



# Residential Drainage Review Quality Control Checklist For My Building Permit Applications

Review Engineer:		Building Permit Number:	
Type of Drainage Review Performed:			

The following three separate PDF documents to be saved into the FINAL subfolder on the P drive:

**APPROVED SITE PLANS**

**DECLARATION OF COVENANT**

**ENGINEERING REVIEW PACKAGE**

Combine all separate files together in one PDF file in the following order:

This QC Worksheet	
Site Areas Worksheet	
WDOE NPDES Worksheet	
Post Construction Soil Worksheet	
Drainage Assessment or Technical Information Report	
Geotechnical Soils Report or Septic Soil Logs	
Geotechnical Evaluation of BMPs	
Flood Hazard Certification	
Drainage or Road Variance	
Other Documents	

The following documents are to be completed and left in the WORKING/RENG subfolder:

Field Visit Report and Site Photos	
Review Comments/Markups in RFI subfolder	
Copy all project related emails from Outlook to the Email Correspondence subfolder	
Drainage or Access Easements	
Plat Maps or BLAD of Parcel	
Other Supporting Documents	

The following tasks to be completed in Accela:

**Conditions** – Add in the standard engineering site conditions

**Documents** – Upload the Declaration of Covenant and any Review Comment Letters (RFIs)

**Workflow** – Update workflow status and enter time for each of the milestones

**Comments** – Add Comments for each of the milestones

**Once the Road and Drainage Review Workflow has been approved and closed:**

**Assign** the Engineering Services Review workflow to the appropriate Engineer III for QC review

Directed TIR Drainage Report  
Sweet Single Family Project  
29120 310<sup>th</sup> Avenue SE  
Ravensdale, WA 98051

Project Address:	29120 310 <sup>th</sup> Avenue SE Ravensdale, WA 98051 (Unincorporated King County)
Parcel Number:	042107-9187
Permit Number:	<b>DWEL21-0051</b>
Gross Site Area:	852,109 sf = 19.56 acres
New + Replaced Impervious:	<u>9,831 sf</u>
New+ Replaced PGIS Area:	4,993 sf
Soil type:	loamy fine sand (Recessional Outwash)
Name of Owner:	Geoffrey and Julie Sweet
Name of Engineer:	Duffy Ellis, P.E.
Company:	Civil Engineering Solutions 102 NW Canal Street Seattle, WA 98107
Phone Number:	206-930-0342
Report Date:	May 3, 2023

## Site Areas Worksheet, continued

Parcel Number	042107-9187	DWEL21-0051
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<b>Table 1 – Impervious Surface Once Project is Complete</b>	<b>New and/or Replaced (Square Feet)</b>	<b>Existing to Remain<sup>1</sup> (Square Feet)</b>
Primary Residence Structure Roof Area <sup>2</sup> (Including attached garage, covered patios/decks or covered porch)	2,815	
Accessory Detached ADU/Garage Structure Roof Area (Detached ADU, garage, shop, etc.)	--	
Other Structure Roof Areas (Barns, Sheds, Carports, etc.)	1,600	
On-site Driveway Area (includes new paved driveway and re-routed gravel driveway)	4,993	(gravel) 2,331
Off-site Driveway Area	--	
Walkways / Sidewalks / Steppingstone Area	--	
Uncovered Porch, Decks and / or Patios Area	423	
Other Impervious Areas:	--	
Other Impervious Areas:	--	
Totals	9,831	
Total Impervious Surface (New and Existing) Once Project is Complete	12,162	
<b>Total Clearing Limits, Site Disturbance / Graded Areas</b> (This area should be shown on the Temporary Erosion and Sedimentation Control (TESC) Plan and shall include Primary Septic Drain Field)		30,000
<b>Total New Pervious Areas</b> (Total Clearing Limits minus total New/Replaced Impervious Area)		17,838

Continued

<sup>1</sup>Include existing impervious surfaces that will remain after project completion, and any existing impervious surfaces that have been added since 1/8/2001 without a permit. Do not include existing impervious surfaces to be removed,  
<sup>2</sup> When calculating impervious surface areas for buildings do not list the living/useable space square-footage, instead list the building roof square- footage measured to the outside edge of the eave or gutter.

## Site Areas Worksheet, continued

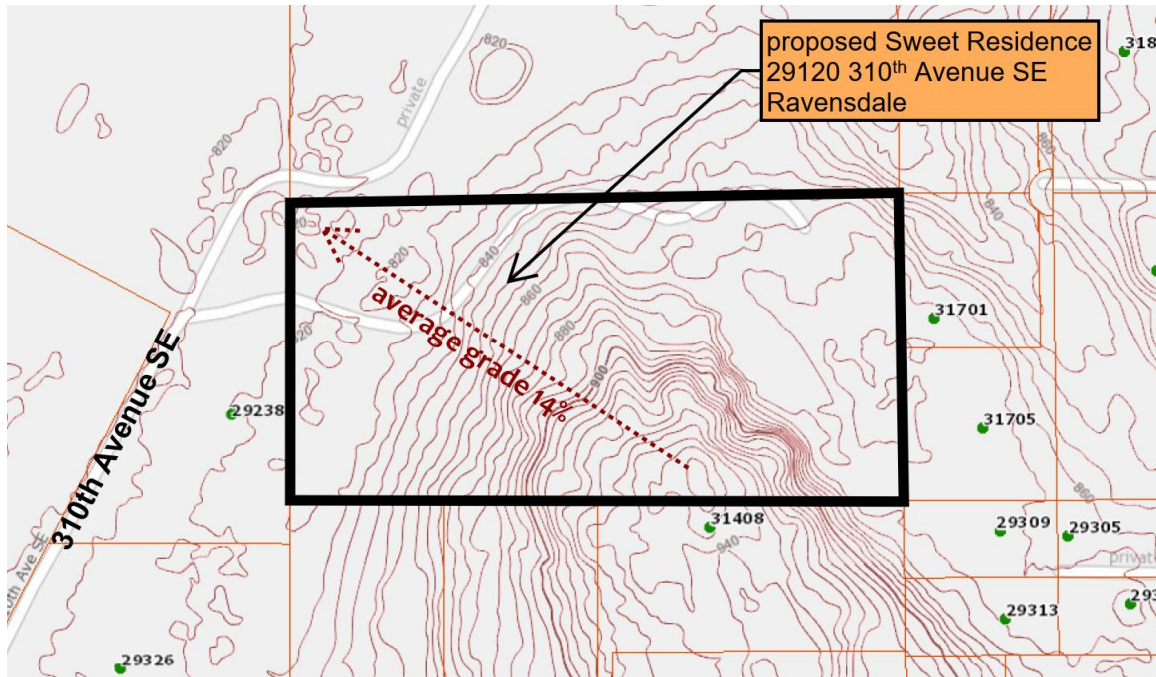
<b>Table 2 – Existing Impervious Surfaces to be Removed or Demolished</b>	<i>(Square Feet)</i>
Existing Structures <i>(House, Garage, Barn, Sheds, etc.)</i>	N/A
Existing Surfacing <i>(Gravel, Asphalt, Concrete, etc.)</i>	2,758
Other Existing Impervious:	N/A
Total Existing Impervious Surface to be Removed	2,758

