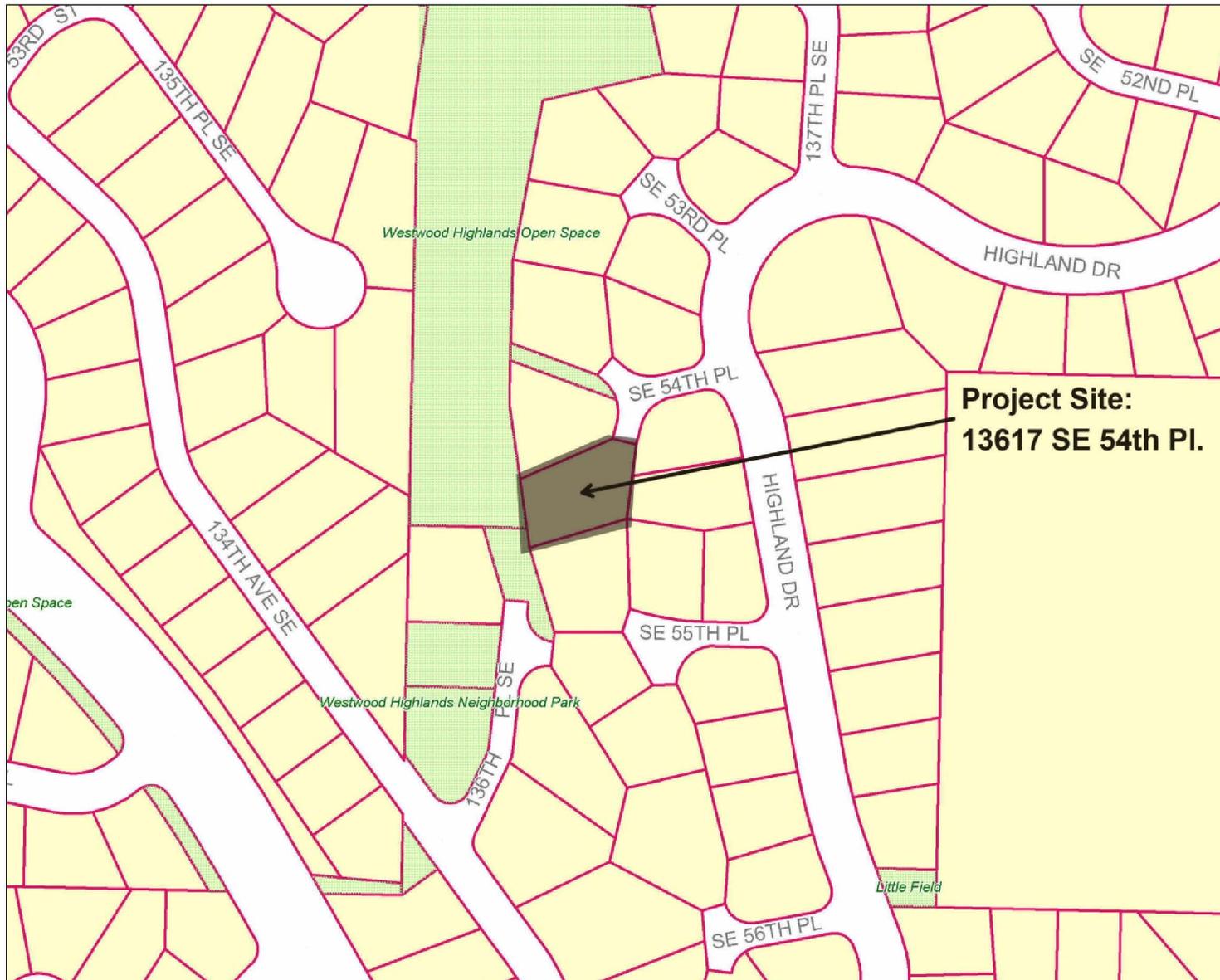
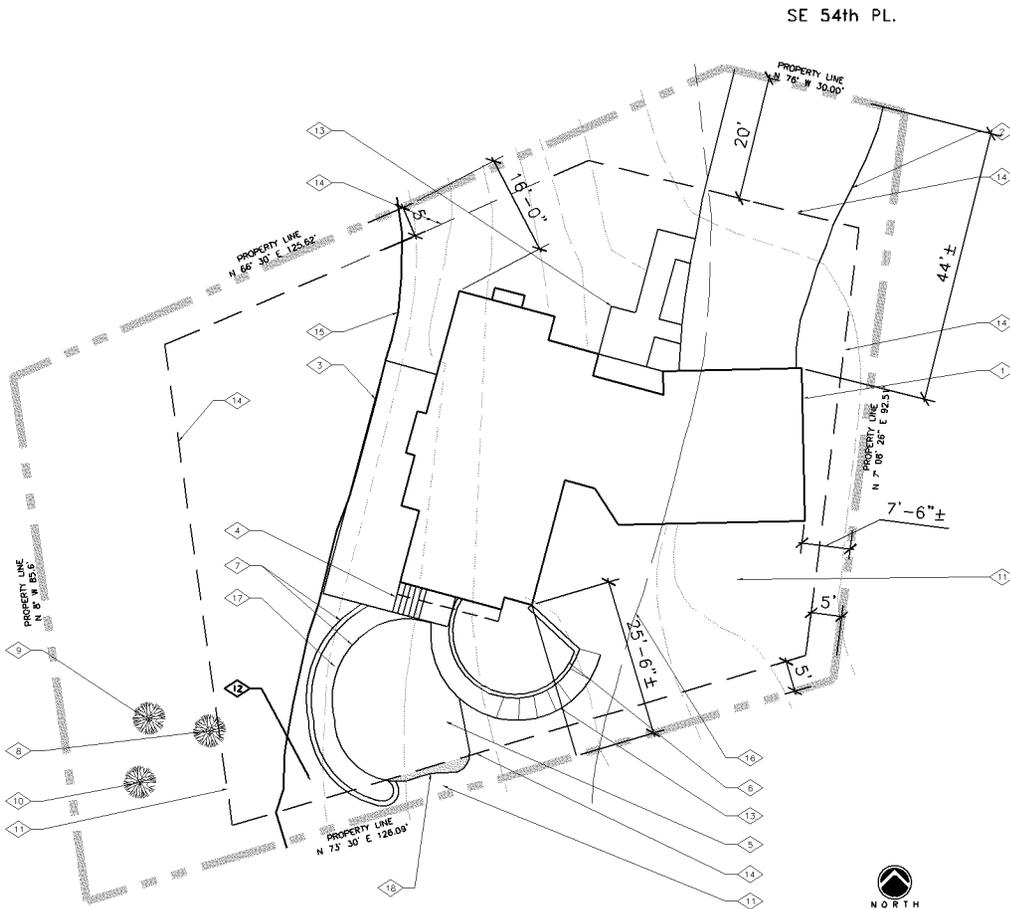


