LITCHFIELD ENGINEERING
*Civil Engineering & Development Services*

# TECHNICAL INFORMATION REPORT
# for the
# EOS-EAST SHORT PLAT

Prepared for:

Merit Homes
805 Kirkland Avenue, Suite 100
Kirkland, WA 98033

Prepared By:
Keith A. Litchfield, P.E.

Date Issued: May 4, 2015


12840 81ST AVENUE NE ♦ KIRKLAND, WA 98034
PH 425-821-5038 FAX 425-821-5739

# Stormwater Technical Information Report
# For Small Sites

| | |
|---|---|
| **Project Name**: | **EOS East Short Plat** |
| Project Address: | 12626 NE 105th Place<br>Kirkland, WA 98033 |
| Parcel Number(s): | 6743700315 |
| **Name of Developer/Owner**: | **Merit Homes** |
| **Name of Engineer**: | **Keith Litchfield, PE** |
| Company: | Litchfield Engineering |
| Address: | 12840 81st Avenue NE, Kirkland WA 98034 |
| Phone Number: | 425-821-5038 |
| **Report Date**: | **May 4, 2015** |

**Engineer's Stamp**:


| This box to be completed by COK staff | |
|---|---|
| PERMIT # | |

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## A. Project Overview

**Project:** EOS East Short Plat
City of Kirkland Permit Number: PRE14-02257
Tax Parcel No. 674370-0315

**Site Area:** The project area is 0.39 acres.

**Location:** The site is located in the City of Kirkland at 12626 NE 105th Place within the SE ¼ of Section 33, Township 26 North, Range 5 East, W.M. See the vicinity map on page 2.

**Existing Adjacent Development:**

North – Single Family Residence
East – Single Family Residence
South – NE 105th Place
West – Single Family Residence

**Pre-developed Site Conditions:**

The project site presently consists of a single-family residence, garage and a driveway that connects to 105th Place NE. Except for the structures and driveways, the site is vegetated with grass areas, trees and shrubs. The site generally slopes from northeast to southwest an average slope of 4%.

**Post-developed Site Conditions:**

The project incorporates the construction of on and off-site infrastructure to support the future construction of 2 single-family residences; the existing home will be removed. The new homes will be accessed off of NE 105th Place via new residential driveways. Frontage improvements include installation of a cul-de-sac with curb & gutter, storm drainage and a 4.5' planter strip.

The project site is located within the Forbes Creek Sub-basin of the Lake Washington Drainage Basin. The site is defined by a single drainage basin that discharges to the west.

Figure 1: Vicinity Map

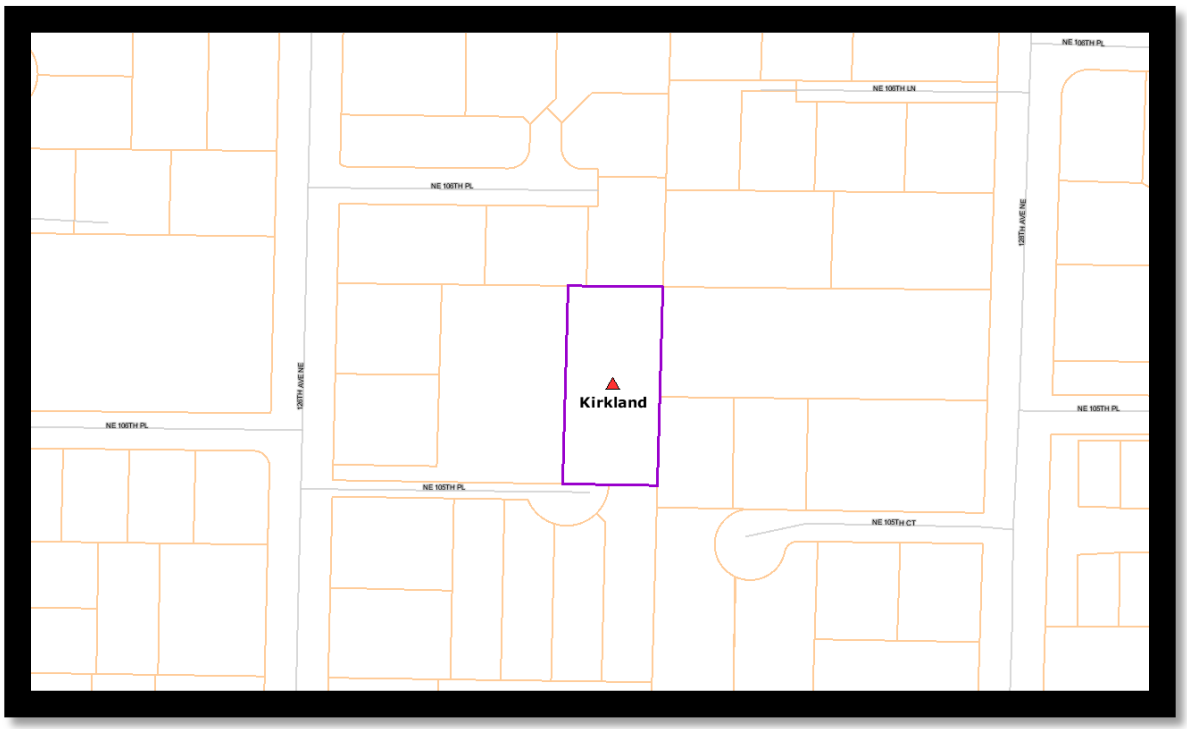



Figure 2: Soils Map-AgC, Alderwood Gravelly Sandy Loam

## B. Minimum Requirements

Based on the City of Kirkland Policy D-2 and the Drainage Review Flow Chart (see Appendix), since the project is proposing less than 10,000 SF of new plus replaced impervious area, Small Project Type II Drainage Review is required. The project must address evaluation of LID feasibility in compliance with Policy L-1 (see Section D) and compliance with the following Core and Special Requirements per the 2009 KCSWDM:

**1. Core Requirement #1: Discharge at the Natural Location**

The proposed on-site conditions and patterns emulate those of the existing site conditions. Onsite storm water from the developed site will discharge to the conveyance system within NE 105$^{th}$ Place.