<b>Table 3 – Total Impervious Surfaces Added since 1/8/2001 Without a Permit</b> <i>(Square Feet)</i>	N/A
PROVIDE DESCRIPTION OF AREAS: N/A to the best of our knowledge	

<b>Table 4 – Earthwork Quantities</b>	
Total Onsite Excavation Volume (Cubic Yards)	100
Total Material to be Exported from Site (Cubic Yards)	0
Total Material to be Imported to Site (Cubic Yards)	0
Total Area Cleared and or Graded (Acres)	0.7



## Map of Site



### 1. Section 1: Project Summary & Overview

- Single Family Residence
- Parcel area = 19.56 acres
- New/Replaced impervious: See SA worksheet
- Soils: (Qvr) Recessional Outwash per Geologic Mapping (see map in appendix)
- Septic Logs: Loamy fine & medium sand
- Full dispersion BMP proposed for main house
- Full Infiltration BMP proposed for pole barn
- Full infiltration BMP for new gravel driveway
- Flow Control (CR 3): 0.15 cfs Peak flow Exception achieved

#### Project Summary

A new, single-family residence is proposed for the owners on this vacant 19.6-acre parcel located east of Ravensdale, Washington and north of the Green River near the foothills of the cascades in unincorporated King County. The site is roughly 1 mile southeast of Retreat Lake and less than a mile southwest of Sugarloaf Mountain Forest. It is just off of Retreat Kanaskit Rd. along 310 Avenue SE.

This nearly 20-acre parcel is undeveloped and presently contains an existing gravel drive access which bisects the property. No structures exist on property to our knowledge. The proposed house is roughly 250-feet from the western property line along the existing gravel driveway, situated about halfway between the north and south property lines. Also proposed is a new pole barn and some re-located driveway.

The owners have hired Lane Williams Architects to design the house. During the review process we have switched to a TIR drainage report format in June 2022 since the total project impervious now exceeds 5,000 sf including the new house, new gravel driveway and recently added pole barn that the property owners requested be added to the site plan in May of 2022. Please see Site Area Worksheet, and our spreadsheet attached to this narrative. Given the new impervious exceeds 5,000 square feet, we are preparing a Directed King County Core 1-9 TIR Report.

### 1.1.2 DRAINAGE REVIEW TYPES AND REQUIREMENTS

TABLE 1.1.2.A REQUIREMENTS APPLIED UNDER EACH DRAINAGE REVIEW TYPE							
Simplified	Single family residential projects and agricultural projects that result in ≥2,000 sf of new plus replaced impervious surface or ≥7,000 sf of land disturbing activity but do not exceed the new plus replaced PGIS, new PGPS, and new pervious surface thresholds specified in Sec. 1.1.2.1; OR is an agricultural project that qualifies for the “Impervious Surface Percentage Exemption For Agricultural Projects”.						
Directed	Single family residential projects and agricultural projects that result in ≥2,000 sf of new plus replaced impervious surface or ≥7,000 sf of land disturbing activity that are not subject to Simplified Drainage Review or Large Project Drainage Review						
Targeted	Projects that are not subject to Directed, Full or Large Project Drainage Review, AND have characteristics of one or more of the following categories of projects: 1. Projects containing or adjacent to a flood, erosion, or steep slope hazard area; projects within a Critical Drainage Area or Landslide Hazard Drainage Area. 2. Projects that construct or modify a drainage pipe/ditch that is 12" or larger or receive runoff from a 12" or larger drainage pipe/ditch. 3. Redevelopment projects with ≥\$100,000 in improvements to a high-use site. <sup>(1)</sup>						
Full	All projects that result in ≥2,000 sf of new plus replaced impervious surface or ≥7,000 sf of land disturbing activity but are not subject to Simplified Drainage Review, Directed Drainage Review, OR Large Project Drainage Review.						
Large Project	UPDs, OR projects that result in ≥50 acres of new impervious within a sub-basin or multiple sub-basins that are hydraulically connected, OR project sites ≥50 acres within a critical aquifer recharge area.						
	DRAINAGE REVIEW TYPE						
	Simplified	Directed	Targeted			Full	Large Project
			Categ 1	Categ 2	Categ 3		
SIMPLIFIED DRAINAGE REQUIREMENTS	SEE NOTE 4						
CORE REQUIREMENT #1 Discharge at Natural Location	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✱ <sup>(2)</sup>	✓		✓	✓
CORE REQUIREMENT #2 Offsite Analysis	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✱ <sup>(2)</sup>	✓ <sup>(3)</sup>		✓ <sup>(3)</sup>	✓ <sup>(3)</sup>
CORE REQUIREMENT #3 Flow Control	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✱ <sup>(2)</sup>			✓ <sup>(3)</sup>	✓ <sup>(3)</sup>
CORE REQUIREMENT #4 Conveyance System	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✱ <sup>(2)</sup>	✓		✓	✓
CORE REQUIREMENT #5 Erosion & Sediment Control	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✓	✓	✓	✓	✓
CORE REQUIREMENT #6 Maintenance & Operations	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✱ <sup>(2)</sup>	✓	✓	✓	✓
CORE REQUIREMENT #7 Financial Guarantees & Liability	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✱ <sup>(2)</sup>	✓ <sup>(3)</sup>	✓ <sup>(3)</sup>	✓ <sup>(3)</sup>	✓ <sup>(3)</sup>
CORE REQUIREMENT #8 Water Quality	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✱ <sup>(2)</sup>			✓ <sup>(3)</sup>	✓ <sup>(3)</sup>
CORE REQUIREMENT #9 Flow Control BMPs	✓ <sup>(4)</sup>	✓				✓	✓
SPECIAL REQUIREMENT #1 Other Adopted Requirements	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✓ <sup>(3)</sup>			✓ <sup>(3)</sup>	✓ <sup>(3)</sup>
SPECIAL REQUIREMENT #2 Flood Hazard Area Delineation	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✓ <sup>(3)</sup>			✓ <sup>(3)</sup>	✓ <sup>(3)</sup>
SPECIAL REQUIREMENT #3 Flood Protection Facilities	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✓ <sup>(3)</sup>			✓ <sup>(3)</sup>	✓ <sup>(3)</sup>
SPECIAL REQUIREMENT #4 Source Control	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>	✓ <sup>(3)</sup>	✓ <sup>(3)</sup>	✓ <sup>(3)</sup>	✓ <sup>(3)</sup>	✓ <sup>(3)</sup>
SPECIAL REQUIREMENT #5 Oil Control	✓ <sup>(4)</sup>	✓ <sup>(2,3)</sup>			✓ <sup>(3)</sup>	✓ <sup>(3)</sup>	✓ <sup>(3)</sup>

<sup>(1)</sup> Category 3 projects installing oil controls that construct or modify a 12-inch pipe/ditch are also Category 2 projects.

