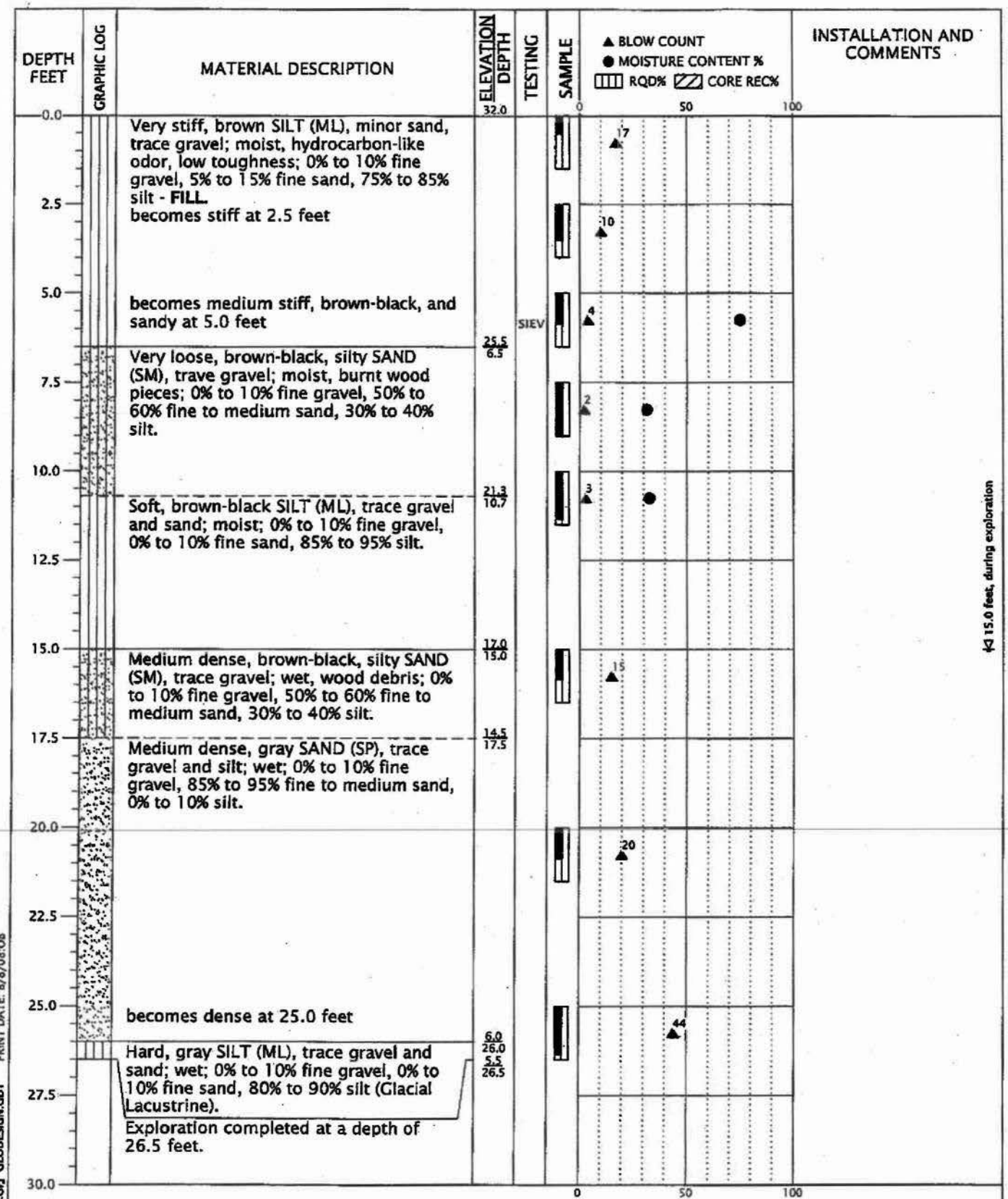
BORING B-7

AUGUST 2008

KIRKLAND TRANSIT CENTER
KIRKLAND, WA

FIGURE A-7



DRILLED BY: Boretec®

LOGGED BY: HFH

COMPLETED: 07/07/08

BORING METHOD: hollow-stem auger (see report text)

BORING BIT DIAMETER: 8-inch

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BORING B-8

AUGUST 2008

KIRKLAND TRANSIT CENTER
KIRKLAND, WA

FIGURE A-8

BORING LOG INCA-1-01-B1-8.GPJ GEODESIGN.GDT PRINT DATE: 8/8/08 08

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RESOURCE PROTECTION WELL REPORT

25/5E/5P

King Co. START CARD NO. 43854

PROJECT NAME: CITY OF KIRKLAND – PETER KIRK PARK

WELL INDENTIFICATION NO. MW-1

DRILLING METHOD: WELL ABANDONMENT

DRILLER: JON C. KOLOSKI

FIRM: GEOENGINEERS INC.

SIGNATURE: Jon C. Koloski

CONSULTING FIRM: SAME

REPRESENTATIVE: SAME

LOCATION: T 25 N, R 5E, SEC. 5 SE 1/4 of SW 1/4

DISTANCE: _____ FT. FROM N/S SECTION LINE

_____ FT. FROM E/W SECTION LINE

DATUM: _____

WATER LEVEL ELEVATION: _____

INSTALLED: ABANDONED ON 2-19-93

DEVELOPED: _____

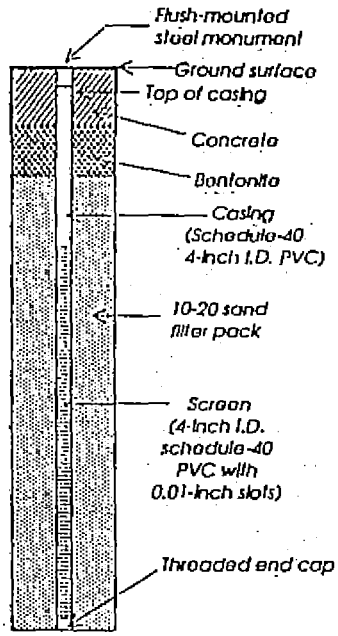
PROJECT: *Kirkland Resource Library* W.O. *W-8182* WELL NO. *MW-1*

Elevation reference: Well completed: *8 April 1992*

Ground surface elevation: *41 feet* Casing elevation:

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	*Surface-grass in lawn area*					
	Medium stiff, wet, grey with brown mottling SILT with some gravel (Fill)		S-1	7	1ppm	
5	*Medium stiff, wet, grey SILT with trace gravel and burnt organics interbedded with loose, wet, grey fine to medium SAND with trace silt and burnt organics (Fill)*		S-2	8	1ppm	
			S-3	4	1ppm	4/13/92
10	*Loose, saturated, dark grey fine to medium SAND with trace burnt organics (Fill)*		S-4	4	1ppm	
	Very stiff, wet, mottled grey-brown SILT		S-5	26	1ppm	
15			S-6	23	1ppm	
	Stiff, moist to wet, mottled rusty brown-grey SILT, interbedded with medium dense, moist, grey fine to medium SAND		S-7	14	1ppm	
20						
	Very stiff, wet, grey SILT with trace fine SAND		S-8	21	1ppm	
25						
	Hard, wet, grey SILT with trace fine sand		S-9	31	1ppm	
30						

AS-BUILT DESIGN



Page of 2

TEST

LEGEND

I 2-inch O.D. split-spoon sample

△ Chemical analysis (groundwater sample)

▽ 4/13/92 Observed groundwater level 0/00/00 = date observed

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

RESOURCE PROTECTION WELL REPORT

25/5E/5P

START CARD NO. 43854

PROJECT NAME: CITY OF KIRKLAND – PETER KIRK PARK

WELL INDENTIFICATION NO. MW-2

DRILLING METHOD: WELL ABANDONMENT

DRILLER: JON C. KOLOSKI

FIRM: GEOENGINEERS, INC.

SIGNATURE: Jon C Koloski

CONSULTING FIRM: SAME

REPRESENTATIVE: SAME

LOCATION: T 25 N, R 5E, SEC. 5 SE 1/4 of SW 1/4

DISTANCE: _____ FT. FROM N/S SECTION LINE

_____ FT. FROM E/W SECTION LINE

DATUM: _____

WATER LEVEL ELEVATION: _____

INSTALLED: ABANDONED ON 2-19-93

DEVELOPED: _____

PROJECT: *Kirkland Resource Library* W.O. *W-8182* WELL NO. *MW-2*

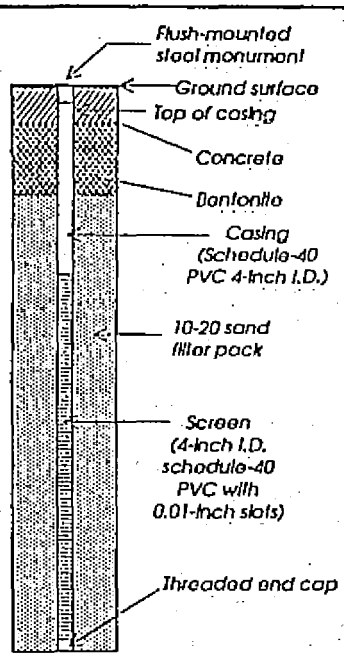
Elevation reference: Well completed: *9 April 1992*

Ground surface elevation: *41 feet* Casing elevation:

Page 1 of 2

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	*Surface-grass in park lawn area*					
	Stiff, wet, grey SILT with trace fine to medium sand and burnt organics (Fill)		S-1	10	1ppm	
5			S-2	12	1ppm	4/13/92
	Loose to medium dense, saturated, grey fine to coarse SAND with trace gravel and burnt organics (Fill)		S-3	9	1ppm	
10	*Very stiff, wet, tan-brown SILT*		S-4	20	1ppm	
	Very stiff, wet, tan-brown with occasional rust mottling SILT		S-5	25	1ppm	
15	*Hard, wet, grey SILT*		S-6	43	1ppm	
			S-7	35	1ppm	
20						
	Hard, wet, grey SILT with trace fine sand		S-8	32	1ppm	
25						
	Very stiff, wet, grey SILT with trace to some fine sand		S-9	23	11 ppm	
30						

AS-BUILT DESIGN



TESTING

LEGEND

I 2-inch O.D. split-spoon sample

▽ 4/13/92 Observed groundwater level 0/00/00 = date observed

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RESOURCE PROTECTION WELL REPORT

25/5E/5P

START CARD NO. 43854

PROJECT NAME: CITY OF KIRKLAND – PETER KIRK PARK

WELL INDENTIFICATION NO. MW-3

DRILLING METHOD: WELL ABANDONMENT

DRILLER: JON C. KOLOSKI

FIRM: GEOENGINEERS INC.