**2. Core Requirement #2: Off-site Analysis**

An off-site analysis has been prepared for approval by the City of Kirkland see Section C of this report.

**3. Core Requirement #3: Runoff Control**

Although a formal flow control facility is not required the project is required to evaluate the feasibility of utilizing Low Impact Development (LID) techniques.

**4. Core Requirement #4: Conveyance System**

The proposed on-site conveyance system and tightline system will route runoff to a new conveyance system within NE 105$^{th}$ Place.

**5. Core Requirement #5: Temporary Erosion and Sediment Control Plan**

An erosion and sediment control plan, which will serve to minimize soil erosion/sedimentation during the proposed site construction, will be prepared for approval by the City of Kirkland.

**6. Core Requirement #6: Maintenance & Operation**

The on-site stormwater system will be maintained by the homeowners. The off-site conveyance systems will be maintained by the City of Kirkland.

**7. Core Requirement #7: Financial Guarantees & Liability**

Financial Guarantee & Liability commitments between the property developer and City have not yet been established.

**8. Core Requirement #8: Water Quality**

The proposed Pollution Generating Impervious Surface is 3,180 SF which is less than the 5,000 SF thresholds; therefore water quality is not required.

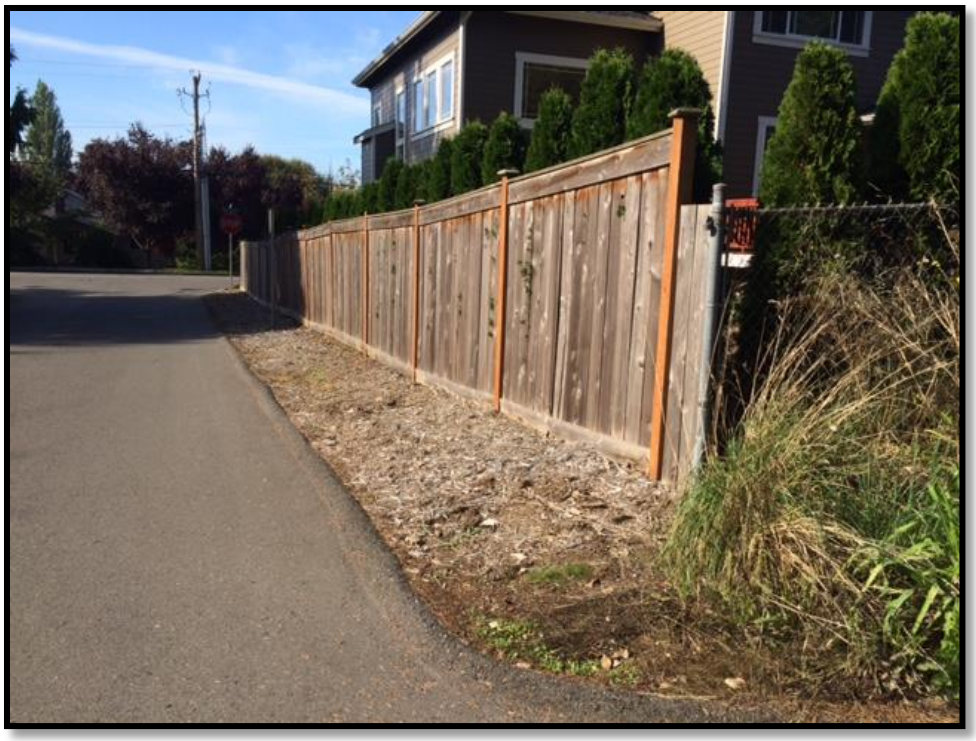
## C. Off-Site Analysis

Adopted Basin Plan: The site is located within the Forbes Creek Sub-Basin of the Lake Washington Drainage Basin. See maps on the following pages for details of the downstream conveyance drainage path.