<sup>(2)</sup> May be applied by DPER based on project or site-specific conditions. Documentation of compliance required.

<sup>(3)</sup> These requirements have exemptions or thresholds that may preclude or limit their application to a specific project.

<sup>(4)</sup> A proposed project subject to Simplified Drainage Review that complies with the Simplified drainage requirements detailed in Appendix C is presumed to comply with all the core and special requirements in Sections 1.2 and 1.3 except those requirements that would apply to the project if it is subject to Targeted Drainage Review as specified in Section 1.1.2.2.

### 3. Section 3: Offsite Analysis

A level 1 downstream analysis can be provided upon request. No point discharge proposed.

### 4. Section 4: Flow Control, Low Impact Development (LID) and Water Quality Facility Analysis and Design

#### A. Existing Site Hydrology

See WWHM peak flow pre and post calculations in appendix

#### B. Developed Site Hydrology

See WWHM peak flow pre and post calculations in appendix

#### C. Performance Standard

See the stormwater site plan for any BMP sizing based on KC SWDM Sections C.2.1.5 and C.2.4.4.

#### D. Flow Control System

This project exceeds the 5,000 sf flow control threshold. BMP's are proposed to achieve the 0.15 peak flow exception. BMP mix includes full dispersion and full infiltration (added April 2023). Project impervious area is 9,831 sf. Of this, about 4,518 sf (house roof, patio, and new autocourt/driveway) will be fully dispersed using a trench with that meets the minimum 100 lf flowpath (see Section 3 in the appendix for "Impervious Area Spreadsheet"). The 1,600 sf barn roof BMP has been revised to full infiltration. Lastly the 3,713 sf replaced gravel driveway will be served by a grass filter strip / infiltration combination.

#### E. Water Quality System

Grass Filter Strip proposed to treat the new gravel-surfaced driveway. See updated planset for location & details.

### 5. Section 5: Conveyance System Analysis and Design

Hydraulic capacity calculations not warranted for this small project. Runoff rates don't warrant open channel or pipe capacity flow calculations.

### 6. Section 6: Special Reports and Studies

See soil logs (3/22/19) in the Septic Design by Cole Septic Design.

### 7. Section 7: Other Permits

Septic design was by Cole Septic Design. See appendix Section 7.

## **8. Section 8: CSWPPP Analysis and Design**

### **TESCP**

See planset for the erosion control plan.

### **CSWPPP**

See appendix Section 8 for CSWPPP paperwork for reference.

## **9. Section 9: Bond Quantities, Facility Summaries, and Declaration of Covenant**

See appendix section 9 for the King County Site Areas Bond Quantities Worksheet  
“Declaration of Covenant for Maintenance and Inspection of Flow Control BMPs” Dispersion  
Trench and NGRA to King County in appendix Section 9.

## **10. Section 10: Operations and Maintenance Manual**

See appendix Section 10 for dispersion trench maintenances and NGRA maintenance sourced  
from KCSWDM Appendix A.

## **Minimum Core Requirements Discussion:**

### **Core Requirement #1 – Discharge at the Natural Location**

Development of this site will not alter historic drainage pattern on this parcel. Dispersion (full and basic) is proposed which results in runoff directed within its historic path.

### **Core Requirement #2 – Offsite Analysis**

A level 1 downstream analysis can be provided upon request. Additional discharge from property is not expected given dispersion.

### **Core Requirement #3 – Flow Control**

Project exceeds the 5,000 sf threshold for flow control. See Appendix for 0.15 cfs Exception calculations. Full Infiltration has been incorporated to project to allow WWHM calculation to stay under the 0.15 cfs requirement for 100 year storm.

### **Core Requirement #4 – Conveyance System**

Capacity calculations are not warranted for this permit.



### **Core Requirement #5 – Erosion and Sediment Control**

See sheet C1.0 for erosion control plans.

### **Core Requirement #6 – Maintenance & Operations**

See appendix Section 10 Full Dispersion and Basic Dispersion maintenance.

### **Core Requirement #7 – Financial Guarantees and Liability**

Applicant can provide as required by permit.

### **Core Requirement #8 – Water Quality**

Project PGIS is hovering right around 5,000 sf due to expanded driveway surface. A grass filter strip has been proposed adjacent to re-routed gravel driveway. See plans for details.

### **Core Requirement #9 – Flow Control BMP's**

Large rural lot BMP requirements (C1.3.3)

The following BMP Order list discusses BMP's in the proper list order per KCSWM Appendix C, Section C.1.3.3 List Approach.

#### **Impervious Surface BMP list**

#### **1. Full Dispersion Feasibility (C.2.1)**

Proposed for House Roof and New Driveway:

- Directed to full dispersion trench: house roof (2,815 sf), exposed rear patio (423 sf), and new autocourt/driveway (1,280 sf), totaling 4,518 sf impervious area

- Per 2021 KC SWDM, with the available 100 LF (actually 123 LF) flowpath: "no more than 5,000 sf may be drained to a single 50-foot trench unless the native vegetated flowpath segment is longer than the 100-foot minimum length specified [above]."

- In short, proposed is a 50 LF full dispersion trench with >100 LF flowpath serving 4,518 sf impervious area.

#### **Pole Barn roof surface:**

Full dispersion is feasible for the barn but in April 2023 we shifted to full infiltration for barn to help achieve the flow control exception.

#### **Re-routed Driveway surface:**

Infeasible: the required 100 LF downhill flowpath length not available down-gradient to property line.

2. **Full Infiltration (C.2.2)**

House Roof, new paved driveway surfaces  
Not proposed given full dispersion is feasible.

Pole Barn roof surface 1600 sf:

Revised to full infiltration to achieve flow control exception (April 2023)

Re-routed gravel driveway surface: 3,713 sf:

Revised to full infiltration to achieve flow control exception (April 2023)

3. **Limited Infiltration (C.2.3)**

House Roof surface:  
Dispersion BMP already selected

New paved driveway surface:  
Dispersion BMP already selected

Pole Barn roof surface:  
Full Infiltration BMP already selected

Re-routed gravel driveway surface from property line:  
Full Infiltration BMP already selected

4. **Basic Dispersion (C.2.4)**

House Roof surface:  
BMP already selected

New paved driveway surface:  
BMP already selected

Pole Barn roof surface:  
BMP already selected

Re-routed gravel driveway from property line  
BMP already selected.