Tse Patio
File Number: 11-130705-LO





GENERAL NOTES

- MITIGATION PLAN:**
- REMOVE INVASIVE BLACKBERRY AND INVASIVE IVY
 - PLANT EVERGREEN GROUND COVER
 - 16 KINNIKINICK, SALAL OR EQUIVALENT EVERGREEN GROUNDCOVER PER BELLEVUE PLANTING GUIDE
 - YEAR 1 REMOVE BLACKBERRY AND INVASIVE IVY, PLANT EVERGREEN GROUNDCOVER
 - YEARS 2-5: ENSURE SURVIVAL OF NEWLY PLANTED EVERGREEN GROUNDCOVER

KEYED NOTES

- 1 EXISTING RESIDENCE
- 2 EXISTING CONCRETE DRIVEWAY
- 3 EXISTING DECK
- 4 EXISTING DECK STAR
- 5 EXISTING LOWER PATIO
- 6 EXISTING GARDEN RETAINING WALL
- 7 EXISTING MASONRY BLOCK EDGING
- 8 EXISTING 14" TREE
- 9 EXISTING 12" TREE
- 10 EXISTING 11" TREE
- 11 EXISTING VEGETATION/GROUNDCOVER
- 12 **PROPOSED EVERGREEN GROUNDCOVER**
- 13 EXISTING WALKWAY
- 14 EXISTING SETBACK LINE
- 15 LINE OF 40% SLOPE
- 16 50' BUFFER LINE
- 17 EXISTING GRAVEL LANDSCAPE AREA
- 18 EXISTING PATIO AREA WITHIN 5' SETBACK TO BE 30" OR LESS ABOVE GRADE