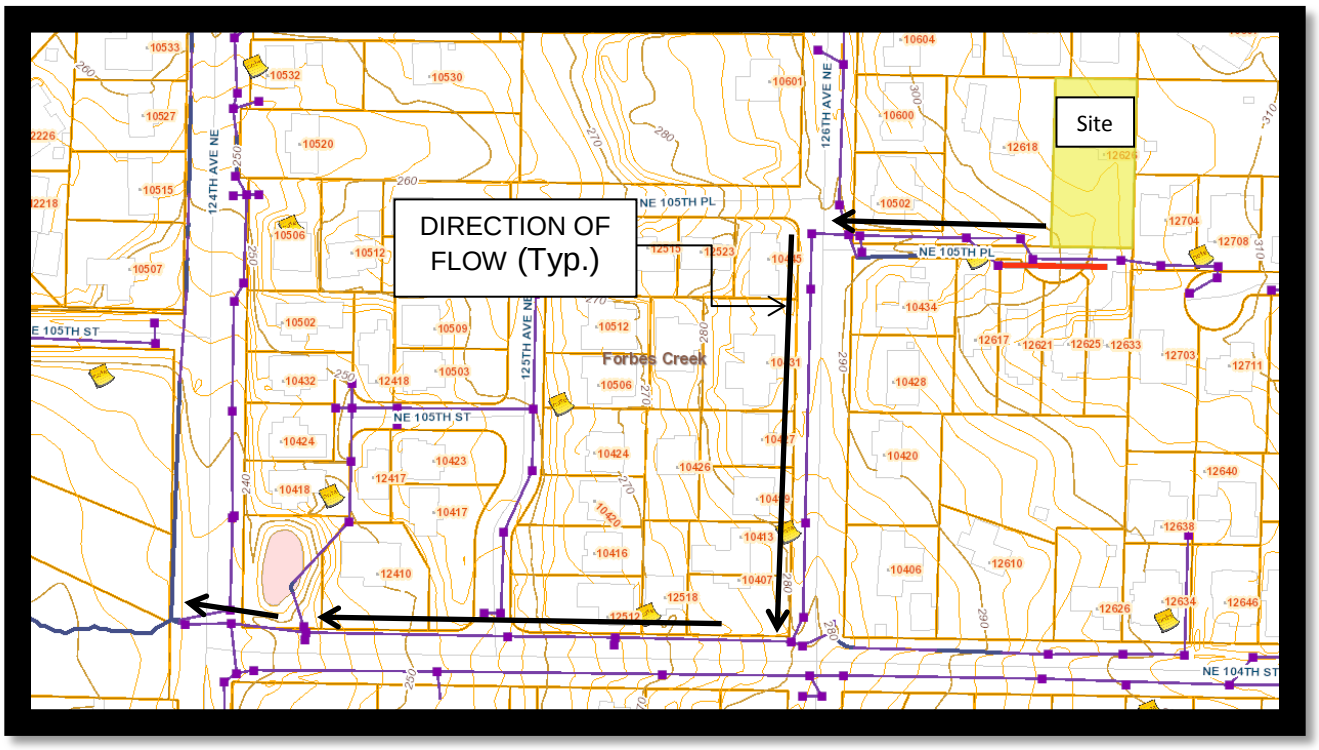
Upstream Tributary Area: There is a no significant area that is tributary the site.

Downstream Analysis:
A field review of the downstream conditions was performed on October 10, 2014. The weather was sunny and the temperature was approximately 70 degrees. A visual reconnaissance was performed utilizing information obtained from the City of Kirkland Public Works records. Please refer to storm drainage mapping exhibits that follow for a depiction of the downstream drainage conditions.

Runoff from the project site (pictured below) generally sheet flows to the south into the existing storm system on the south side of NE 72nd Street.



Runoff continues to the west for approximately 310 feet to the intersection of 124th Avenue NE. Runoff at this point is directed through a 12" culvert to the north under NE 72nd Street. Runoff is conveyed on the east side of 124th Avenue NE to the north for approximately 500' via culverts and grass lined ditch segments before entering a 12" tightlined system that conveys runoff ultimately to Forbes Creek.




Downstream Concerns & Effects of Proposed Project: Discharge from the developed site will discharge to an existing public conveyance system. The downstream system appears capable of conveying the release rates associated with the project. Significant impacts to the downstream system are not anticipated or expected as no significant signs of drainage related problems were observed.

## Resource Review

**Sensitive Areas:** The City of Kirkland Sensitive areas mapping was reviewed and there are no sensitive areas on-site.

**Drainage Problems:** No downstream problems have been reported to the City of Kirkland.

## D. Storm Assessment & Feasibility of Stormwater LID

A formal flow control facility requirement is waived since it meets the criteria for Small Project Drainage Review Type II. A requirement of this type of review includes an evaluation for Low Impact Development (LID). These requirements state that full dispersion and full infiltration must be implemented if feasible. However, the native vegetative flow paths are limited and the Alderwood soils are not conducive to infiltration, therefore we must apply mitigation for at least 10% of the lot area.

Project Area Breakdown:

Existing Impervious:

Area $_{\text{on-site}}$ = 2,927 SF (includes roof, driveway, walks, shed, etc.)
Area $_{\text{off-site}}$ = 375 SF (driveway-future ROW dedication area)

New Impervious:

Area $_{\text{on-site}}$ = 7,892 SF (includes roof, driveway, patios, & walks)
Area $_{\text{off-site}}$ = 980 SF (includes new cul-de-sac & driveway approach)

Flow Control BMP Sizing:

| | LOT AREA | REQUIRED (10%) MITIGATION AREA | FLOW CONTROL BMP PROPOSED |
|---|---|---|---|
| LOT 1 | 7,200 SF | 720 SF | Drywell |
| LOT 2 | 7,204 SF | 720 SF | Drywell |

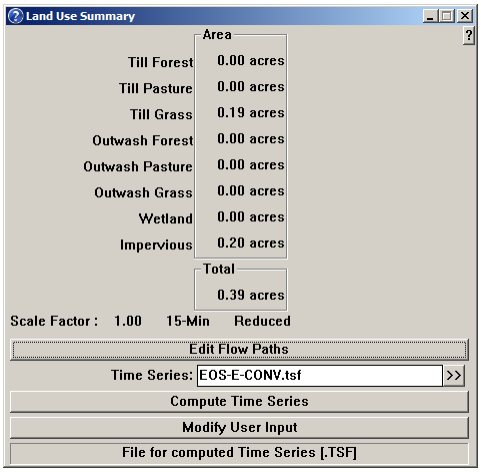
The proposal includes a drywell with an overflow to the public storm system. Per Section C.2.3.4 for loam soil, 570 CF of gravel is required for 1,000 SF of impervious area. The BMP requirements, notes and options have been added to the plans.