5. **Bioretention (aka Rain Garden) (C.2.6)**

House Roof surface:  
BMP already selected

New paved driveway surface:  
BMP already selected

Pole Barn roof surface:  
BMP already selected

Re-routed gravel driveway surface:  
BMP already selected

6. **Permeable Paving (C.2.7)**

New paved driveway surface:

Driveway runoff near garage section is routed to full dispersion. Permeable driveway surface not proposed due to driveway grade > 10% plus project in groundwater protection zone per KCiMap.

Re-routed gravel driveway surface:  
BMP already selected

**Pervious Surface BMP list**

1. Full Dispersion

Proposed for a portion of pervious rear yard and swale. A beehive frame & grate catch basin can intercept any runoff in swale during heavy storm events and get conveyed to the Dispersion trench as shown on plans.

April 2023 added statement:

The soils that underlie this property are *Vashon Recessional Outwash* identified in the Washington Geologic Portal Mapping. Supporting this soil type is fact all septic logs were either loamy fine or medium sand. They appear to get more gravelly with depth, so one can assume infiltration rates would be exceptional. Given these soils, one can assume there will not be runoff of any measure from pervious areas and proposing formal BMP's serving pervious areas is not warranted. The sandy outwash soil itself is the best BMP one could ask for in this case.

2. Infiltration, rain gardens,

Full infiltration proposed parallel to driveway serving re-routed gravel driveway and grass filter strip

3. Compost amended soil

Required: See plans and reference to key note 50 for details to amend disturbed soils after construction.



**Special Requirement #1: Other Adopted Area-Specific Requirements**

N/A - to the best of our knowledge, this project does not have any specific area restrictions

**Special Requirement #2: Flood Hazard Area Delineation**

N/A - This project is not in any proximity to a floodplain and/or flood hazard area

**Special Requirement #3: Flood Protection Facilities**

N/A – This project is not in any proximity to a floodplain and/or flood hazard area

**Special Requirement #4: Source Control**

N/A – not required. Project does not meet the source control criteria

**Special Requirement #5: Oil Control**

N/A – This residential project does not meet the high-use site threshold for oil control to our knowledge.



# Residential Drainage Review Checklist

Parcel Number 042107-9187	Building Permit Number DWEL21-0051
New and Replaced Impervious Surface: (from Site Areas Worksheet, square feet)	9,831
Total Limits of Disturbance: (from Site Areas Worksheet, square feet)	30,000
Does the project modify or construct a drainage pipe/ditch that is 12-inch or larger, or receives runoff from a 12-inch or larger drainage pipe/ditch?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Does the project contain or is adjacent to a Flood Hazard Area?	<input type="radio"/> Yes <input checked="" type="radio"/> No

See [Residential Drainage Review Requirements](#) to determine your drainage review type.

<input type="radio"/> <b>NO DRAINAGE REVIEW</b>	<input type="radio"/> <b>SIMPLIFIED DRAINAGE REVIEW</b>
Required Submittal Items: <input type="checkbox"/> Site Plan <input type="checkbox"/> Site Areas Worksheet	Required Submittal Items: <input type="checkbox"/> Site Plan and TESC Plan <input type="checkbox"/> Site Areas Worksheet <input type="checkbox"/> Drainage Assessment/Letter w/ Soil Logs <input type="checkbox"/> Post Construction Soil Worksheet
<input checked="" type="radio"/> <b>DIRECTED DRAINAGE REVIEW</b>	<input type="radio"/> <b>TARGETED DRAINAGE REVIEW</b>
Required Submittal Items: <input checked="" type="checkbox"/> Site Plans and TESC Plans <input checked="" type="checkbox"/> Site Areas Worksheet <input checked="" type="checkbox"/> Technical Information Report (TIR) <input checked="" type="checkbox"/> Post Construction Soil Worksheet	Required Submittal Items will vary depending upon the type of Targeted Drainage Review(s) that are required, but may include the following: <input type="checkbox"/> Site Plan <input type="checkbox"/> Site Areas Worksheet <input type="checkbox"/> Drainage Assessment or TIR <input type="checkbox"/> Floodplain/Floodway Study <input type="checkbox"/> Geotechnical Engineer Evaluation <input type="checkbox"/> Post Construction Soil Worksheet

## Appendix Section 1

### Project Overview

- TIR Worksheet
- Site location exhibit

# TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

## Part 1 PROJECT OWNER AND PROJECT ENGINEER

Project Owner Geoffrey and Julie Sweet  
 Phone \_\_\_\_\_  
 Address 27805 217th Avenue SE  
Maple Valley, WA 98038  
 Project Engineer Duffy Ellis, PE  
 Company Civil Engineering Solutions  
 Phone 206.930.0342

## Part 2 PROJECT LOCATION AND DESCRIPTION

Project Name Sweet Residence  
 DPER Permit # N/A  
 Location Township 21N  
 Range 7E  
 Section 4  
 Site Address 29120 310th Avenue SE  
Ravensdale, WA 98051

## Part 3 TYPE OF PERMIT APPLICATION

- ☐ Landuse (e.g., Subdivision / Short Subd. / UPD)  
☒ Building (e.g., M/F / Commercial / SFR)  
☐ Clearing and Grading  
☐ Right-of-Way Use  
☐ Other \_\_\_\_\_

## Part 4 OTHER REVIEWS AND PERMITS

- ☐ DFW HPA ☐ Shoreline Management  
☐ COE 404 ☐ Structural Rockery/Vault/\_\_\_\_\_  
☐ DOE Dam Safety ☐ ESA Section 7  
☐ FEMA Floodplain ☐ COE Wetlands  
☐ Other \_\_\_\_\_

## Part 5 PLAN AND REPORT INFORMATION

### Technical Information Report

Type of Drainage Review (check one):  
☐ Full  
☐ Targeted  
☐ Simplified  
☐ Large Project  
☒ Directed  
 Date (include revision dates): June 2022, April 2023  
 Date of Final: May 2023

### Site Improvement Plan (Engr. Plans)

Plan Type (check one):  
☒ Full  
☐ Modified  
☐ Simplified  
 Date (include revision dates): June 2022, April 2023  
 Date of Final: May 2023

## Part 6 SWDM ADJUSTMENT APPROVALS

Type (circle one): Standard / Experimental / Blanket

Description: (include conditions in TIR Section 2)