IMPERVIOUS SURFACES CALCULATIONS

	TOTAL
TOTAL BUILDING AREA	1,860 SQ.FT.
DRIVEWAY	1,101 SQ.FT.
PATIO, WALKWAYS, GARDEN WALLS, STAIRS	873 SQ.FT.
TOTAL	4,034 SQ.FT.
TOTAL LOT AREA =	12,862 SQ.FT.
*0.34 / 12,862 = 31.56%	
% LOT COVERAGE	31.56%

KDC
ARCHITECTS ENGINEERS, P.C.
 4728 200TH STREET SW, SUITE 200
 LYNNWOOD, WA 98036
 PHONE: 425.478.2651
 FAX: 425.712.2646

PROJECT INFORMATION:

SITE PLAN

TSE RESIDENCE

13617 SE 54th PLACE
 BELLEVUE, WA 98006
 KING COUNTY

ISSUE DATE:
 12/15/11

ISSUED FOR:
 SUBMITTAL

REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	12/15/11	ISSUED FOR SUBMITTAL	BWG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

LICENSE:

SHEET TITLE:
 OVERALL SITE PLAN

SHEET NUMBER: **A-1** REVISION: **A**

227x341 SCALE: 1" = 10'-0"
 117x117 SCALE: 1" = 20'-0"
 10' 5' 10'

THE INFORMATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO CARRIER SERVICES IS STRICTLY PROHIBITED.

OVERALL SITE PLAN



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Memorandum

CONTACT: MR. LAP TSE

DATE:12/05/11

CC:ADAPT FILE (WA11-17536-GEO)

KDC ATTN: MR ERIC CAMP PE

MR. BILL NORTH

TIME:2:30

PREPARED BY:KURT GROESCH PE

PROJECT: RESIDENTIAL RETAINING WALL,
13617 SE 54TH STYREET, BELLEVUE, WA

SUBJECT: CRITICAL AREA REVIEW, GEOTECHNICAL
REVIEW OF WALL CONSTRUCTION

At your request, we are providing this memorandum to forward the results of our site visit, site explorations and our review of documents related to the unpermitted construction of two tiered retaining walls at the above referenced site. The undersigned travelled to the site on two occasions to observe a short tiered retaining wall constructed along the downhill side of the residence. We understand the wall was not permitted prior to construction after you consulted on line materials on the City's web materials that inaccurately indicated that a permit was not required owing to the restricted height of the wall (less than 4-feet). In subsequent correspondence with the City, and meetings with the City staff, we understand the requirements for a Critical Area study will be necessary for you to acquire a permit after the fact for the work completed.

You have provided us with the drawing set for the original residence; in addition, we have measured the patio and have included the results of our site reconnaissance which documents the existing wall as well as the wall location in relation to the existing residence, and also indicates the approximate location of hand dug explorations accomplished for our study. The project site is depicted on Figure 1 attached to this memo. Figure 2 indicates the results of our site measurements of the approximate patio location and the adjacent walls, and the approximate location of our explorations accomplished for this study. Detailed interpretive logs of the hand excavated test holes (TH-1 and TH-2) are also included for your use.



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The existing wall system is a two tiered block wall, constructed using precast concrete blocks. The patio surface is level, and covered with decorative rock surfacing. We understand you previously engaged a contractor who completed the work to date prior to our involvement. The existing wall tiers range from one block (6-inches) to a maximum height of 48-inches, including all blocks. The walls are well constructed, without visible defects, such as settlement, ground fissures, bowing or cracking. Both wall tiers have the lowest block course embedded below the final exterior grade, reducing the exposed wall height to less than a maximum of 42-inches. The existing (new) block walls appear to be well constructed, uniform in appearance and include a batter on the wall front face. Similar landscaping walls using unreinforced masonry blocks are present elsewhere on the site, their origin and details of their construction are unknown. You have provided us with a drawing documenting the approximate location of perforated pipe drains for both new wall tiers, as well as materials expense tickets (truck tickets) documenting imported drainage materials.