Therefore;

Drywell Sizing = 570 x (720/1000) = 410.4 CF

## E. Conveyance System Analysis and Design

The proposed conveyance system will tightline flows through the project site to the natural discharge location. The conveyance calculations were performed using Manning's Equation. The conveyance system was checked to ensure that during the 100-year storm event, the system would function adequately. The 100-year peak flow from the developed site was compared to the maximum capacity of the pipe. Using the Manning's Equation, the maximum capacity of a 6" pipe sloped at 0.5% is 0.43 CFS, which is much greater than the actual peak discharge rate of 0.332 CFS for the entire site (see KCRTS output below).




Flow Frequency Analysis
Time Series File:eos-e-conv.tsf
Project Location:Sea-Tac

| ---Annual Peak Flow Rates--- | | | -----Flow Frequency Analysis------- | | | |
|---|---|---|---|---|---|---|
| Flow Rate (CFS) | Rank | Time of Peak | - - Peaks - - (CFS) | Rank | Return Period | Prob |
| 0.095 | 6 | 8/27/01 18:00 | **0.332** | **1** | **100.00** | 0.990 |
| 0.071 | 8 | 1/05/02 15:00 | 0.222 | 2 | 25.00 | 0.960 |
| 0.222 | 2 | 12/08/02 17:15 | 0.141 | 3 | 10.00 | 0.900 |
| 0.077 | 7 | 8/23/04 14:30 | 0.136 | 4 | 5.00 | 0.800 |
| 0.141 | 3 | 11/17/04 5:00 | 0.119 | 5 | 3.00 | 0.667 |
| 0.119 | 5 | 10/27/05 10:45 | 0.095 | 6 | 2.00 | 0.500 |
| 0.136 | 4 | 10/25/06 22:45 | 0.077 | 7 | 1.30 | 0.231 |
| 0.332 | 1 | 1/09/08 6:30 | 0.071 | 8 | 1.10 | 0.091 |
| Computed Peaks | | | 0.295 | | 50.00 | 0.980 |

## F. Erosion/Sedimentation Control Design

Several standard Best Management Practices (BMP's) will be utilized by the contractor to minimize the amount of erosion and sedimentation that may be perpetuated by the construction of the site. Some of the measures includes filter fence and standard ground cover practices.

**Silt fence** perimeter protection has been laid-out and designed to meet the criteria outlined in KCSWDM, Appendix D D.4.3. This section allows the use of a silt fence BMP for the treatment of construction runoff as sheet flow as long as the maximum flowpath lengths do not exceed those outlined in this section based on the site topography.

The existing slope in the proposed area of disturbance is 10% or less and is approximately 90 feet in length. Using Section D.4.3 the maximum flowpath allowed for a site slope of 10% or less is 150-feet. Therefore, the silt fence in conjunction with the retained natural vegetated areas will be effective at trapping sediment and protecting the downstream system.

**Catch basin filters** will be used on all new and existing downstream inlets to prevent coarse sediment from entering storm drainage systems. Temporary filters around storm drains will improve the quality of water discharged.

## G. Operations & Maintenance Manual

The on-site stormwater facilities will be privately maintained by the homeowners; standard Operation & Maintenance guidelines are provided in Appendix B.

# APPENDIX A
## Soil Evaluation

December 18, 2014



Merit Homes

13023 NE 70th Place

Kirkland, WA 98033

Dear Mr. Griffis:

SUBJECT: Soils Evaluation and Percolation Testing for Subdivision of 2 Individual Properties Located at 126th AVE N.E. and N.E. 105th Street. 5 Building Lots Total.

Description of properties: Both properties front along the north side of N.E. 105th Place. Site number one (western lot) is approximately 20, 500 square feet in area. It has an existing 2 story home with detached mother-in-law dwelling. The property is fenced and has an asphalt driveway at the southwest corner running north to a parking area. There is a graveled parking area along the east side of the driveway. Soil under and along this corridor would be compacted from years of vehicular traffic, unlike surrounding undisturbed soil.

The second property lies to the east of the first and is approximately 16,250 square feet. They share a common boundary. According to the proposal for development, each property will relinquish some area for completion and improvement of the cul-de-sac. This lot has an existing 2 story dwelling existing on the northern 1/3.

Throughout both properties, there are existing evergreen trees. They have been planted in rows along the common boundary line and along the eastern boundary of site number 2. Predicated upon soils encountered on both properties, these trees do not appear to be native. The natural soil appears to be on an "Alderwood" series, as defined by the USDA Soil Conservation Service. This soil is characterized by gentle sloping topography and gravely sandy loam. Permeable soil depth is somewhat variable but generally less than 4 feet depth. Typical native vegetation would be fern, blackberry ground cover and Alder, Big Leaf Maple, Vine Maple and Western Cedar trees. These named species typically thrive in a shallow soil that is prone to retaining moisture during the late fall