SIGNATURE: Jon C Koloski

CONSULTING FIRM: SAME

REPRESENTATIVE: SAME

LOCATION: T 25 N, R 5E, SEC. 5 SE 1/4 of SW 1/4

DISTANCE: _____ FT. FROM N/S SECTION LINE

_____ FT. FROM E/W SECTION LINE

DATUM: _____

WATER LEVEL ELEVATION: _____

INSTALLED: ABANDONED ON 2-19-93

DEVELOPED: _____

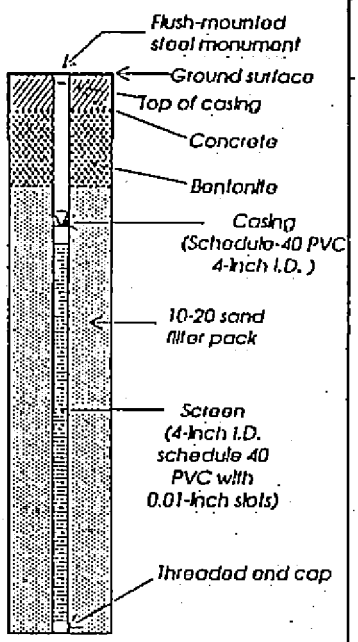
PROJECT: *Kirkland Resource Library* W.O. *W-8182* WELL NO. *MW-3*

Elevation reference: Well completed: *2 April 1992*

Ground surface elevation: *33 foot* Casing elevation:

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	*Surface-2 1/2" thick asphaltic concrete in parking area*					
	Soft to medium stiff, wet, grey-brown SILT with trace gravel (Fill). Dark discoloration, petroleum hydrocarbon-like odor noted in sample		S-1	5	116 ppm	▽ 4/13/92
5	*Interbedded soft, saturated, brown fibrous PEAT and very loose, saturated, grey medium SAND*		S-2	3	0ppm	
	Very loose, saturated, gray fine to medium SAND		S-3	1	0ppm	
10	*Medium dense, saturated, grey fine to medium SAND with trace silt and gravel interbedded with stiff, wet, brown organic SILT*		S-4	20	0ppm	
			S-5	18	7ppm	
15	*Very stiff, wet, tan-grey with rust mottling SILT with some fine to medium sand and trace gravel*		S-6	25	0ppm	
			S-7	22	0ppm	
20	*Very stiff, wet, grey SILT with trace fine sand*					
	Very stiff, wet, gray, fine sandy SILT		S-8	25	0ppm	
25						
	Very stiff to hard, wet, grey SILT with trace to some fine sand		S-9	30	0ppm	
30						

AS-BUILT DESIGN



LEGEND

I 2-inch O.D. split-spoon sample

▽ 4/13/92 Observed groundwater level 0/00/00 = date observed

⚠ Chemical analysis (sample no. shown)

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

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RESOURCE PROTECTION WELL REPORT

25/5E/5P

START CARD NO. 43854

PROJECT NAME: CITY OF KIRKLAND – PETER KIRK PARK
WELL INDENTIFICATION NO. MW-4
DRILLING METHOD: WELL ABANDONMENT
DRILLER: JON C. KOLOSKI
FIRM: GEOENGINEERS INC.
SIGNATURE: Jon C. Koloski
CONSULTING FIRM: SAME
REPRESENTATIVE: SAME

LOCATION: T 25 N, R 5E, SEC. 5 SE 1/4 of SW 1/4
DISTANCE: _____ FT. FROM N/S SECTION LINE
_____ FT. FROM E/W SECTION LINE
DATUM: _____
WATER LEVEL ELEVATION: _____
INSTALLED: ABANDONED ON 2-19-93
DEVELOPED: _____

PROJECT: *Kirkland Resource Library* W.O. *W-8182* WELL NO. *MW-4*

Elevation reference: Well completed: *7 April 1992*
Ground surface elevation: *32 feet* Casing elevation:

AS-BUILT DESIGN

Page 1 of 2

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
0	*Surface-2 1/2" asphaltic concrete in parking area*						
	Soft, wet, gray-brown SILT with some gravel, trace organics and brick fragments (Fill)		S-1	3	1ppm		
5	*Very soft, saturated, brown amorphous PEAT with some organics (wood and trace fine to medium sand*		S-2	2	1ppm	4/13/92	
			S-3	4	1ppm		
	Loose, saturated, grey fine to medium SAND						
10	*Contains some intermixed organics*		S-4	9	1ppm		
	Contains trace gravel		S-5	8	1ppm		
15	*Medium dense, saturated, grey fine to coarse SAND*		S-6	16	1ppm		
	Dense to very dense, wet, grey, silty fine to medium SAND with some gravel		S-7	54	1ppm		
20							
	Loose, saturated, grey fine to medium SAND with trace organics		S-8	10	1ppm		
	Stiff, wet, grey SILT with trace fine sand						
25							
	Very stiff, wet, grey SILT with trace to some fine sand		S-9	18	1ppm		
30							

AS-BUILT DESIGN:
- Flush-mounted steel monument
- Ground surface
- Top of casing
- Concrete
- Bentonite
- Casing (Schedule-40 PVC 4-inch I.D.)
- 10-20 sand filter pack
- Screen (4-inch I.D. PVC with schedule 40 0.01-inch slots)
- Threaded end cap

LEGEND

I 2-inch O.D. split-spoon sample

▽ 4/13/92 Observed groundwater level 0/00/00 = date observed

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

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RESOURCE PROTECTION WELL REPORT

25/5E/5P

START CARD NO. 43854

PROJECT NAME: CITY OF KIRKLAND – PETER KIRK PARK

WELL INDENTIFICATION NO. MW-5

DRILLING METHOD: WELL ABANDONMENT

DRILLER: JON C. KOLOSKI

FIRM: GEOENGINEERS INC.

SIGNATURE: Jon C Koloski

CONSULTING FIRM: SAME

REPRESENTATIVE: SAME

LOCATION: T 25 N, R 5E, SEC. 5 SE 1/4 of SW 1/4

DISTANCE: _____ FT. FROM N/S SECTION LINE

_____ FT. FROM E/W SECTION LINE

DATUM: _____

WATER LEVEL ELEVATION: _____

INSTALLED: ABANDONED ON 2-19-93

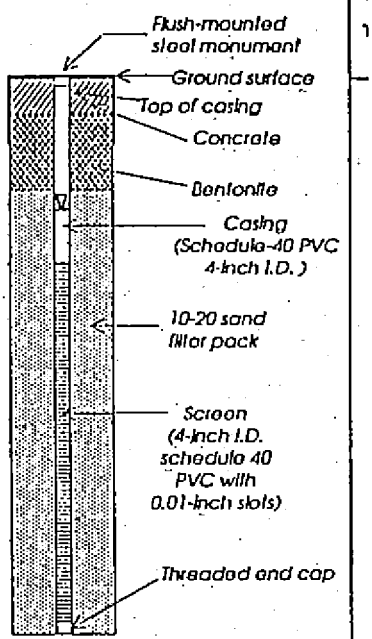
DEVELOPED: _____

PROJECT: *Kirkland Resource Library* W.O. *W-8182* WELL NO. *MW-5*

Elevation reference:
Ground surface elevation: *35 feet*
Well completed: *8 April 1992*
Casing elevation:

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	*Surface-3" asphaltic concrete in parking area*					
	Loose to medium dense, moist, grey-brown sandy GRAVEL/gravelly SAND (Fill)		S-1	26	4ppm	▽ 4/13/92
5	*Loose, wet, dark brown, fine to medium SAND (Fill). Prominent sheen and hydrocarbon-like odor observed in sample*		S-2	4	188 ppm	
	Very loose to loose, saturated, grey fine to medium SAND interbedded with soft, fibrous, PEAT		S-3	1	1ppm	
10	*Soft to medium stiff, wet, grey-brown SILT with trace organics interbedded with soft, fibrous PEAT*		S-4	6	1ppm	
	Dense, wet to saturated, grey silty GRAVEL with some fine to medium sand		S-5	36	1ppm	
15	*Medium dense, saturated, gray fine to medium SAND*		S-6	26	1ppm	
	Stiff to very stiff, wet, grey SILT with trace fine sand		S-7	13	4ppm	
20	*Very stiff, wet, grey SILT with trace fine sand*		S-8	20	1ppm	
25	*Medium dense, saturated, grey silty fine SAND/fine sandy SILT*		S-9	22	1ppm	
30						

AS-BUILT DESIGN



LEGEND

I 2-inch O.D. split-spoon sample

▽ 4/13/92 Observed groundwater level 0/00/00 = date observed

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

RESOURCE PROTECTION WELL REPORT

25/5E/5P

START CARD NO. 43854

PROJECT NAME: CITY OF KIRKLAND – PETER KIRK PARK

WELL INDENTIFICATION NO. MW-6

DRILLING METHOD: WELL ABANDONMENT

DRILLER: JON C. KOLOSKI

FIRM: GEOENGINEERS INC.