N/A

Approved Adjustment No. N/A Date of Approval: N/A



## TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

## Part 11 DRAINAGE DESIGN LIMITATIONS

## REFERENCE

## LIMITATION / SITE CONSTRAINT

- ☐ Core 2 – Offsite Analysis will perform if necessary
- ☐ Sensitive/Critical Areas see site plan
- ☐ SEPA N/A
- ☐ LID Infeasibility
- ☐ Other
- ☐

☐ Additional Sheets Attached

## Part 12 TIR SUMMARY SHEET (provide one TIR Summary Sheet per Threshold Discharge Area)

## Threshold Discharge Area:

(name or description)

SINGLE THRESHOLD AREA FOR SITE

## Core Requirements (all 8 apply):

Discharge at Natural Location Number of Natural Discharge Locations: western property line along 310th Street SE

Offsite Analysis Level: 1 / 2 / 3 dated: N/A

Flow Control (include facility summary sheet) Level: 1 / 2 / 3 or Exemption Number N/A  
Flow Control BMPs Full dispersion 4,518 sf; infiltration 5,313 sf

Conveyance System Spill containment located at: N/A

Erosion and Sediment Control / Construction Stormwater Pollution Prevention CSWPP/CESCL/ESC Site Supervisor: TBD  
Contact Phone: TBD  
After Hours Phone: TBD

Maintenance and Operation Responsibility (circle one): Private / Public  
If Private, Maintenance Log Required: Yes No

Financial Guarantees and Liability Provided: Yes No

Water Quality (include facility summary sheet) Type (circle one): Basic / Sens. Lake / Enhanced Basic / Bog  
or Exemption No. \_\_\_\_\_  
Landscape Management Plan: Yes No

## Special Requirements (as applicable):

N/A Area Specific Drainage Requirements Type: CDA / SDO / MDP / BP / LMP / Shared Fac. None  
Name: N/A

N/A Floodplain/Floodway Delineation Type (circle one): Major / Minor / Exemption / None  
100-year Base Flood Elevation (or range): N/A  
Datum:

N/A Flood Protection Facilities Describe: N/A

## TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

### Part 12 TIR SUMMARY SHEET (provide one TIR Summary Sheet per Threshold Discharge Area)

N/A

Source Control Describe land use: N/A  
(commercial / industrial land use) Describe any structural controls: N/A

N/A

Oil Control High-use Site: Yes / **No**  
N/A Treatment BMP: \_\_\_\_\_  
Maintenance Agreement: Yes / **No**  
with whom? \_\_\_\_\_

#### Other Drainage Structures

Describe:

### Part 13 EROSION AND SEDIMENT CONTROL REQUIREMENTS

#### MINIMUM ESC REQUIREMENTS DURING CONSTRUCTION

- ☒ Clearing Limits
- ☒ Cover Measures
- ☒ Perimeter Protection
- ☐ Traffic Area Stabilization
- ☒ Sediment Retention
- ☐ Surface Water Collection
- ☐ Dewatering Control
- ☐ Dust Control
- ☐ Flow Control
- ☒ Protection of Flow Control BMP Facilities (existing and proposed)
- ☒ Maintain BMPs / Manage Project

#### MINIMUM ESC REQUIREMENTS AFTER CONSTRUCTION

- ☒ Stabilize exposed surfaces
- ☒ Remove and restore Temporary ESC Facilities
- ☐ Clean and remove all silt and debris, ensure operation of Permanent Facilities, restore operation of Flow Control BMP Facilities as necessary
- ☐ Flag limits of SAO and open space preservation areas
- ☐ Other \_\_\_\_\_

### Part 14 STORMWATER FACILITY DESCRIPTIONS (Note: Include Facility Summary and Sketch)

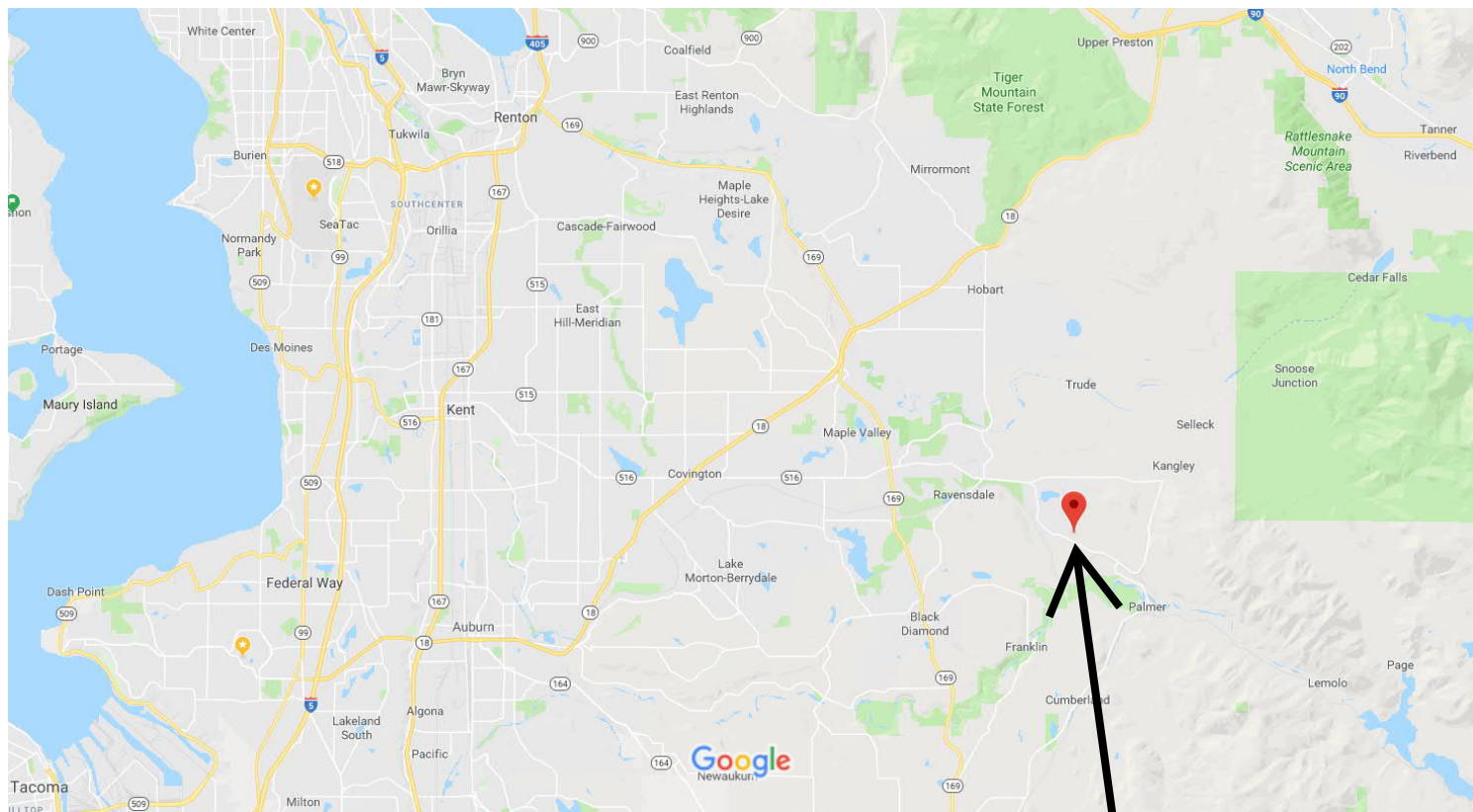
Flow Control	Type/Description	Water Quality	Type/Description
<input type="checkbox"/> Detention	<u>n/a</u>	<input type="checkbox"/> Vegetated Flowpath	<u>N/A</u>
<input checked="" type="checkbox"/> Infiltration	<u>drywell and trench; full infiltration</u>	<input type="checkbox"/> Wetpool	<u>N/A</u>
<input type="checkbox"/> Regional Facility	<u>n/a</u>	<input checked="" type="checkbox"/> Filtration	<u>10' filter strip</u>
<input type="checkbox"/> Shared Facility	<u>n/a</u>	<input type="checkbox"/> Oil Control	<u>N/A</u>
<input checked="" type="checkbox"/> Flow Control BMPs	<u>full dispersion trench proposed</u>	<input type="checkbox"/> Spill Control	<u>N/A</u>
<input type="checkbox"/> Other	_____	<input type="checkbox"/> Flow Control BMPs	<u>N/A</u>
		<input type="checkbox"/> Other	<u>N/A</u>

## TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 15 EASEMENTS/TRACTS	Part 16 STRUCTURAL ANALYSIS
<input type="checkbox"/> Drainage Easement <input type="checkbox"/> Covenant <input type="checkbox"/> Native Growth Protection Covenant <input type="checkbox"/> Tract <input type="checkbox"/> Other _____	<input type="checkbox"/> Cast in Place Vault <input type="checkbox"/> Retaining Wall <input type="checkbox"/> Rockery > 4' High <input type="checkbox"/> Structural on Steep Slope <input type="checkbox"/> Other _____
Part 17 SIGNATURE OF PROFESSIONAL ENGINEER	
<p>I, or a civil engineer under my supervision, have visited the site. Actual site conditions as observed were incorporated into this worksheet and the attached Technical Information Report. To the best of my knowledge the information provided here is accurate.</p> <div style="text-align: center; font-size: 2em; font-family: cursive;">             Jeffrey Ellis, May 2023           </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="border-top: 1px solid black; width: 40%;"></div> <div style="border-top: 1px solid black; width: 20%; text-align: center; font-size: 0.8em;">Signed/Date</div> <div style="border-top: 1px solid black; width: 40%;"></div> </div>	



Google Maps 310th Ave SE



Sweet Residence

## Appendix Section 2

### Conditions and Requirements

- Declaration of Covenant for Clearing Limit (NGRA)

RECORDING REQUESTED BY AND  
WHEN RECORDED MAIL TO:

Geoff and Julie Sweet  
27805 217th Avenue SE  
Maple Valley, WA 98038

---

## DECLARATION OF COVENANT FOR CLEARING LIMIT

Grantor: Geoffrey Sweet

Grantee: King County

Legal Description: PARCEL D, KING COUNTY BOUNDARY LINE ADJUSTMENT, RECORDED  
NOVEMBER 25 1996, UNDER RECORDING NUMBER 9611259005, BEING THE SOUTH HALF OF  
GOVERNMENT LOT 6, SECTION 4, TOWNSHIP 21 NORTH, RANGE 7 EAST, W.M., IN KING COUNTY,  
WASHINGTON;

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

Additional Legal(s) on: --

Assessor's Tax Parcel ID#: 042107-9187

IN CONSIDERATION of the approved King County building permit  
for application No. DWEL21-0051 relating to the real property ("Property") described  
above, the Grantor(s), the owner(s) in fee of that Property, hereby declares (declare) that the Property is  
established as having a native growth retention area for the purpose of dispersing and treating stormwater  
flows and is subject to restrictions applying to vegetation removal in all designated areas shown in  
Exhibit A attached hereto, and hereby covenants (covenant) and agrees (agree) as follows:

1. Any alterations to critical areas, their buffers, and native growth retention areas shall be  
pursuant to applicable King County Code.

2. The property within the native growth protection area (shown in Attachment A) shall be maintained in a forested condition, with the exception of open water and existing non-forested native wetland plant communities. The following activities are allowed and must be done in a manner that maintains forested hydrologic conditions and soil stability:

a. Removal of noxious weeds and non-native vegetation using hand equipment, provided that those areas are replanted with appropriate native vegetation.

b. Removal of dangerous and diseased trees.

c. Passive recreation and related activities including trails, nature viewing, fishing, camping areas, and other similar activities that do not require permanent structures, provided that cleared areas and areas of compacted soil associated with these areas and facilities do not exceed eight percent of the native growth retention area.

d. The native growth retention area may contain utilities and utility easements including flow control BMPs, but not including septic systems.

e. Limited trimming and pruning of vegetation for the creation and maintenance of views per applicable King County Code.

f. Timber harvest in accordance with a King County-approved forest management plan and appropriate permits.

3. King County shall have a nonexclusive perpetual access easement on the Property in order to ingress and egress over the Property for the sole purposes of inspecting and monitoring the Property's native growth retention area.

4. This easement/restriction is binding upon the Grantor(s), his/her (their) heirs, successors and assigns unless or until a new drainage or site plan is reviewed and approved by the Department of Development and Environmental Services or its successor.

IN WITNESS WHEREOF, this Declaration of Covenant is executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
GRANTOR, owner of the Property

\_\_\_\_\_  
GRANTOR, owner of the Property

STATE OF WASHINGTON     )  
COUNTY OF KING         )ss.