Steve Baima
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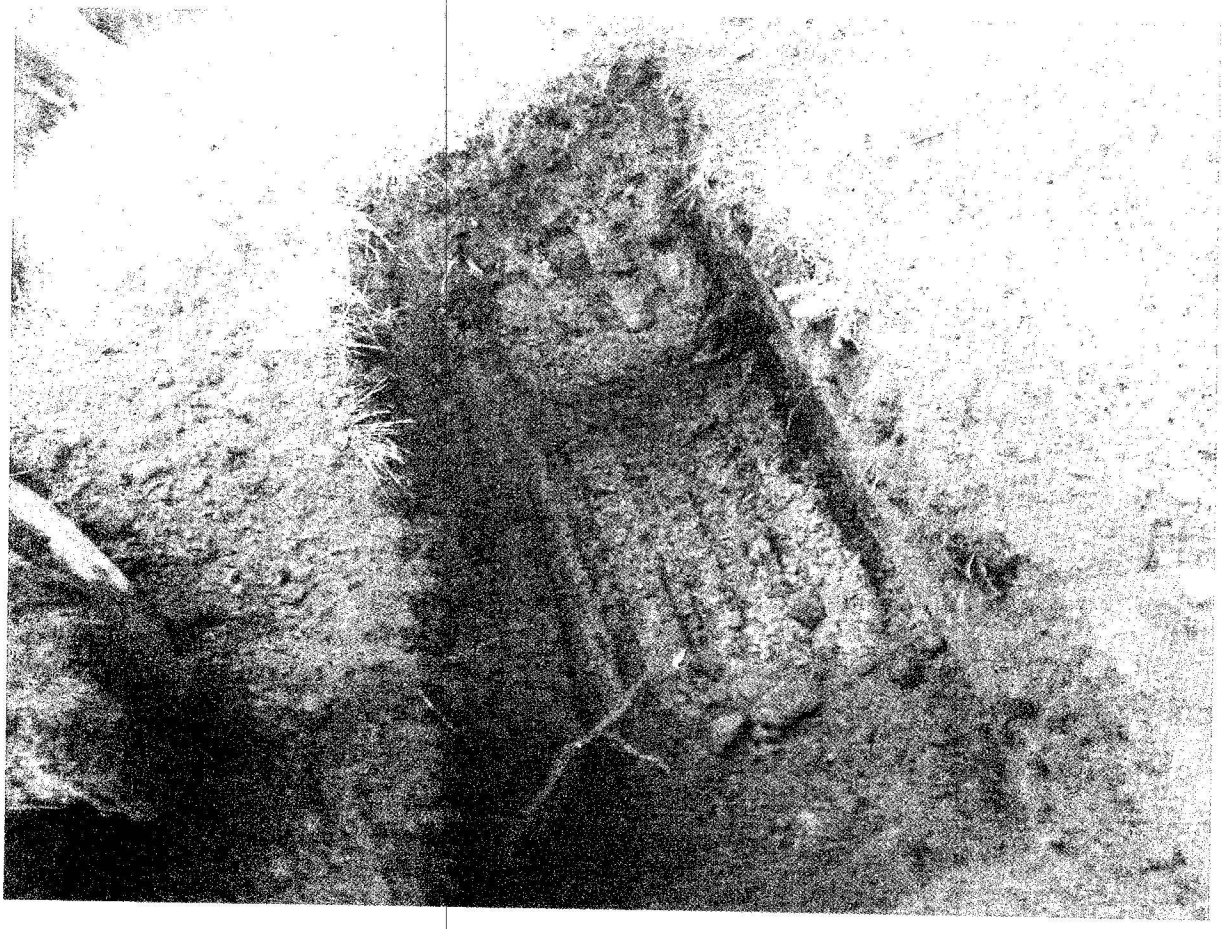
WA State Designer License #5100104

through late spring months. This moisture is most often found in the form of ponding ground water at a depth slightly above the impervious glacial till layer.

In my descriptions of soils in each of the test pits, I have described the soil as slightly gravely, sandy loam with a few cobbles. According to the U.S. Department of Agriculture, this would be classified as a type 4 soil. This is to say that the major component of the soil is loam, with sandy textural component. It is important that I make this distinction over a type 3 soil of loamy sand. In this class, the predominant soil type would be sand with loamy texture within. Although it is more common to find Alderwood soil of type 4, the percolation rates on these two sites should probably be more closely associated with a type 3 soil. This is due to the fact that the percolation rate was quite rapid when the tests were conducted at a depth approximately 12 inches above the layer of glacial till.

I will describe each test pit and corresponding location in greater detail. Please refer to the site drawings for the location of each. I have also attached a digital color photograph of typical conditions in the test pits. In the photo you can clearly see a glacial till layer at the bottom of the pit. It is characterized by tan or gray gravely, sandy loam. It is extremely dense – almost impossible to dig by conventional hand methods. A small backhoe will generally just scrape the surface.

Above this dense layer, one will find a transition layer between the permeable soil and the cemented layer. This soil is lighter in color, as compared to the organic layers of permeable soil. Its color is generally mottled with red, tan, gray or shades of brown. This is caused by oxidation of the minerals contained in the soil from saturating annual rainy periods. Moisture will penetrate the permeable layer of soil and accumulate atop the glacial till. As it accumulates, it will reveal itself in the form of standing water at that depth or will gradually seep through the soil and seek a lower level. It can expose itself in topographic depressions in the form of ponds, lakes or streams. During the summer months, the only indicator of annual ground water is through the presence of mottled soils at the offending depth. It is imperative to achieve maximum recharge effect that all infiltrative trenches be installed at a recommended depth of 12 inches (minimum) above the glacial till layer.