SIGNATURE: Jon C Koloski

CONSULTING FIRM: SAME

REPRESENTATIVE: SAME

LOCATION: T 25 N, R 5E, SEC. 5 SE 1/4 of SW 1/4

DISTANCE: _____ FT. FROM N/S SECTION LINE

_____ FT. FROM E/W SECTION LINE

DATUM: _____

WATER LEVEL ELEVATION: _____

INSTALLED: ABANDONED ON 2-19-93

DEVELOPED: _____

PROJECT: *Kirkland Resource Library* W.O. *W-8182* WELL NO. *MW-6*

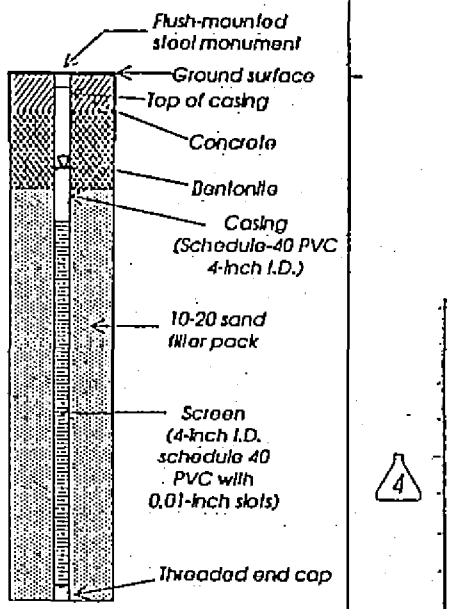
Elevation reference: Well completed: *2 April 1992*

Ground surface elevation: *33 feet* Casing elevation:

Page 1 of 2

Depth (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	*Surface - 2" asphaltic concrete in parking area*					
	Loose, wet to saturated, brown-gray silty, gravelly fine to medium SAND (FILL)		S-1	7	1ppm	▽ 4/13/92
5	*Loose, saturated, grey, gravelly fine to medium SAND/sandy GRAVEL with interbeds of brown organic SILT (FILL)*		S-2	4	10 ppm	
	Loose, saturated, gray fine to coarse SAND with some gravel interbedded with medium stiff, saturated, gray fine sandy SILT		S-3	2	1ppm	
0	*Medium dense, saturated, grey, gravelly medium to coarse SAND*		S-4	27	140 ppm	
			S-5	19	3ppm	
5	*Interbedded with silty fine sand*		S-6	24	7ppm	
	Medium dense, saturated, grey, gravelly fine to coarse SAND		S-7	20	3ppm	
0	*Interbedded with medium stiff, wet to saturated, gray fine sandy SILT*		S-8	9	7ppm	
			S-9	5	7ppm	
5	*Medium dense, saturated, grey, gravelly fine to medium SAND with some silt*		S-10	47	3ppm	
	Very dense, saturated, grey silty GRAVEL with trace to some fine to medium SAND		S-11	60	3ppm	

AS-BUILT DESIGN



LEGEND

I 2-inch O.D. split-spoon sample

▽ 4/13/92 Observed groundwater level 0/00/00 = date observed

4 Chemical analysis (sample no. shown)

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

RESOURCE PROTECTION WELL REPORT

25/5E/5P

START CARD NO. 43854

PROJECT NAME: CITY OF KIRKLAND – PETER KIRK PARK

WELL INDENTIFICATION NO. MW-7

DRILLING METHOD: WELL ABANDONMENT

DRILLER: JON C. KOLOSKI

FIRM: GEOENGINEERS INC.

SIGNATURE: Jon C Koloski

CONSULTING FIRM: SAME

REPRESENTATIVE: SAME

LOCATION: T 25 N, R 5E, SEC. 5 SE 1/4 of SW 1/4

DISTANCE: _____ FT. FROM N/S SECTION LINE

_____ FT. FROM E/W SECTION LINE

DATUM: _____

WATER LEVEL ELEVATION: _____

INSTALLED: ABANDONED ON 2-19-93

DEVELOPED: _____

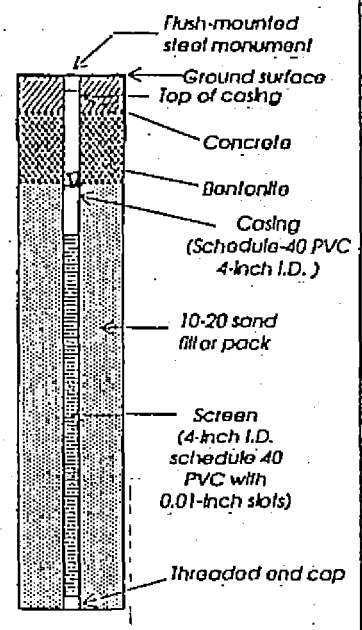
PROJECT: *Kirkland Resource Library* W.O. *W-8182* WELL NO. *MW-7*

Elevation reference:
Ground surface elevation: *34 feet*
Well completed: *8 April 1992*
Casing elevation:

Page 1 of 2

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	*Surface - 2 1/2" asphaltic concrete in parking area*					
	Soft, wet, grey SILT with some gravel (Fill)		S-1	4	1ppm	▽ 4/13/92
5	*Very loose to loose, saturated, grey fine to medium SAND with trace intermixed organics*		S-2	4	1ppm	
			S-3	3	1ppm	
	Interbedded with soft, brown, amorphous PEAT					
10			S-4	13	1ppm	
	Medium dense, saturated, grey silty sandy GRAVEL/silty gravelly SAND		S-5	15	1ppm	
15	*Bottom of boring at 15 feet.*					
20						
25						
30						

AS-BUILT DESIGN



TESTING

LEGEND

I 2-inch O.D. split-spoon sample

▽ 4/13/92 Observed groundwater level 0/00/00 = date observed

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

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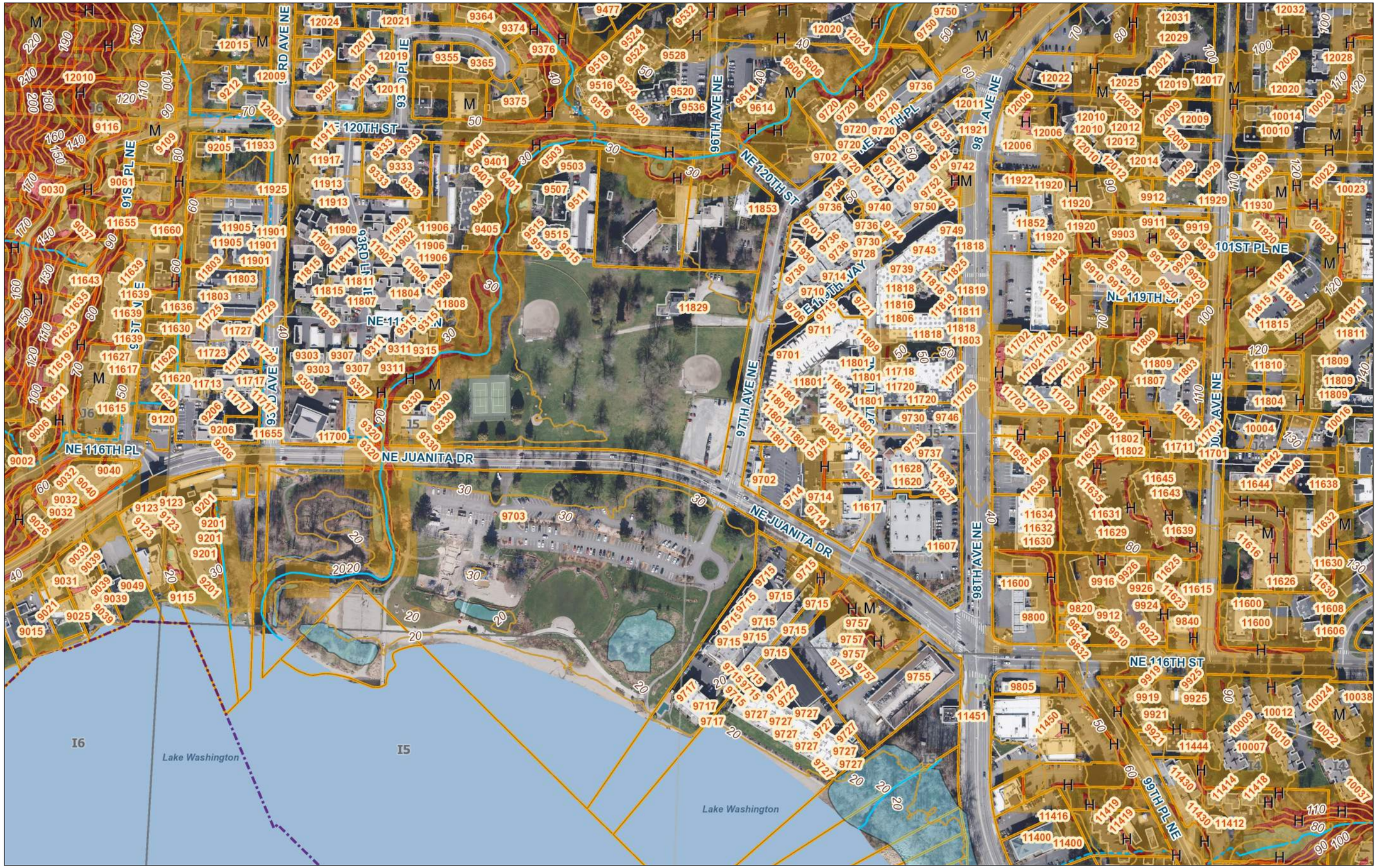
APPENDIX A.4
REFERENCE INFORMATION FOR JUANITA BEACH PARK

Included in this section are City of Kirkland Landslide Susceptibility Map and Liquefaction Susceptibility Map, and exploration logs from previous studies completed in the immediate vicinity of the project site.