The walls are sited in the backyard of the home, south and west of the residence. The patio grade is set close to the existing elevation of a concrete walk constructed previously. Grades below the outer edge of the lowest wall tier drop to the south and west. The area below the lowest wall tier is largely undisturbed save for some rudimentary paths through the existing vegetation. Ground cover below the walls consist of mixed deciduous and coniferous trees with a dense understory of low grass, brush, ivy and occasional ferns. Three, 12 to 15-inch diameter fir trees are located immediately downslope of the patio. These trees are vertical in configuration and orientation, and do not exhibit "pistol" butt configuration typical of solifluxion or soil creep. No bare soils or other indications of active or aggressive erosion were noted at the time of our site work (November and October, 2011). No flowing or standing water was noted. Dense soils conditions were indicated by probing along the base of the wall at the time of our original site visit. The dense soil conditions were later confirmed by excavating two hand dug test holes.

Geologic Setting Previous mapping by the SCS (currently the National Resources Conservation Services, U.S. Department of Agriculture) indicates the site soils consist of Beausite gravelly sandy loam, 15 to 30 percent slopes. This material is described as till over residium from sandstone. Other site mapping indicates the presence of both glacial till (Vashon) and Tertiary bedrock (unclassified volcanic and sedimentary rock) in the project vicinity. The glacial till was compressed by the weight of the continental ice mass. Accordingly the till, and all soil units deposited below the till are very dense and relatively incompressible. Our test holes generally confirmed the mapped soil units, with weathered glacial till encountered immediately below the ground surface. We also encountered the upper surface of weathered bedrock (sandstone) at shallow depths. We conclude the slope is comprised of inherently stable materials. Based on our observations it appears the wall is founded on competent materials suitable for support of the applied wall loads, in our opinion.



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Subsurface Conditions Adapt completed two shallow hand dug explorations immediately below the lowest wall tier, and some distance below the wall to evaluate the makeup of the slope soils. TH-1, immediately below the lowest wall tier, encountered landscaping bark and a relic topsoil layer that extended about 6-inches below ground surface (bgs). Dense soils were encountered at 6-inches and extended to about 18-inches below grade. The upper very dense till horizon was encountered at 18-inches. The interval between 6 and 18-inches contained abundant gravel that graded up to about 4 inches in diameter. The dense soils were interpreted as weathered glacial till. TH-2 encountered similar soil conditions, but was underlain by very dense, moist, brown-gray variegated fine sand, interpreted to be the upper contact of the weathered sandstone bedrock under the site. No groundwater was noted in either test hole even though the explorations were completed in a wet autumn season.

Regulatory Considerations The City of Bellevue's Critical Area Ordinance typically requires that a buffer be provided between the proposed development and the top of slope inclined at a slope gradient exceeding 40 percent. The constructed walls fall within this buffer dimension, as the top of slope (40 percent) occurs some two or three feet outboard of the bottom tier of the wall system. The existing walls do conform with the requirement that site improvements minimize alterations to the natural contours with foundations tiered to conform to the existing topography, where possible. The City's regulations also require the project design minimize the area of impervious materials within the critical slope and buffer. In this instance, the wall appears to be constructed within the buffer and does not encroach upon the critical area (slope). From a design standpoint, the runoff from the patio would be similar to the runoff generated by the relatively impermeable till slope which comprised the buffer area prior to wall construction.

Our site work followed a number of significant rainfall events. No concentrated flows were noted downslope of the lowest wall tier. No active or aggressive erosion was apparent, and the wall appears to drain by sheet flow, i.e. dispersed uniformly across the wall length. We did not see indications of soil creep or solifluxion at the time of our site work. No ground fissures, chaotic vegetation patterns, spring activity or other adverse geologic conditions were noted. At this site, site conditions consist of heavily overconsolidated glacial till over shallow bedrock. At the inclinations apparent at the site, the slope is comprised of inherently stable materials. Considering the geologic setting, a buffer equal to the observed 2 to 3-foot separation between the face of the lower wall tier and steep slope will be sufficient from a geotechnical standpoint, in our professional opinion.