LOG OF SOILS

Note: I have made every attempt to place test pit and percolation holes in areas of each lot where there will be open yard spaces. Although some tests were placed with reference to existing structures or driveways, they appear to be very representative of overall conditions between the two sites.

SL-1: 20" compact gravely loamy sand with a few cobbles (appears to be fill along driveway)
21" – 42" reddish-brown sandy loam (TYPE 4)
43" – 48" transition to tan/gray gravely sandy loam. Damp and mottled with reds, tan, brown and gray
Cemented glacial till at 49" Percolation rate at 36" was 7 minutes per inch of head fall.

SL-2: 2" dark brown loam
3" – 42" dark brown sandy loam to slightly reddish brown sandy loam (type 4)
43" – 46" dry transition layer from brown to tan, gray, reddish, mottled sandy loam
47" – cemented glacial till consisting of tan or gray, gravely sandy loam.
Percolation rates of 4 minutes per inch at 36" depth

SL – 3: 4" dark brown/black loam
5" – 29" brown/reddish brown slightly gravely sandy loam (type 4)
30" – 32" transition layer of mottled gravely sandy loam.
33" – Cemented tan glacial till
Percolation rate at 24" depth was 8 minutes per inch fall.

SL – 3b: 10" dark brown loam
11" – 32" brown, slightly gravely sandy loam with a few cobbles (type 4)
33" – 37" transition layer of mottled (dry) sandy loam
38" – cemented glacial till.

SL-4: 6" black loam
7"—29" reddish/brown gravely sandy loam (type 4)
30" –34" transition to mottled and damp sandy loam
35" –Cemented tan, gravely sandy loam (glacial till)
Percolation rate 10 minutes per inch fall.

Soil Log 5: 6" dark brown/black loam
7" –30" deep brown, slightly reddish, sandy gravely loam with a few cobbles. Good root penetration to depth of 28"
31" –33" transition layer of damp, brown/gray mottled sandy loam
34" – cemented gray glacial till.
Percolation rate of 8 minutes per inch at 28" depth

Soil Log 6: 9" dark brown sandy loam
10" – 25" Tan/red mottled gravely sandy loam
26" – 30" brown gravely sandy loam (most probable fill added over natural soil)
31" – 38" dark brown/black loam
39" – 58" brown gravely sandy loam (damp)
59" –water is seeping in rapidly at the bottom of the pit.
Percolation rate at 40" 6 minutes per inch of head fall.

I hope that my description of soil conditions and corresponding location of test pits will be sufficient to proceed with storm water management plans on these two sites. Please contact me if I can be of any additional assistance on this project.

Sincerely,

Steve A. Baima
Professional Septic Designer
#5100104 State of Washington.

March 16, 2015

Balma Enterprises

425-466-6956

Merit Homes

13023 NE 70th Place

Kirkland, WA 98033

Dear Greg:

SUBJECT: Second Site Visit to 5 lot plat in vicinity of Ne 105th Place and 126th AVE NE Kirkland.

It seems that we have established the parameters required by the surface water management personnel with the City of Kirkland. Although this may come as a disappointment, I don't believe that today's visit or the data collected, will have any impact on the information that was collected and submitted in December of 2014.

Today's placement of soil test pits may be slightly more indicative of the conditions where infiltration systems would be located. Also, because 2 of the 3 existing homes on the property are vacant, I was less concerned with interruption to the resident's daily routines. Only 2 of the 5 lots had today's test pits located in the same areas where the originals were placed.

All soil test pits were excavated to a full depth of 72 inches. Once the depth revealed a layer of glacial till, nothing changed throughout the remaining depth. Due to record rainfall accumulation yesterday, ground water was present in each of the pits, at the depth where permeable soil ended and glacial till layer began.

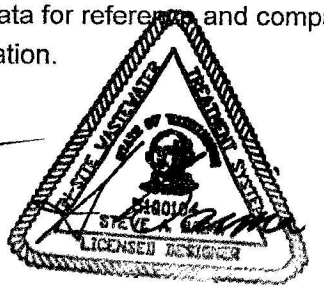
Percolation tests were run in the 12 – 14 inches immediately above the water table. It was surprising that the perc rates were as rapid as they were. I believe that it is due to the following: When sub-surface water travels down slope, it carves out its own passage between stones and surrounding root growth. Many of these fissures are well defined and permit free movement of moisture in the rain-soaked soil. As a direct result, my percolation tests, conducted above the depth of ground water intrusion, allows the same free movement and transport of water, artificially added to the soil for purpose of conducting percolation tests. Perc rates calculated today are much more rapid than the original rates conducted in December 2014 when soils appeared to be more well drained.

A brief description of soils encountered at each of the test pits is attached. Numbers correspond to the lots numbers on the site drawing.

I am including a copy of my original data for reference and comparison. Please let me know if you need additional information or clarification.

Sincerely.