City of Kirkland GIS



Legend

- Contours 10 Feet
- Streams
  - Open
  - Pipe
- Landslide
  - Deposit Areas
  - Head Scarps
  - High Susceptibility
  - Moderate Susceptibility
- Wetlands
- Address
- City Limits
- Grid
- QQ Grid
- Regional Rail Corridor
- Cross Kirkland Corridor
- Streets
- Parcels
- Buildings
- Lakes

1: 3,000

0.1 0 0.05 0.1 Miles

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

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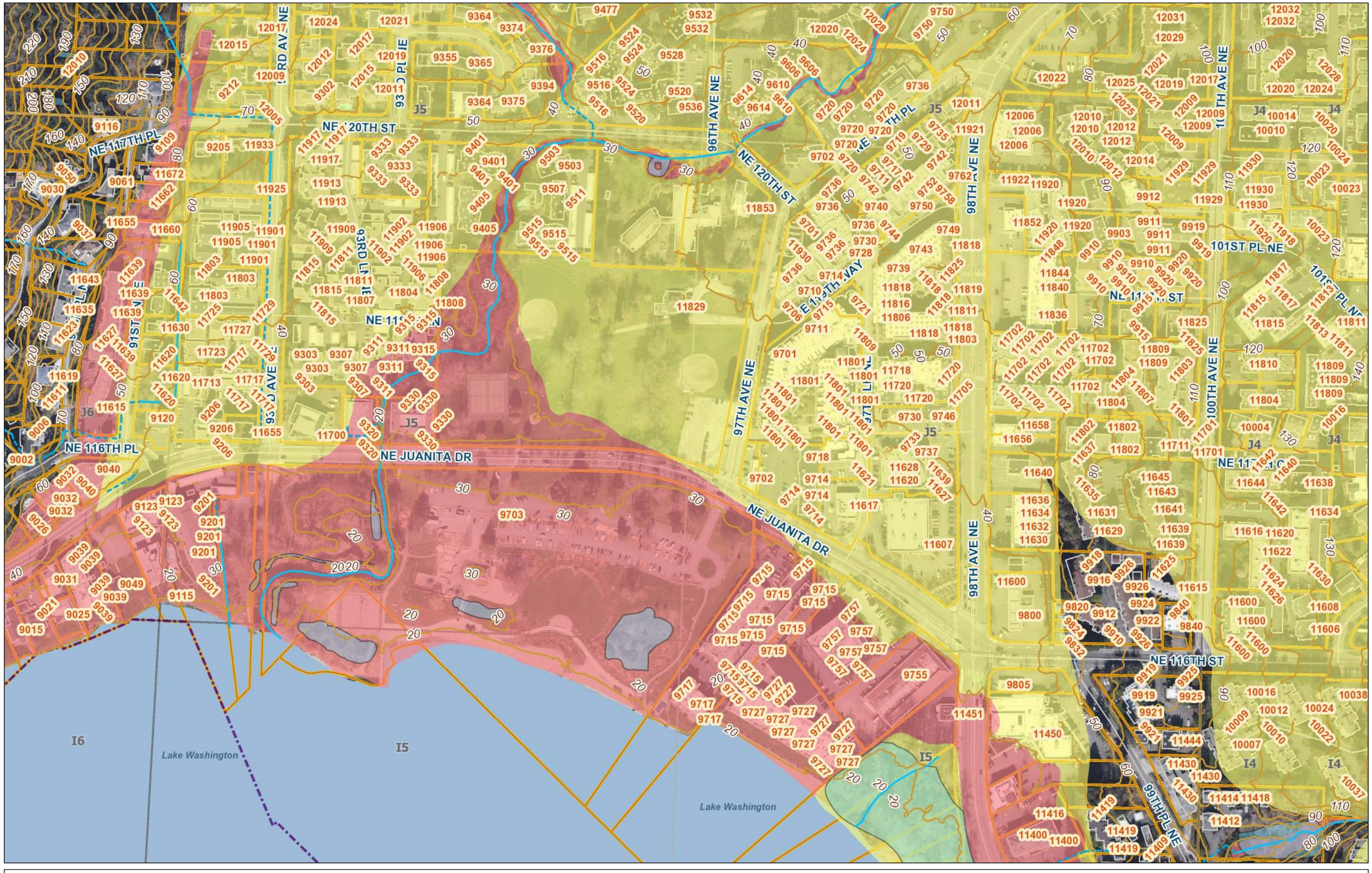
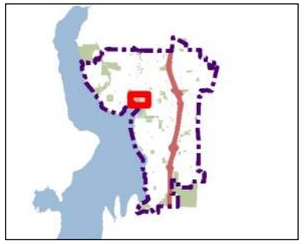
Notes

This map was automatically generated using Geocortex Essentials.

City of Kirkland GIS





Legend

- Contours 10 Feet
- Streams
  - Open
  - Pipe
- Wetlands
- Liquefaction Potential
  - High
  - Medium or Mixed
- Address
- City Limits
- Grid
- QQ Grid
- Regional Rail Corridor
- Cross Kirkland Corridor
- Streets
- Parcels
- Buildings
- Lakes

1: 3,000

0.1 0 0.05 0.1 Miles

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

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No warranties of any sort, including but not limited to accuracy, fitness, or merchantability, accompany this product.

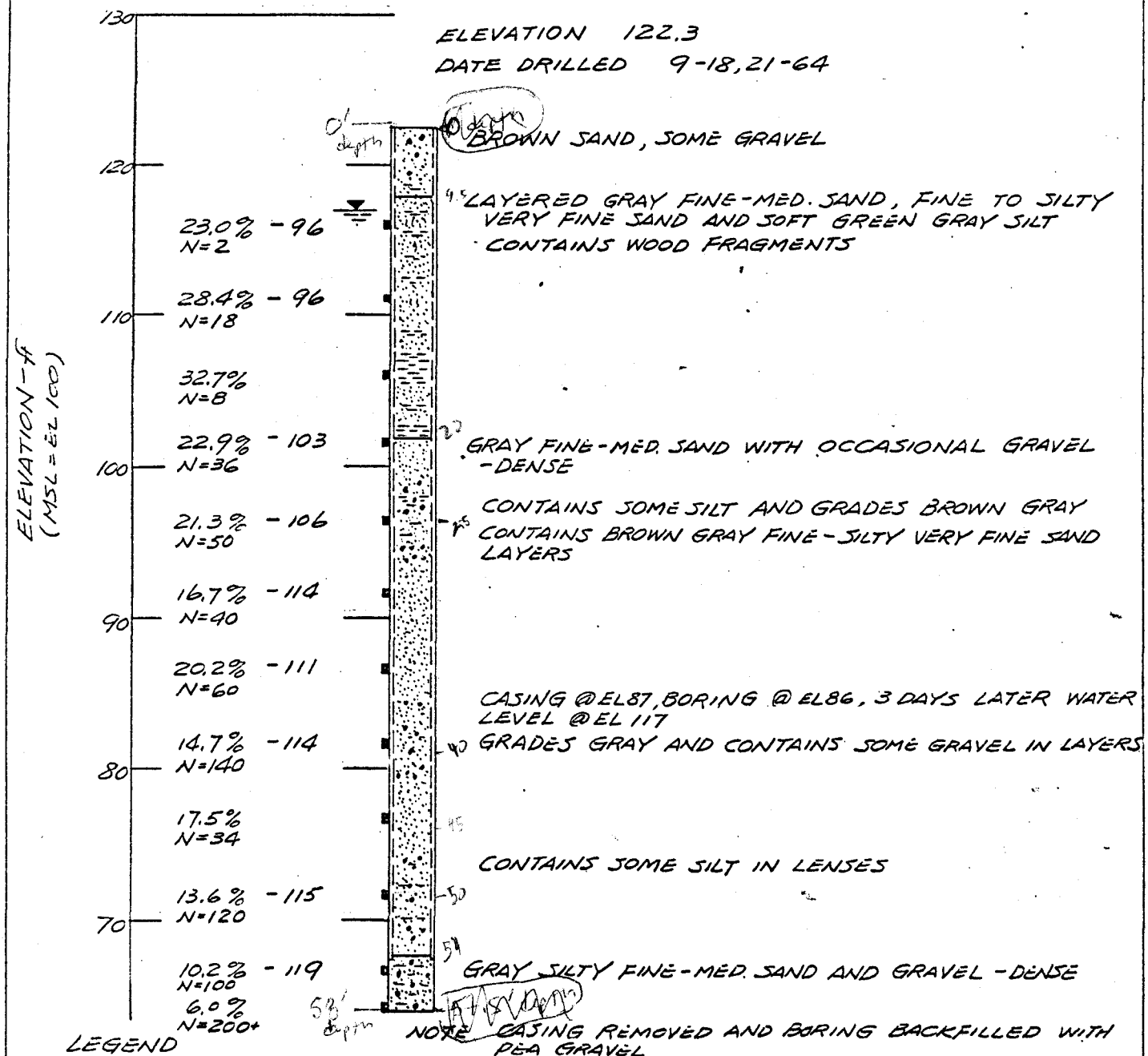
Notes

This map was automatically generated using Geocortex Essentials.