On this day personally appeared before me:

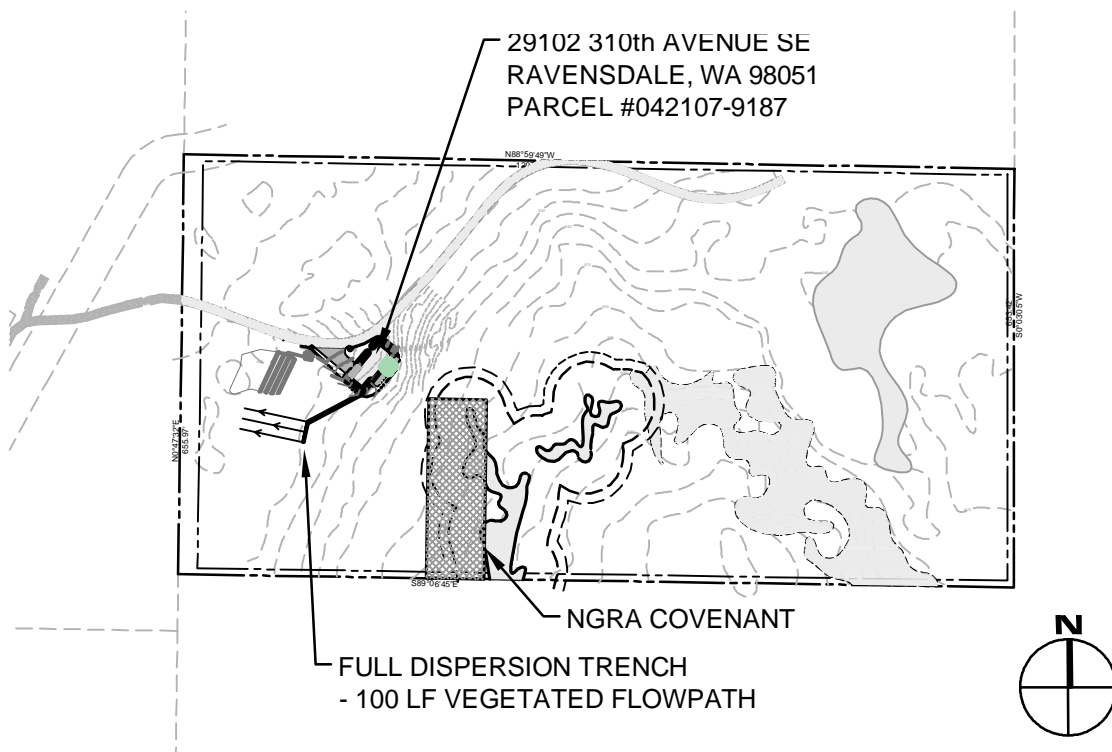
\_\_\_\_\_, to me known to be the individual(s) described in and who executed the within and foregoing instrument and acknowledged that they signed the same as their free and voluntary act and deed, for the uses and purposes therein stated.

Given under my hand and official seal this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
\_\_\_\_\_  
Printed name  
Notary Public in and for the State of Washington,  
residing at

\_\_\_\_\_  
My appointment expires \_\_\_\_\_

Exhibit A - Declaration of Covenant  
NGRA (full dispersion)



### Appendix Section 3 Offsite Analysis

- Not warranted given no point discharge proposed
  - Can provide upon request

## Appendix Section 4

### Flow Control, Low Impact Development (LID) Water Quality Facility Analysis and Design

- Impervious Area Spreadsheet
  - Flow Control Map
- Peak Flow Calculations for CR#3 exemption (WWHM)
  - PGIS Exhibit



Impervious Area Spreadsheet		
Sweet Residence - 29120 310th Avenue SE, Ravensdale, WA 98051		
Gross Site area	852,109	sf
	19.562	acres
Existing Impervious Area		
Ex gravel driveway, on-site to remain	5,088	sf
to remain	2,331	
to be demo-ed	2,758	sf
total existing =	5,088	sf
Proposed Impervious Area		
Roof (Main House)	2,815	sf
Exposed rear patio	423	sf
Driveway (new, for house)	1,280	sf
Driveway (re-routed)	3,713	sf
Pole Barn (40' x 40')	1,600	sf
NEW/REPLACED IMPERVIOUS =	9,831	sf
PGIS =	4,993	sf

**FLOW CONTROL "SITE AREA"**

**POLE BARN**

**DRAINFIELDS MODEL AS PASTURE**

**PARCEL NO. 042107-0187**

**PROJECT "DISTURBED" AREA DELINEATION**  
(WHICH CALC BASED ON THIS AREA)

**FULL DISPERSION TRENCH**  
100 LF FLOWPATH  
REMOVE IMPERVIOUS FROM PEAK FLOW CALCULATION

**1"=20'**

**20 10 0**

**North Arrow**

**655.97'**

**650'**

**635'**

**625'**

**620'**

**615'**

**610'**

**605'**

**600'**

**595'**

**590'**

**585'**

**580'**

**575'**

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**455'**

**450'**

**445'**

**440'**

**435'**

**430'**

**425'**

**420'**

**415'**

**410'**

**405'**

**400'**

**395'**

**390'**

**385'**

**380'**

**375'**

**370'**

**365'**

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**255'**

**250'**

**245'**

**240'**

**235'**

**230'**

**225'**

**220'**

**215'**

**210'**

**205'**

**200'**

**195'**

**190'**

**185'**

**180'**

**175'**

**170'**

**165'**

**160'**

**155'**

**150'**

**145'**

**140'**

**135'**

**130'**

**125'**

**120'**

**115'**

**110'**

**105'**

**100'**

**95'**

**90'**

**85'**

**80'**

**75'**

**70'**

**65'**

**60'**

**55'**

**50'**

**45'**

**40'**

**35'**

**30'**

**25'**

**20'**

**15'**

**10'**

**5'**

**0'**

**King County**

**Department of Permitting and Environmental Review**

**Residential Site Plan Template**

**Reg. REC Sta 11.088**

**Max. Impervious Surface Allowed**

**Min. Bldg. Height Allowed**

**Reg. REC Sta 12.129**

**Min. Bldg. Setback From Street**

**Min. Garage Setback From Street**

**Min. Bldg. Setback From Interior**

**Permit Center Validation:**

**o Drilling**

**o Site Review Not Applicable**

**Validation Signature:**

**Logix Initials:**

**Engineering / Drainage Approval**

**Signature:**

**Date:**

**Critical Areas Approval**

**Signature:**

**Date:**

**Clearing / Grading Approval**

**Signature:**

**Date:**

**Fire Approval**

**Signature:**

**Date:**

**Permit Number: 042107-0187**

**Parcel Number: 042107-0187**

**Applicant Name: GEOFFREY AND JULIE SWEET**

**Site Address: 29120 310th Ave SE**

**Engineering Scale: 1"=20'**

**Sheet: 1 of 1**

**Department of Permitting and Environmental Review**

**Residential Site Plan Template**

Ref. KDC 15A.10.09

Min. Impervious Surface Area: \_\_\_\_\_

Min. Bldg. Height Allowed: \_\_\_\_\_

Ref. KDC 15A.10.19

Min. Bldg. Setback From Street: \_\_\_\_\_

Min. Garage Setback From Street: \_\_\_\_\_

Min. Bldg. Setback From Interior: \_\_\_\_\_

**Permit Cover Validations:**

☐ Zoning \_\_\_\_\_

☐ Site Review Not Applicable \_\_\_\_\_

Validation Signature: \_\_\_\_\_

Log in Initials: \_\_\_\_\_ Date: \_\_\_\_\_

**Engineering / Drainage Approval**

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Critical Areas Approval**

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Clearing / Grading Approval**