Steve Balma
permian48@comcast.net
WA State Designer License #5100104



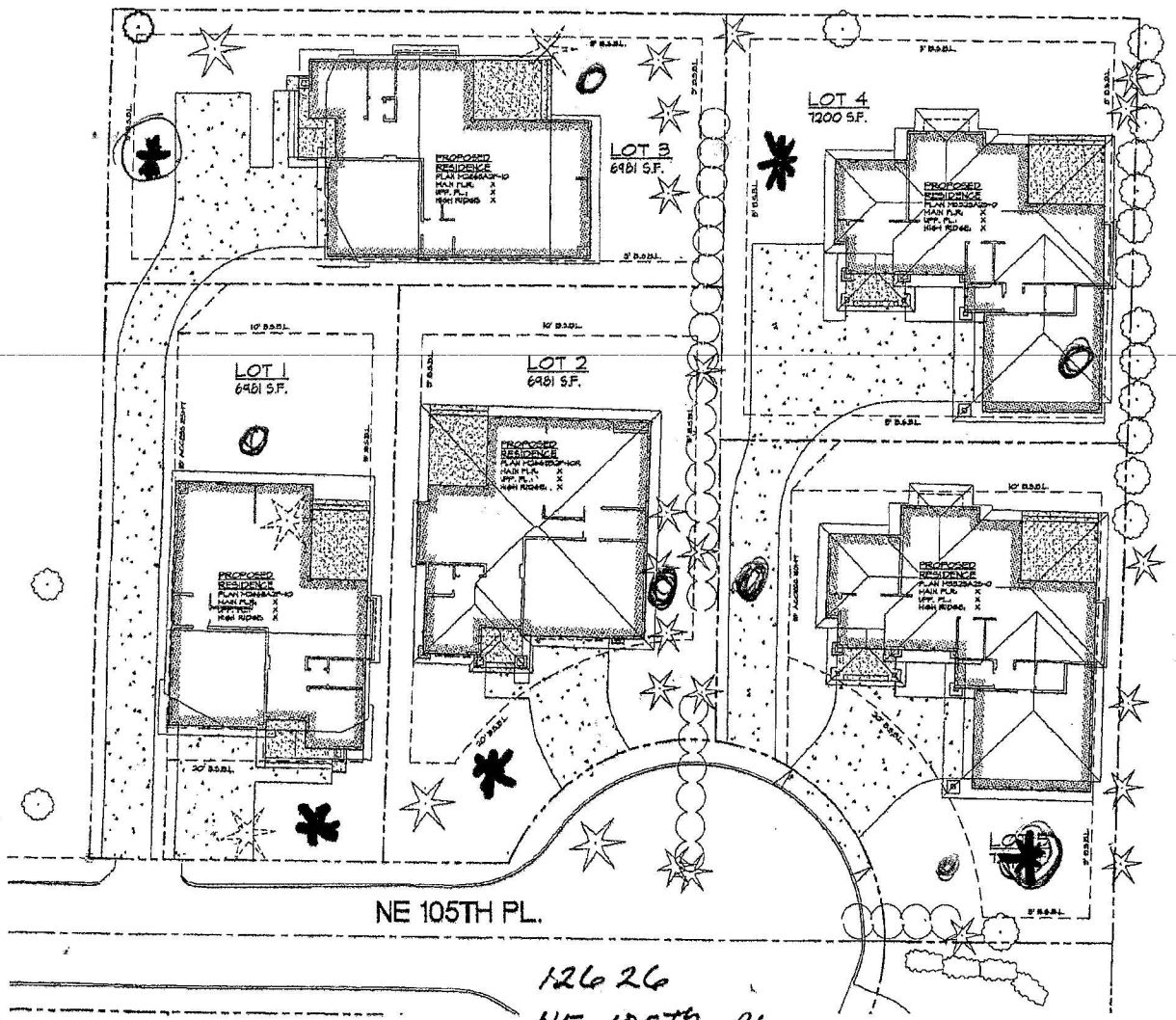
Lot #1: 29" disturbed soil. Thought to possibly be re-graded from on site.
30"" – 72" well defined glacial till consisting of dense to cemented gray gravely sand with cobbles.
Water table at 28" depth Perc depth between 13" to 28" Rate from 2 minutes per inch at 14" depth to 5 minutes per inch at 24" depth.

Lot #2: 20" dark brown to reddish-brown, gravely sandy loam. Rapid water intrusion at 13" depth
22" – 72" dense to cemented gray, glacial till with cobbles. Gray in color.
Perc rate run between 9" depth to 18" depth. Less than 2 minutes per inch at 10" below surface

Lot #3: 14" Dark brown gravely sandy loam. 15" – 34" reddish brown gravely sandy loam
35" – 72" gray, dense to cemented glacial till. Gravely, sand with cobbles.
Percolation tests run between 15" and 32" depth. Rate ranged from 4 minutes per inch to 7 minutes per inch

Lot #4: 26" dark brown to reddish brown gravely sandy loam with a few cobbles
27" – 72" gray glacial till, dense to cemented. Water table at 30" depth.
Perc rate run at 24" depth 4 Minutes per inch

Lot #5: 34" Dark brown to reddish brown gravely sandy loam with a few cobbles
35" – 72" gray, dense to cemented, glacial till of silty, gravely sand with cobbles and boulders.
Ground water found at 30" depth. Percolation rates run between 18 and 24" depth were 5 minutes per inch.