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Wall Construction The existing (new) block walls appear to be well constructed, uniform in appearance and include a batter on the wall front face. The truck tickets and materials bills indicate the wall tiers are provided with a longitudinal footing drain, and are backfilled with imported granular materials. The Contractors sketch indicates drainage was provided for both wall tiers. The wall consists of two gravity concrete block walls. The height of the individual wall tiers are less than 48-inches, with the lowest block course fully embedded, consistent with acceptable geotechnical practice. The wall tiers are horizontally separated by several feet. Based on our site visit, and our review of the construction materials package provided to us, it is our opinion that the wall as constructed will be suitable for the intended use.

Summary Because the soils and shallow bedrock underlying the site are very dense and favorable, the existing wall construction will exert a trivial load in comparison to past loads experienced by the compressive effects of thousands of feet of glacial ice. In our opinion, the new walls pose a minute threat to the slope, as supported by the wall performance since the time the wall was constructed. The risk to the adjacent slope, and surrounding properties will be minimal. The existing wall construction does not adversely impact the site stability or surrounding properties. The geologic hazard from the existing slope to the existing development is likewise minimal as the slope is comprised of inherently stable soils and rock. Based on the observed site conditions and performance of the wall system the patio should be considered safe from a geotechnical or geologic standpoint, in our professional opinion.

In summary,

- This Geotechnical report includes Assessment of Geological Characteristics, Analysis of the block wall and patio project, and a Stability Analysis.
- Areas of the recent construction of the block wall and patio project, including the area within the 5 foot setback per the existing and proposed site plans were examined.
- The walls and patio project do conform with the requirement that site improvements minimize alterations to the natural contours with foundations tiered to conform to the existing topography, where possible.
- The project conforms to the requirements to minimize the area of impervious materials within the critical slope and buffer.
- The top of slope (40 percent) occurs some two or three feet outboard of the bottom tier of the wall system. Considering the geologic setting, this current separation between the face of the lower wall tier and steep slope will be sufficient from a geotechnical standpoint, in our professional opinion.
- The project block wall and patio construction does not adversely impact the site stability or surrounding properties



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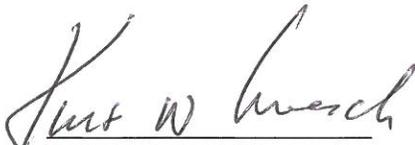
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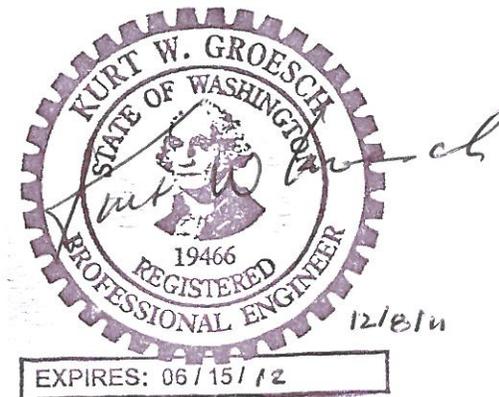
- The project will not adversely impact other critical areas because the soils and shallow bedrock underlying the site are very dense and favorable, the existing wall construction will exert a trivial load in comparison to past loads experienced by the compressive effects of thousands of feet of glacial ice
- The project will not be adversely impacted by the geologic hazard as the slope is comprised of inherently stable materials and bedrock
- Based on the observed site conditions and performance of the wall system the patio should be considered safe from a geotechnical or geologic standpoint.

We appreciate the opportunity to be of service on this project. If you have any questions regarding this report or any aspects of the project, please feel free to contact our office.

Respectfully submitted,

Adapt Engineering, Inc.