CALCULATION SHEET

METROPOLITAN ENGINEERS
SEATTLE, WASHINGTON

BORING B1



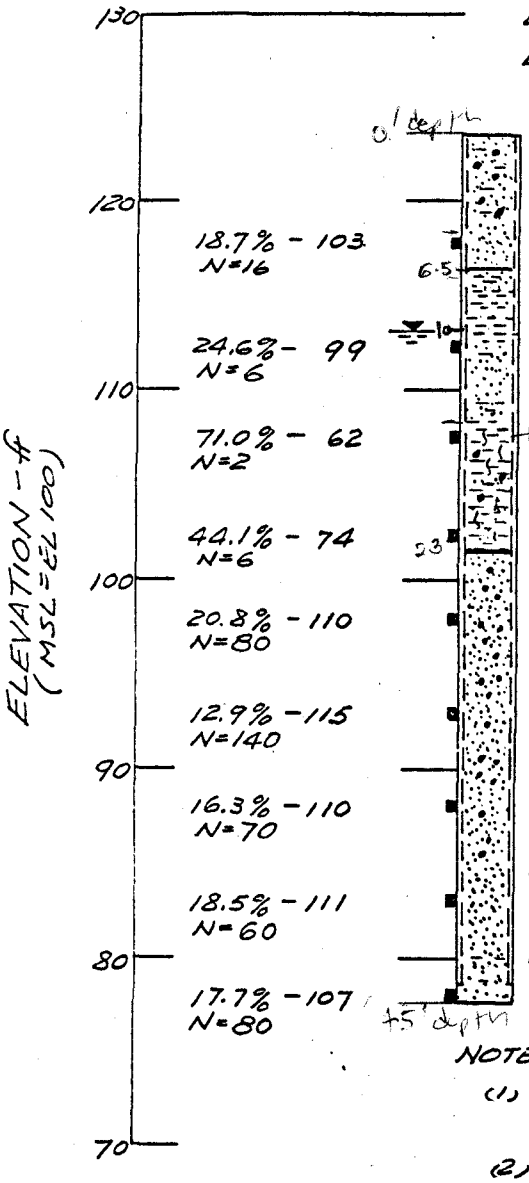
DATE	BY	JOB NO.	TITLE	PLATE
	CHW	R215A	LOG OF BORING	A-1

CALCULATION SHEET

METROPOLITAN ENGINEERS
SEATTLE, WASHINGTON

BORING B2

ELEVATION 123.6
DATE DRILLED 9-21, 22-64



BROWN SAND, SOME GRAVEL

LAYERED GRAY FINE-MED. SAND, SILTY FINE SAND AND SOFT BROWN GRAY ORGANIC SILT CONTAINS WOOD FRAGMENTS

CONTAINS SOME PEAT

GRAY FINE-MED. SAND WITH OCCASIONAL GRAVEL -DENSE

CONTAINS SOME SILT AND GRADES BROWN GRAY

GRADES GRAY

CONTAINS SOME SILT IN LENSES

NOTES:

(1) AFTER BORING COMPLETED. CASING PULLED BACK TO EL 81, ½ HR. LATER WATER LEVEL @ EL 113

(2) CASING REMOVED AND BORING BACKFILLED WITH PEA GRAVEL

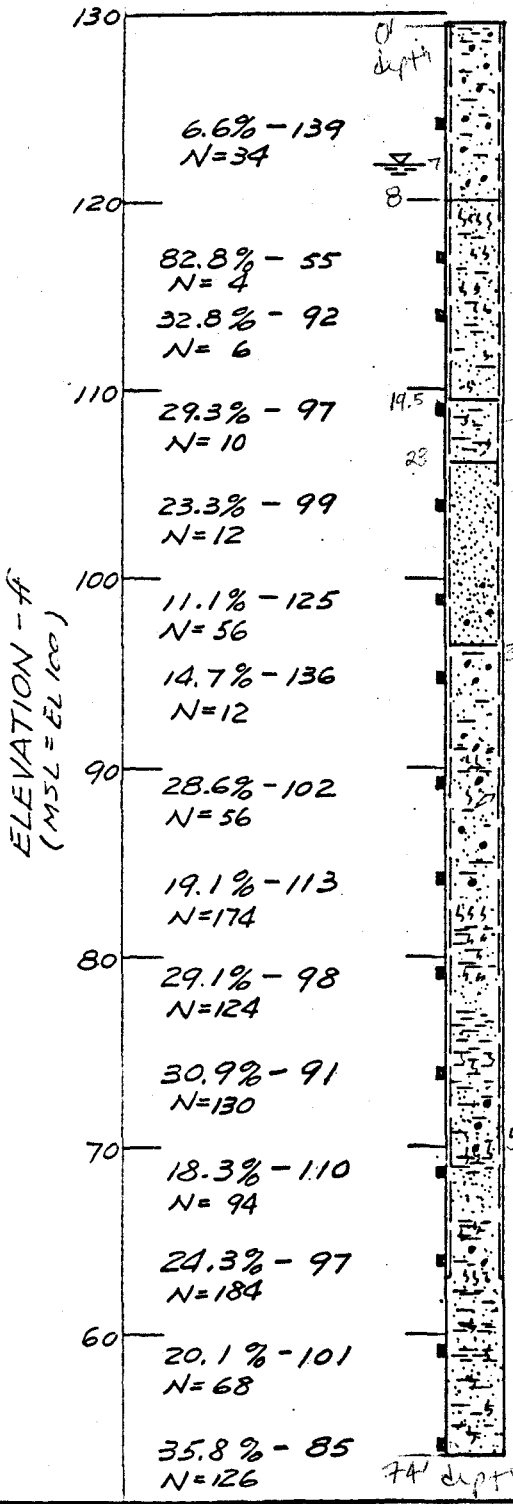
DATE	BY	JOB NO.	TITLE	PLATE
	CHW	R215A	LOG OF BORING	A-2

CALCULATION SHEET

METROPOLITAN ENGINEERS
SEATTLE, WASHINGTON

BORING B3

ELEVATION 129.5
DATE DRILLED 8-9, 10-65



BROWN GRAY SAND AND GRAVEL WITH SOME SILT

LAYERED BROWN PEAT, GRAY SAND, SILTY SAND AND SANDY SILT - SOFT TO MODERATELY FIRM

CONTAINS WOOD FRAGMENTS

LAYERED AND LAMINATED GRAY VERY FINE SANDY SILT, SILTY SAND AND SILT - MOD. FIRM

GRAY FINE - MED. SAND - DENSE, CLEAN

GRADES SOME GRAVEL

LAYERED GRAY SILTY FINE - MED. SAND, SILT, SILTY VERY FINE SAND, PEATY SILT AND BROWN PEAT - VERY FIRM AND DENSE

CONTAINS SOME MEDIUM TO COARSE SAND LENSES OR LAYERS

SOME GRAVEL

SOME GRAVEL

SOME PUMICE

BORING @ EL 60, CASING @ EL 63, OVERNIGHT WATER LEVEL @ EL 122

NOTE: CASING REMOVED; HOLE BACKFILLED WITH PEA GRAVEL AND CEMENT PLUG PLACED BETWEEN EL 70 & EL 65 AND BETWEEN EL 90 & EL 85; ONE PIEZOMETER INSTALLED WITH TIP @ EL 77

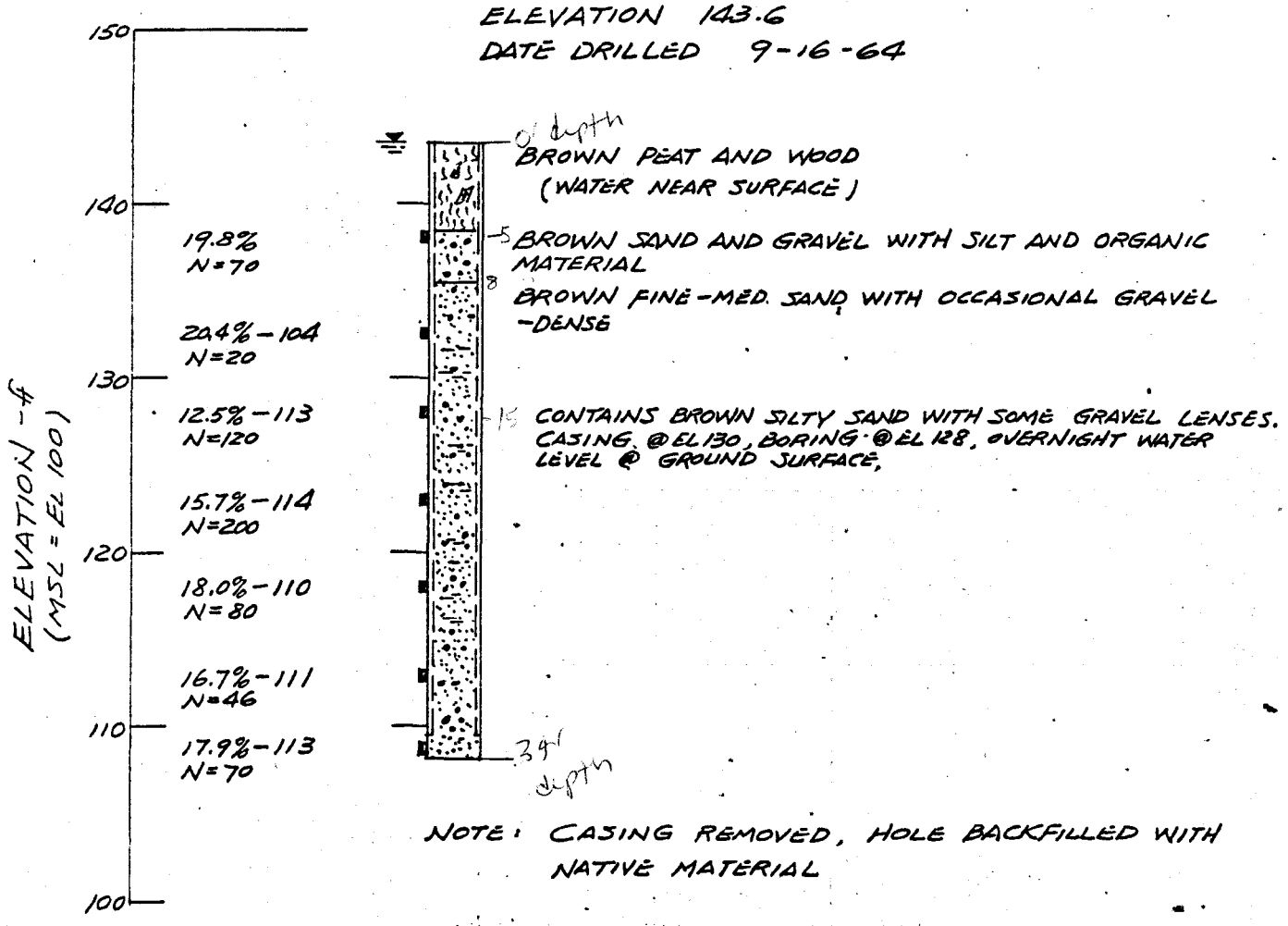
DATE 50	BY	JOB NO.	TITLE	PLATE
	CHW	R215A	LOG OF BORING	A-3