12626 NE 105TH PL
Kirkland

EOS SHORT PLATS
3/10/15

* TEST PIT

# APPENDIX B
## Maintenance & Operation

## NO. 5 – CATCH BASINS AND MANHOLES

| Maintenance Component | Defect or Problem | Condition When Maintenance is Needed | Results Expected When Maintenance is Performed |
|---|---|---|---|
| Structure | Sediment | Sediment exceeds 60% of the depth from the bottom of the catch basin to the invert of the lowest pipe into or out of the catch basin or is within 6 inches of the invert of the lowest pipe into or out of the catch basin. | Sump of catch basin contains no sediment. |
| | Trash and debris | Trash or debris of more than ½ cubic foot which is located immediately in front of the catch basin opening or is blocking capacity of the catch basin by more than 10%. | No Trash or debris blocking or potentially blocking entrance to catch basin. |
| | | Trash or debris in the catch basin that exceeds $^1/_3$ the depth from the bottom of basin to invert the lowest pipe into or out of the basin. | No trash or debris in the catch basin. |
| | | Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane). | No dead animals or vegetation present within catch basin. |
| | | Deposits of garbage exceeding 1 cubic foot in volume. | No condition present which would attract or support the breeding of insects or rodents. |
| | Damage to frame and/or top slab | Corner of frame extends more than ¾ inch past curb face into the street (If applicable). | Frame is even with curb. |
| | | Top slab has holes larger than 2 square inches or cracks wider than ¼ inch. | Top slab is free of holes and cracks. |
| | | Frame not sitting flush on top slab, i.e., separation of more than ¾ inch of the frame from the top slab. | Frame is sitting flush on top slab. |
| | Cracks in walls or bottom | Cracks wider than ½ inch and longer than 3 feet, any evidence of soil particles entering catch basin through cracks, or maintenance person judges that catch basin is unsound. | Catch basin is sealed and structurally sound. |
| | | Cracks wider than ½ inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks. | No cracks more than $^1/_4$ inch wide at the joint of inlet/outlet pipe. |
| | Settlement/ misalignment | Catch basin has settled more than 1 inch or has rotated more than 2 inches out of alignment. | Basin replaced or repaired to design standards. |
| | Damaged pipe joints | Cracks wider than ½-inch at the joint of the inlet/outlet pipes or any evidence of soil entering the catch basin at the joint of the inlet/outlet pipes. | No cracks more than ¼-inch wide at the joint of inlet/outlet pipes. |
| | Contaminants and pollution | Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint. | Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film. |
| Inlet/Outlet Pipe | Sediment accumulation | Sediment filling 20% or more of the pipe. | Inlet/outlet pipes clear of sediment. |
| | Trash and debris | Trash and debris accumulated in inlet/outlet pipes (includes floatables and non-floatables). | No trash or debris in pipes. |
| | Damaged | Cracks wider than ½-inch at the joint of the inlet/outlet pipes or any evidence of soil entering at the joints of the inlet/outlet pipes. | No cracks more than ¼-inch wide at the joint of the inlet/outlet pipe. |

## NO. 5 – CATCH BASINS AND MANHOLES

| Maintenance Component | Defect or Problem | Condition When Maintenance is Needed | Results Expected When Maintenance is Performed |
|---|---|---|---|
| Metal Grates (Catch Basins) | Unsafe grate opening | Grate with opening wider than $^{7}/_{8}$ inch. | Grate opening meets design standards. |
| | Trash and debris | Trash and debris that is blocking more than 20% of grate surface. | Grate free of trash and debris. footnote to guidelines for disposal |
| | Damaged or missing | Grate missing or broken member(s) of the grate. **Any open structure requires urgent maintenance.** | Grate is in place and meets design standards. |
| Manhole Cover/Lid | Cover/lid not in place | Cover/lid is missing or only partially in place. **Any open structure requires urgent maintenance.** | Cover/lid protects opening to structure. |
| | Locking mechanism Not Working | Mechanism cannot be opened by one maintenance person with proper tools. Bolts cannot be seated. Self-locking cover/lid does not work. | Mechanism opens with proper tools. |
| | Cover/lid difficult to Remove | One maintenance person cannot remove cover/lid after applying 80 lbs. of lift. | Cover/lid can be removed and reinstalled by one maintenance person. |

## NO. 6 – CONVEYANCE PIPES AND DITCHES

| Maintenance Component | Defect or Problem | Conditions When Maintenance is Needed | Results Expected When Maintenance is Performed |
|---|---|---|---|
| Pipes | Sediment & debris accumulation | Accumulated sediment or debris that exceeds 20% of the diameter of the pipe. | Water flows freely through pipes. |
| | Vegetation/roots | Vegetation/roots that reduce free movement of water through pipes. | Water flows freely through pipes. |
| | Contaminants and pollution | Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint. | Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film. |
| | Damage to protective coating or corrosion | Protective coating is damaged; rust or corrosion is weakening the structural integrity of any part of pipe. | Pipe repaired or replaced. |
| | Damaged | Any dent that decreases the cross section area of pipe by more than 20% or is determined to have weakened structural integrity of the pipe. | Pipe repaired or replaced. |
| Ditches | Trash and debris | Trash and debris exceeds 1 cubic foot per 1,000 square feet of ditch and slopes. | Trash and debris cleared from ditches. |
| | Sediment accumulation | Accumulated sediment that exceeds 20% of the design depth. | Ditch cleaned/flushed of all sediment and debris so that it matches design. |
| | Noxious weeds | Any noxious or nuisance vegetation which may constitute a hazard to County personnel or the public. | Noxious and nuisance vegetation removed according to applicable regulations. No danger of noxious vegetation where County personnel or the public might normally be. |
| | Contaminants and pollution | Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint. | Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film. |
| | Vegetation | Vegetation that reduces free movement of water through ditches. | Water flows freely through ditches. |
| | Erosion damage to slopes | Any erosion observed on a ditch slope. | Slopes are not eroding. |
| | Rock lining out of place or missing (If Applicable) | One layer or less of rock exists above native soil area 5 square feet or more, any exposed native soil. | Replace rocks to design standards. |