Kurt W. Groesch PE





0 1000 FEET 0 500 1000 METERS 1 MILE
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FIGURE 1 - Location & Topographic Map
Location : TSE RESIDENCE
 13617 - SE 54TH PLACE
 BELLEVUE, WA 98006
Client : LAP TSE
Date : 11/18/11 **Job # :** WA11-17536-GEO

LEGEND:

TH-1 - TEST HOLE SAMPLE NUMBER AND APPROXIMATE LOCATION

NOTES:

DRAWING BASED ON MAPPED SITE VISIT PERFORMED BY ADAPT (11/17/11)

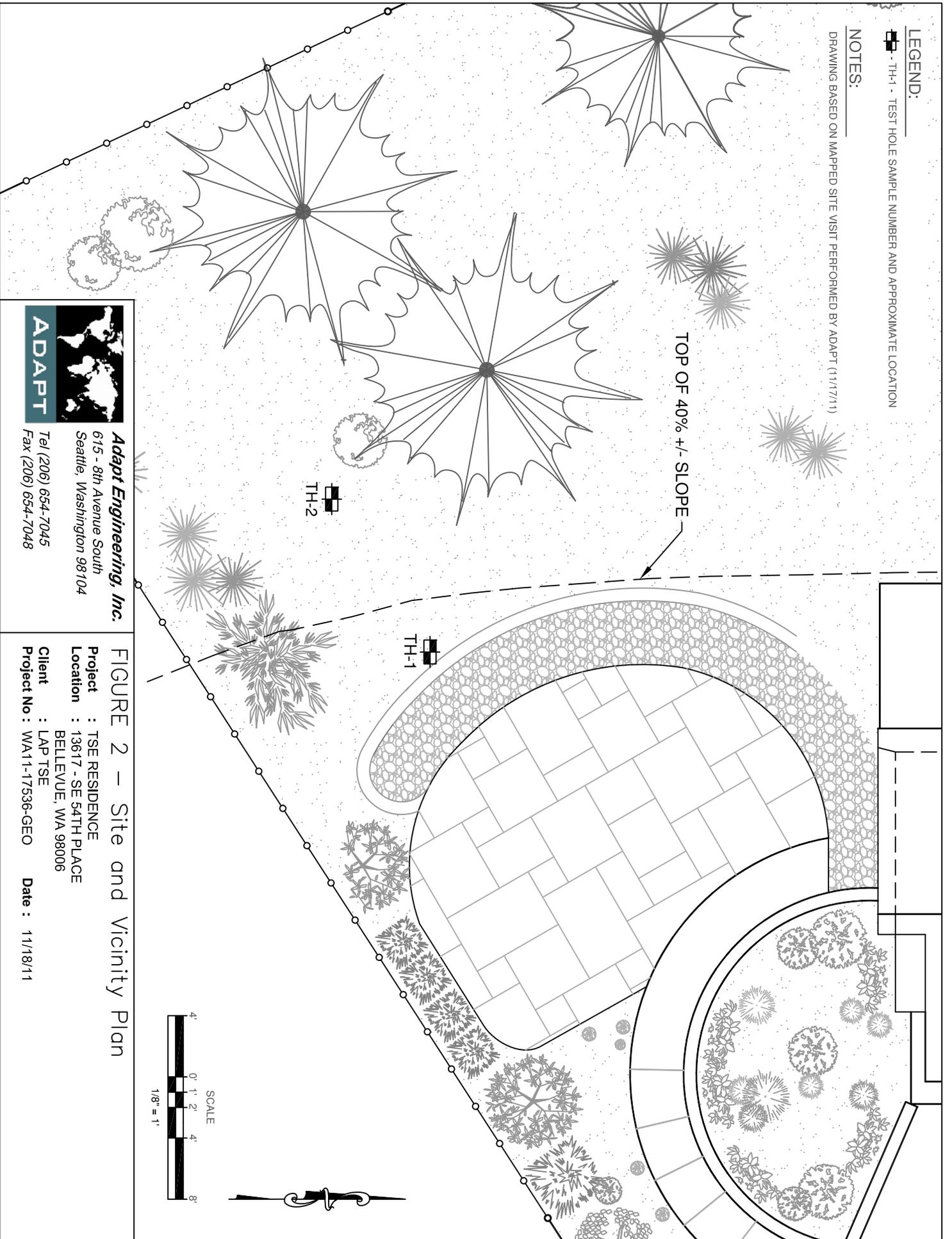


FIGURE 2 – Site and Vicinity Plan

Project : TSE RESIDENCE
Location : 13617 - SE 54TH PLACE
BELLEVUE, WA 98006
Client : LAP TSE
Project No. : WA11-17536-GEO
Date : 11/18/11