CALCULATION SHEET

METROPOLITAN ENGINEERS
SEATTLE, WASHINGTON

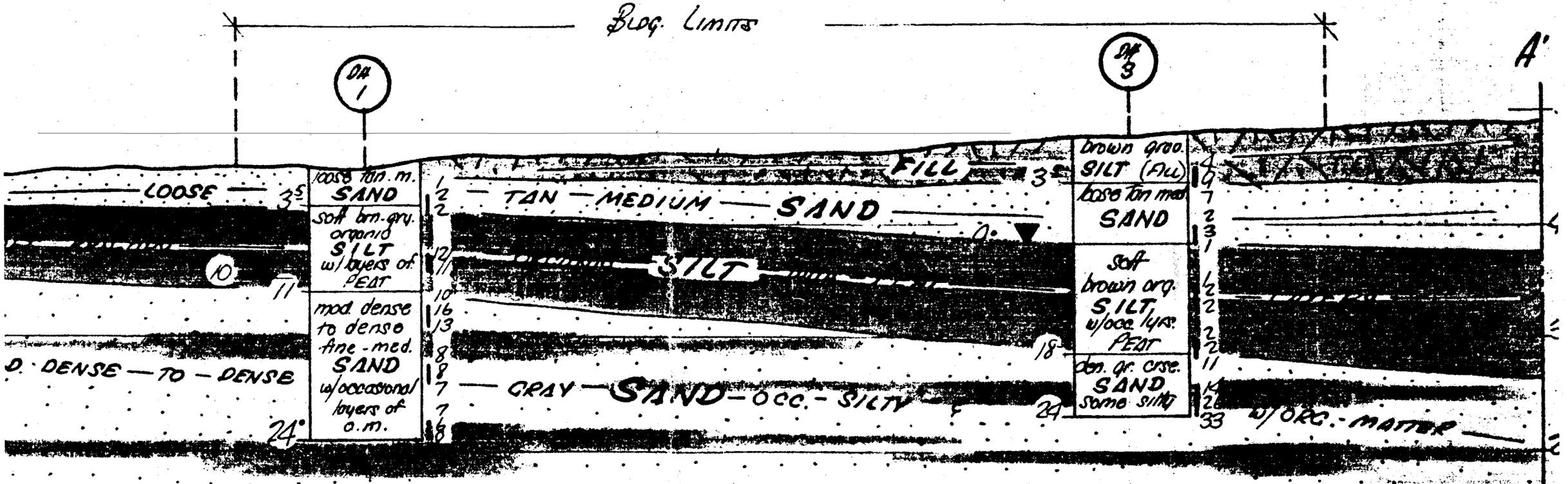
BORING B4

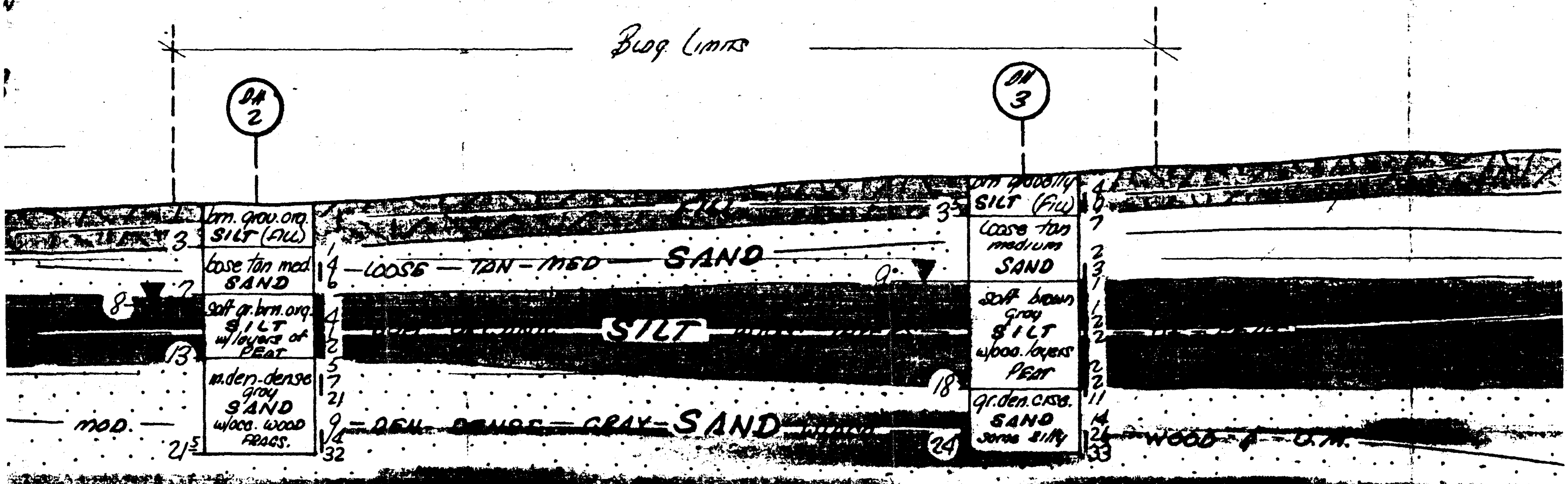
ELEVATION 143.6
DATE DRILLED 9-16-64



NOTE: CASING REMOVED, HOLE BACKFILLED WITH NATIVE MATERIAL

DATE	BY	JOB NO.	TITLE	PLATE
		R215B	LOG OF BORING	A-4


Bldg. Limits
DH 1
DH 3
A'
LOOSE
3.5'
loose tan m. SAND
soft brn.-gry. organic SILT w/ layers of PEAT
mod. dense to dense fine-med. SAND w/occasional layers of o.m.
D. DENSE — TO — DENSE
24'
FILL
3'
TAN — MEDIUM — SAND
D.
SILT
18'
GRAY — SAND — OCC. — SILTY
24'
brown grav. SILT (Fill)
loose tan med SAND
soft brown org. SILT w/occ. lyrs. PEAT
den. gr. crse. SAND some silt
w/ ORG. - MATTER
1/2 2 12 10 16 13 8 8 7 7 6
4 9 7 2 3 1 1/2 2 2 2 11 14 26 33


Bldg. Limits
DH 2
DH 3
FILL
brn. grav. org. SILT (FILL)
loose tan med. SAND
soft gr. brn. org. SILT w/layers of PEAT
m.den-dense gray SAND w/occ. wood FRAGS.
LOOSE — TAN — MED — SAND
SILT
MED. — DENSE — GRAY — SAND
brn gravelly SILT (FILL)
loose tan medium SAND
soft brown gray SILT w/occ. layers PEAT
gr. den. crse. SAND some silty
WOOD & O.M.

16975

104947

RESOURCE PROTECTION WELL REPORT

START CARD NO. R58642

PROJECT NAME: Juanita Village Cleaners

COUNTY: King 26-5E-30R

WELL IDENTIFICATION NO. AGT 042

LOCATION: SE ¼ SE ¼ So 30 Twn 26N R 5E

DRILLING METHOD: HSA

STREET ADDRESS OF WELL:

DRILLER: Brian Lose

NE both place @ 97th AVE NE, Kirkland WA

FIRM: Cascade Drilling, Inc.

WATER LEVEL ELEVATION: 37

SIGNATURE:

GROUND SURFACE ELEVATION: N/A

CONSULTING FIRM: Galloway Env.

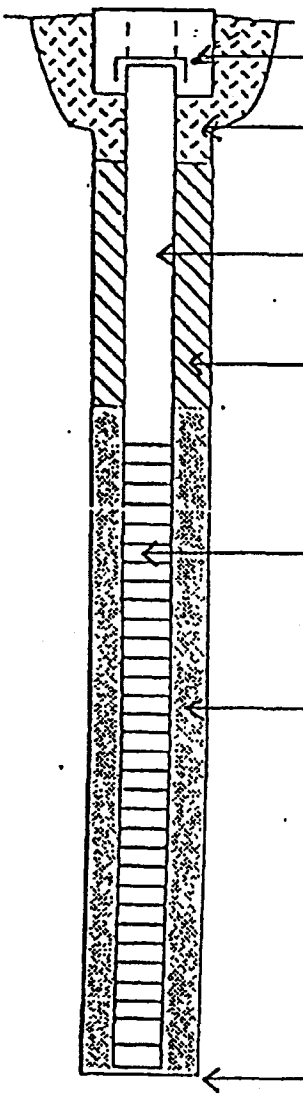
INSTALLED: 9/5/01

REPRESENTATIVE: Gary Galloway

DEVELOPED: No

1599

→ see next page: 9/5/01

AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	WELL COVER CONCRETE SURFACE SEAL DEPTH = 2 ft PVC BLANK 2 "x 35' BACKFILL 31 ft. TYPE: Bent. Chips PVC SCREEN 2 "x 15' SLOT SIZE: .010 GRAVEL PACK 17 ft. MATERIAL: 2/12 sand WELL DEPTH 50' "	0 - 50 ft. Brown sand w/ silt. - ft. - ft.

RECEIVED
OCT 19 2001
DEPT OF ECOLOGY

SCALE: 1" = _____ PAGE _____ OF _____

ECY 050-12 (Rev. 11/99)

104947

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RESOURCE PROTECTION WELL REPORT

104948

START CARD NO. R58642

PROJECT NAME: Juanita Village Cleaners

WELL IDENTIFICATION NO. AGT 043

DRILLING METHOD: HSA

DRILLER: Brian Lose

FIRM: Cascade Drilling, Inc.

SIGNATURE:

CONSULTING FIRM: Galloway Env.

REPRESENTATIVE: Gary Galloway

COUNTY: King 26-5E-30R

LOCATION: SE ¼ SE ¼ Sec 30 Twn 26N R 5E

STREET ADDRESS OF WELL:

NE both place @ 97th AVE NE, Kirkland WA

WATER LEVEL ELEVATION: 35

GROUND SURFACE ELEVATION: N/A

INSTALLED: 9/6/01

DEVELOPED: No

1599

AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	WELL COVER	0 - 45 ft. Brown sand, silt + some gravel
	CONCRETE SURFACE SEAL DEPTH = 1/ft	
	PVC BLANK 2 "x 36'	- ft.
	BACKFILL 26 ft. TYPE: bent. chips	
	PVC SCREEN 2"x 15' SLOT SIZE: .010	- ft.
	GRAVEL PACK 17 ft. MATERIAL: #12 sand	
	WELL DEPTH 45' "	

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OCT 19 2001
DEPT OF ECOLOGY

SCALE: 1" = _____ PAGE _____ OF _____

ECY 050-12 (Rev. 11/09)

104948

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APPENDIX B
Report Limitations and Guidelines for Use

APPENDIX B
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This appendix provides information to help you manage your risks with respect to the use of this report.

Geotechnical Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for the exclusive use of Opsis Architecture, LLP and other project team members for the City of Kirkland Recreation and Aquatics Centers project in Kirkland, Washington. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, a geotechnical or geologic study conducted for a civil engineer or architect may not fulfill the needs of a construction contractor or even another civil engineer or architect that are involved in the same project. Because each geotechnical or geologic study is unique, each geotechnical engineering or geologic report is unique, prepared solely for the specific client and project site. Our report is prepared for the exclusive use of our Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted geotechnical practices in this area at the time this report was prepared. This report should not be applied for any purpose or project except the one originally contemplated.

A Geotechnical Engineering or Geologic Report Is Based on a Unique Set of Project-specific Factors

This report has been prepared for the City of Kirkland Recreation and Aquatics Centers project in Kirkland, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it 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.

For example, changes that can affect the applicability of this report include those that affect:

- The function of the proposed structure;
- Elevation, configuration, location, orientation or weight of the proposed structure;

[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org .

- Composition of the design team; or
- Project ownership.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

Subsurface Conditions Can Change

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying a report to determine if it remains applicable.

Most Geotechnical and Geologic Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ, sometimes significantly, from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Geotechnical Engineering Report Recommendations Are Not Final

Do not over-rely on the preliminary construction recommendations included in this report. These recommendations are not final, because they were developed principally from GeoEngineers' professional judgment and opinion. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers cannot assume responsibility or liability for this report's recommendations if we do not perform construction observation.

Sufficient monitoring, testing and consultation by GeoEngineers should be provided during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective method of managing the risks associated with unanticipated conditions.

A Geotechnical Engineering or Geologic Report Could Be Subject to Misinterpretation

Misinterpretation of this report by other design team members can result in costly problems. You could lower that risk by having GeoEngineers confer with appropriate members of the design team after submitting the report. Also retain GeoEngineers to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering or geologic report. Reduce that risk by having GeoEngineers participate in pre-bid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Exploration Logs

Geotechnical engineers and geologists 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 or geologic 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 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 or geologic 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 GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer. A pre-bid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might an owner be in a position to give contractors the best information available, while requiring them to at least share the financial responsibilities stemming from unanticipated conditions. Further, a contingency for unanticipated conditions should be included in your project budget and schedule.

Contractors Are Responsible for Site Safety on Their Own Construction Projects

Our geotechnical recommendations are not intended to direct the contractor’s procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and to adjacent properties.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering or geology) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these “Report Limitations and Guidelines for Use” apply to your project or site.

Geotechnical, Geologic and Environmental Reports Should Not Be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

If Client desires these specialized services, they should be obtained from a consultant who offers services in this specialized field.

Chris Roberts

From: David Conlin <dconlin@geoengineers.com>
Sent: Thursday, September 8, 2022 12:14 PM
To: Chris Roberts
Cc: Emily Hurn; mmcarthur; Fiona M. McNair; Carson Cheung
Subject: Kirkland RAFS - Environmental Review
Attachments: Kirkland RAFS_Table 1. Critical Areas Summary_GeoEngineers.pdf

Hi Chris,

This email serves as transmittal of our deliverable addressing environmental review in support of the City of Kirkland Recreation and Aquatics Feasibility Study (RAFS) project.

Introduction

GeoEngineers was contracted by Opsis Architecture to support the project by evaluating up to four sites that may be potentially developed with a large aquatics and recreation center and/or a medium-sized community recreation center. Our scope included a paper study that would be used to help develop a short-list of three preferred sites. Although our scope relies primarily on a review of existing data and did not include field assessment, we also participated in a workshop during which each of the sites was briefly visited, as described below.

Methods

We completed background data research on existing mapped critical areas on or adjacent to each of the four potential sites (Houghton Park and Ride, Peter Kirk Park, North Kirkland Community Center Park, and Juanita Beach Park North). For the purposes of this scope, critical areas that were considered include wetlands, streams, lakes, wildlife habitat areas, frequently flooded areas, and associated buffers. We also reviewed jurisdiction under the Shoreline Management Act. We did not include geologic hazard areas (steep slopes, landslide hazards, etc.), critical aquifer recharge areas, or tree management/landscape requirements in our review.

Our review included the following data sources:

- City of Kirkland Greater Downtown Kirkland Urban Center Plan
- City of Kirkland Sustainability Master Plan (2020)
- City of Kirkland Aquatics, Recreation, & Commnity Center Concept Plan, Part 2: Technical Report (2014)
- Juanita Beach Park Master Plan Report (J.A. Brennan Associates 2006)
- Final Wetland/Stream Delineation Report and Mitigation Plan, Juanita Beach Park Phase II Improvements Project (Shannon & Wilson 2017)
- City of Kirkland GIS Data – Critical Areas/Wetlands/Streams/Lakes
- King County iMap GIS Data – Critical Areas/Wetlands/Streams/Lakes
- Washington State Department of Fish & Wildlife, Priority Habitats and Species Data
- Federal Emergency Management Agency, Flood Insurance Rate Maps
- Washington Department of Natural Resources Forest Practices Application Mapping Tool
- City of Kirkland Zoning Code, Chapter 90 (Critical Areas: Wetlands, Streams, Minor Lakes, Fish and Wildlife Habitat Conservation Areas, and Frequently Flooded Areas)

We also completed a brief site visit to visually assess the conditions at each site. This did not include a detailed assessment or wetland delineation nor did we examine adjacent properties in person for potential critical areas that could have buffers extending onto the sites.

Results

The results of our assessment are presented in the **attached tabular matrix**. In summary:

- Juanita Beach Park and Juanita Bay Park are characterized by extensive wetlands (J.A. Brennan 2006, City of Kirkland 2014, The Watershed Company 2016, Shannon & Wilson 2017). However, wetlands identified within the park are located south of NE Juanita Dr, whereas the subject site investigated is located to the north of this major arterial roadway; wetland buffers are therefore not anticipated to extend to the subject site.
- Juanita Creek flows adjacent to and partially within Juanita Beach Park North, continuing through the southern section as well. Juanita Creek is considered a Type F stream, requiring a 100-foot stream buffer according to Table 90.65.1, Streams and Associated Buffer Standards (City of Kirkland Zoning Code, Chapter 90), as well as an additional 10-foot structure setback from the edge of the buffer according to code section 90.140. Juanita Creek provides habitat for ESA-listed fish species.
- Peter Kirk Park is characterized by an area of shallow ponding, 1 to 3 feet in depth, at a BFE of 32 feet, which is mapped as a Zone AH Flood Hazard Area by FEMA.
- Lake Washington is a Shoreline of the State. Juanita Beach Park North is beyond the limits of shoreline jurisdiction. No other sites are within the jurisdiction of the City of Kirkland Shoreline Master Program.
- No other critical areas were identified at any of the other sites.