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TEST HOLE LOG



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PROJECT : Tse Residence
LOCATION : 13617 SE 54th Place
 Bellevue, Washington 98006
CLIENT : Lap Tse

Job Number: WA11-17536 **Test Hole Log No.:** TH-1

Elevation Reference: _____ Page : 1 of 1
 Ground Surface Elevation: _____

DEPTH (feet)	SAMPLE NUMBER	TYPE SAMPLE	POCKET PETROMETER (tonelbf)	TORVANE (tonelbf)	P.I.D. (ppm)	WATER BEARING ZONE	LABORATORY TESTING
0						Beauty bark (fill) Medium dense, moist, dark brown, silty gravelly SAND with abundant roots (Relic topsoil) Dense, moist, brown, silty gravelly SAND (Weathered Till) Very dense, damp to moist, gray-brown, silty gravelly SAND	
1							
2						Test pit terminated at ~1.75-ft bgs No groundwater encountered at time of excavation No caving observed at time of excavation Gravel size observed up to 4" diameter Abundant gravel from 6"-18" bgs	
3							
4							
5							

LEGEND

	Static Water Level at Drilling		Water Seepage Indicator		Bucket Sample		200 Wash (% fines shown)
	Static Water Level		Water Bearing		Bag Sample		Grain Size Analysis (% fines shown)
	Perched Groundwater		MC = XX Moisture Content (%)				

TEST HOLE LOG



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PROJECT : Tse Residence
LOCATION : 13617 SE 54th Place
 Bellevue, Washington 98006
CLIENT : Lap Tse

Job Number: WA11-17536

Test Hole Log No.: TH-2

Elevation Reference: Ground Surface Elevation: Page : 1 of 1

DEPTH (feet)	SAMPLE NUMBER	TYPE SAMPLE	POCKET PETROMETER (tonerft)	TORVANE (tonerft)	P.I.D. (ppm)	WATER BEARING ZONE	LABORATORY TESTING
0						Medium dense to dense, moist, dark brown, very gravelly, silty SAND with roots and organics	
1						Dense, moist, brown, silty gravelly SAND (Weathered Till) Becomes very dense (Weathered Till) Very dense, damp, gray-brown, variegated fine SAND (Weathered Sandstone)	
2						Test pit terminated at ~2.0-ft bgs No groundwater encountered at time of excavation No caving observed at time of excavation Gravel size observed up to 5" diameter Abundant gravel from 6"-18" bgs	
3							
4							
5							

LEGEND

DATE	Static Water Level at Drilling		Water Seepage Indicator		Bucket Sample		200 Wash (% fines shown)
DATE	Static Water Level		Water Bearing		Bag Sample		Grain Size Analysis (% fines shown)
	Perched Groundwater	MC = XX	Moisture Content (%)				

MIGITATION PLAN:

- REMOVE INVASIVE BLACKBERRY AND INVASIVE IVY
- PLANT EVERGREEN GROUNDCOVER
- 16 KINNIKINNICK OR SALAL OR EQUIVALENT
EVERGREEN GROUNDCOVER PER BELLEVUE PLANTING GUIDE

5 YEAR PLAN:

- YEAR 1: REMOVE BLACKBERRY AND INVASIVE IVY
AND PLANT EVERGREEN GROUNDCOVER
- YEARS 2-5: ENSURE SURVIVAL OF NEWLY PLANTED
EVERGREEN GROUNDCOVER

YEAR 1	REMOVE BLACKBERRY AND INVASIVE IVY AND PLANT EVERGREEN GROUNDCOVER
YEARS 2 TO 5	ENSURE SURVIVAL OF NEWLY PLANTED EVERGREEN GROUNDCOVER