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Table 1. Summary of Critical Areas and Environmental Permitting Considerations

Location	Critical Areas Present at the Site		Preliminary Required Buffer Associated with Critical Area	Permitting Implications
Houghton Park & Ride 7024 116th Ave NE, Kirkland, WA 98033	Wetlands	No	NA	None
	Streams	No	NA	None
	Lake	No	NA	None
	Wildlife Habitat Area	No	NA	None
	Frequently Flooded Areas	No	NA	None
Peter Kirk Park 202 3rd St, Kirkland 98033	Wetlands	No	NA	None
	Streams	No	NA	None
	Lake	No	NA	None
	Wildlife Habitat Area	No	NA	None
	Frequently Flooded Areas	Yes - FEMA Zone AH ("Flood depths of 1 to 3 feet [usually areas of ponding])"	NA	Potential to require a Letter of Map Revision-Based on Fill (LOMR-F). FIRM Map indicates Base Flood Elevation of 32 feet.
North Kirkland Community Center Park 12421 103rd Ave NE, Kirkland, WA 98034	Wetlands	No	NA	None
	Streams	No	NA	None
	Lake	No	NA	None
	Wildlife Habitat Area	No	NA	None
	Frequently Flooded Areas	No	NA	None
Juanita Beach Park North 9703 Juanita Dr NE, Kirkland, WA 98034	Wetlands	No	NA	None
	Streams	Yes - Juanita Creek	100 feet + 10-foot structure setback	Improvements should avoid stream/buffer and site should comply with vegetative requirements in buffer; alternatively, there are provisions for buffer reduction and/or mitigation. Impacts to Waters of the State or Waters of the U.S. would trigger additional federal and state permit requirements.
	Lake	No - OHWM of Lake Washington is >550 ft from northern portion of park where development is proposed.	NA	None
	Wildlife Habitat Area	Yes - Juanita Creek (Steelhead and Chinook salmon)	NA	Fish species are addressed through compliance with streams and associated buffer requirements - see above. Impacts to stream habitat for federally protected species would trigger a number of additional permits
	Frequently Flooded Areas	No	NA	None

MEMORANDUM

DATE: February 8, 2023

TO: Chris Roberts, AIA, OPSIS

FROM: Michael Read, PE, Principal, TENW

SUBJECT: Kirkland Community Centers – Traffic & Parking Evaluation
TENW Project No. 2022-253

This memorandum summarizes the results of a preliminary traffic and parking analysis of the proposed recreational facilities at two different sites in the City of Kirkland. Known as the Kirkland Community Centers project, redevelopment of the existing North Kirkland Community Center and transformation of the existing Houghton Park-and-Ride facility/transit center are under consideration. The proposed facilities would range in size from approximately 48,000 square-feet to upwards of 103,000 square-feet to provide a new aquatics facility, active recreational spaces, new community event spaces to serve a variety of programs and supporting administrative/maintenance areas.

This study addresses the following traffic impacts associated with the proposed action:

- Description of potential development options at each proposed project site.
- Documentation of existing adjacent roadway and intersection conditions.
- Estimation of vehicular weekday a.m. peak hour, p.m. peak hour, and daily trips generated by the proposed development options.
- Evaluation of peak parking demand of development options.

Project Description

The Kirkland Community Centers project is considering redevelopment of the existing North Kirkland Community Center and transformation of the existing Houghton Park-and-Ride facility/transit center into a new community recreational facility. Both project sites would be redeveloped with structured parking and multistory recreational/community facilities that are contained within each property. Vehicular site access would be maintained at the North Kirkland Community Center via 103rd Avenue NE at its intersection with NE 124th Street, although reconstruction of 103rd Avenue NE is expected along with a new traffic signal at its intersection with NE 124th Street. proposed via SE 216th Street via its intersection to the west at 132nd Avenue SE. Site access at the Houghton Park-and-Ride facility would be maintained with a full access driveway onto NE 70th Place, a signalized access onto 116th Avenue NE at the NB I-405 freeway ramps, and a full access driveway to the south onto 116th Avenue NE.

Redevelopment options under consideration at the North Kirkland site range from approximately 48,617 square-feet with 151 on-site parking stalls to approximately 73,299 square-feet and 198 on-site stalls. At the Houghton Park-and-Ride site, development options range from approximately

85,415 square-feet with 292 on-site parking stalls to 102,738 square-feet and 348 stalls. Under each development option, a variety of programming programs to serve as community spaces, indoor/outdoor recreational activities, and an indoor aquatic center are under consideration. Ground level site plans of each option at both sites are provided in Attachment A.

Existing Roadway Conditions

As noted, the North Kirkland site is served via 103rd Avenue NE onto the NE 124th Street arterial corridor. This arterial is generally 5-lanes in the site vicinity with a posted speed limit of 35-mph. Sidewalks are provided along both sites of the street and transit services via King County Metro Route 255 are provided immediately west of the site access intersection with service frequencies approximately every 15 minutes during peak weekday commute periods and every 30 minutes during weekday non-peak hours and on weekends. Peak two-way traffic flows on NE 124th Street west of 103rd Avenue NE average approximately 1,300 vehicles during the AM peak hour and 1,650 vehicles during the PM peak hour.

Both 116th Avenue NE and NE 70th Place serve the existing Houghton Park-and-Ride site. A signalized intersection at 116th Avenue NE provides direct access onto northbound I-405, serving both the on-ramp and off-ramp at this location. To accommodate peak directional flows at this signalized intersection, 116th Avenue NE is generally 5-lanes in the immediate vicinity of the site, transitioning to 2-lanes south of the property. Generally, a continuous sidewalk is provided on the east side of 116th Avenue NE, while only segments of sidewalk are provided on the west side in the project vicinity. The speed limit is posted at 35-mph. NE 70th Place is generally a 3-lane arterial with bike lanes along the site frontage. Continuous sidewalks are provided on both sides of NE 70th Place with a posted speed limit of 30-mph. Fixed-route transit service directly serves the site via King County Metro Route 245 and a freeway flyer stop for Route 342 is provided within 250 feet for northbound service and approximately 1,000 feet of walking distance to southbound service along I-405. Similar service frequencies to Route 255 are provided on the local Route 245 directly serving the site, while limited peak directional service is provided on 342 during peak commute periods only.

Peak two-way traffic flows on NE 70th Place average 1,200 vehicles during the AM and PM peak hours, while range from approximately 1,125 vehicles during the AM peak hour to 1,450 vehicles during the PM peak hour on 116th Avenue NE.

Project Trip Generation Analysis

Published trip rate equations compiled by the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, 2021, for Land Use Code 495 – Recreational Community Center were initially applied to provide a trip generation analysis of the project. Vehicle trip generation ranges for each site development were generated and reported in Table 1. As shown, an estimated range of between 93 and 140 AM peak hour trips and 122 to 183 PM peak hour trips would be generated at the North Kirkland Community Center site, while a range of between 140 and 163 AM peak hour trips and 183 to 214 new PM peak hour trips would be generated at the Houghton Park-and Ride site. Weekday daily vehicle trip generation ranges from approximately 1,375 to 2,862 one-way daily vehicle trips depending upon the selected site buildout.

Table 1
Kirkland Community Centers Trip Generation Summary

Time Period	In	Out	Total
North Kirkland Community Center – 48,617 SF			
Weekday AM Peak Hour	61	32	93
Weekday PM Peak Hour	57	65	122
Weekday Daily	687	688	1,375
North Kirkland Community Center – 73,299 SF			
Weekday AM Peak Hour	92	48	140
Weekday PM Peak Hour	86	75	183
Weekday Daily	1,028	1,028	2,056
Houghton Park-and Ride Site – 85,415 SF			
Weekday AM Peak Hour	108	55	163
Weekday PM Peak Hour	100	114	214
Weekday Daily	1,194	1,194	2,388
Houghton Park-and Ride Site – 102,738 SF			
Weekday AM Peak Hour	130	66	196
Weekday PM Peak Hour	121	136	257
Weekday Daily	1,431	1,431	2,862

Source: Trip Generation Manual, 11th Edition, ITE, 2021.

Parking Demand Analysis

Published parking generation rate equations compiled by the Institute of Transportation Engineers (ITE) Trip Generation, 5th Edition, 2019, for Land Use Code 495 – Recreational Community Center were to provide a parking generation analysis of the project. Considering peak person utilization all program areas simultaneously within each option, peak demand for parking could exceed these published rates. As such, scheduling of events with peak person utilization, special events or swim meets within the aquatic program of the facility, can be managed with effective parking management measures. For the purposes of programming, supply is higher than peak demand to provide an effective parking facility. As shown, parking surplus is expected under each development option.

Table 2
Kirkland Community Centers Parking Generation Summary

Location/Option	Total Peak Demand	Proposed Supply	Surplus(+) or Deficit(-)
North Kirkland Community Center – 48,617 SF	101 stalls	151 stalls	+50
North Kirkland Community Center – 73,299 SF	152 stalls	196 stalls	+44
North Kirkland Community Center – 48,617 SF	177 stalls	292 stalls	+115
North Kirkland Community Center – 48,617 SF	213 stalls	348 stalls	+135

Source: Parking Generation Manual, 5th Edition, ITE, 2019.

General Site Access Analysis

For the redevelopment under consideration at the North Kirkland site, at a minimum frontage improvements and roadway would be required along 103rd Avenue NE to accommodate the expected peak demand and expected queuing southbound to a new signal at NE 124th Street. Given expected site trip generation and existing peak two-way flows currently along NE 124th Street, site access would require a traffic signal to provide for safety and reduced delay for site entry/exit. Also, with an increase in pedestrian access via neighboring residents and transit accessibility, a controlled signal for pedestrian crossings of NE 124th Street would also be recommended. Provision for secondary site access for fire/emergency vehicles via 105th Avenue NE is also recommended.

Given the existing arterial capacity provided at the Houghton Park-and-Ride facility along 116th Avenue NE and NE 70th Place that includes exclusive left turn only lanes and signalized access control, no additional traffic capacity improvements would be required for the proposed facilities under either option. Continuation of direct transit services to the site should be planned to accommodate fixed route buses or shuttle/school buses from area schools that would likely be using the site for school recreational programs at these 85,000+ square-foot buildings.

If you have any questions regarding the information presented in this memo, please call me at (206) 361-7333 x 101 or mikeread@tenw.com.