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Fire Approval**

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Permit Number: **DWEL2-1-0051** Page: \_\_\_\_\_

## DRAINFIELDS MODEL AS PASTURE

PARCEL NO.  
007-9187

**PROJECT  
"DISTURBED" AREA  
DELINEATION**  
(WWHM CALC BASED ON THIS AREA)

- FULL DISPERSION TRENCH
- 100 LF FLOWPATH
- REMOVE IMPERVIOUS FROM PEAK FLOW CALCULATION

1°=20'

N

20 10

Permit Number: DWEL21-0051 Parcel Number: 042107-9187 Applicant Name: GEOFFREY AND JULIE SWEET Site Address: 29120 310th Ave SE Engineering Scale: 1" = 20' Sheet 4 of 4

# POST-DEVELOPMENT WWHM INPUT

Sweet Project, Ravensdale, WA						
WWHM Inputs -Post Development						
Date:			04/25/23			
Gross Site Area			852,107	19.562		
Project (Site) Area			29,148	0.669	See exhibit for Reference	
			Unadjusted			
description			Impervious Area	Adjustment	BMP Adjusted Impervious area	
Onsite Pasture						
-			0			
Drainfield Area			5,114	50.00%	2,557	
		Input Pasture =	5,114	0.117	0.059	WWHM INPUT
				2,557	0.059	Area pushed to Grass
Onsite impervious area						
new Roof			2,815		0	fully dispersed. Model as forest per KCSWM Table 1.2.9.A
new Driveway			1,285		0	fully dispersed, model as forest
Rear Patio			423		0	fully dispersed, model as forest
Polebarn roof			1,600		0	1600 infiltrated, remove from grass
New Driveway (crushed rock)			3,713		0	3713 fully infiltrated, remove from grass
					0	
		Input Impervious	9,836		0.000	WWHM IMPERVIOUS INPUT
full infiltration area deduction=			5,313	0.122		
Grass Surface Calc						
gross disturbed area=	29,148					
Minus total impervious=	-9,836					
Minus actual pasture area	-5,114					infiltration will fully infiltrate the 10' filter strip
Minus filter strip infiltrated grass	-2,459					
Minus pushed grass area from pasture	-2,557					
Remaing Grass=	9,182	Input Grass=	9,182	0.211		WWHM GRASS INPUT
Forest Surface						
Roof Dispersed	2,815					
Driveway Dispersed	1,285					
Patio Dispersed	423					
Pervious Dispersed	5,000					
Barn roof						fully infiltrated (march 2023)
Driveway 2						fully infiltrated (march 2023)
Subtotal=	9,523	Input Forest	9,523	0.219		WWHM FOREST INPUT
Area Totals			33,655			
Convert to acres			0.773	0.488		Total Area for Post Development
Backcheck numbers						
Add back full infiltration area				0.122		
				0.610		

# **WWHM2012**

## **PROJECT REPORT**

APRIL 2023  
PEAK FLOW CALCULATION  
PRE & POST CONDITION  
GOAL: 0.15 CFS EXCEPTION  
Run by Duffy Ellis, PE

### RESULTS (APRIL 2023)

0.560 POST CFS  
0.472 PRE CFS  
0.09 CFS GAIN < 0.15 CFS

## *General Model Information*

Project Name: 1835 peak flow outwash Feb 20  
Site Name: Sweet  
Site Address:  
City: Ravensdale  
Report Date: 4/25/2023  
Gage: Landsburg  
Data Start: 1948/10/01  
Data End: 2009/09/30  
Timestep: 15 Minute  
Precip Scale: 1.286  
Version Date: 2021/08/18  
Version: 4.2.18

## *POC Thresholds*

---

Low Flow Threshold for POC1:	50 Percent of the 50 Year
High Flow Threshold for POC1:	100 Year

---

## Landuse Basin Data

### Predeveloped Land Use

#### Basin 1

Bypass: No

GroundWater: No

Pervious Land Use  
A B, Forest, Mod      acre  
0.669

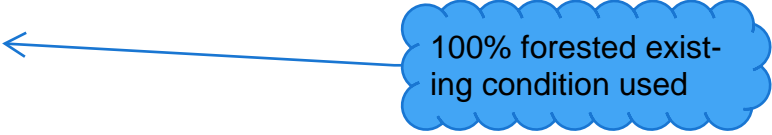
Pervious Total      0.669

Impervious Land Use      acre

Impervious Total      0

Basin Total      0.669

100% forested exist-  
ing condition used



Element Flows To:  
Surface

Interflow

Groundwater

## Mitigated Land Use

### Basin 1

Bypass: No

GroundWater: No

Pervious Land Use	acre
A B, Forest, Mod	0.219
A B, Pasture, Mod	0.059
A B, Lawn, Mod	0.211

Pervious Total 0.489

Impervious Land Use acre

Impervious Total 0

Basin Total 0.489

post development in-puts  
see spreadsheet for  
detailed breakdown

Element Flows To:

Surface

Interflow

Groundwater

# *Routing Elements*

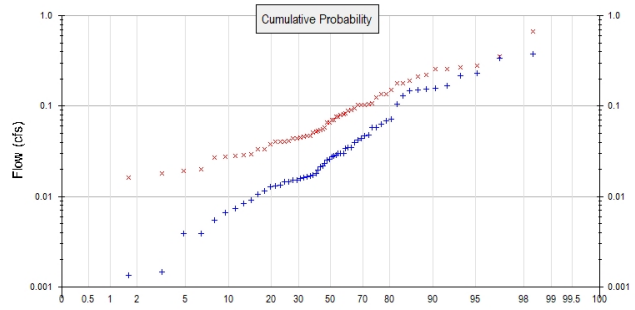
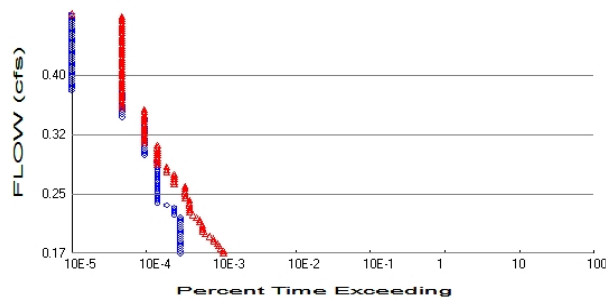
## *Predeveloped Routing*



## *Mitigated Routing*

# Analysis Results

## POC 1



+ Predeveloped x Mitigated

### Predeveloped Landuse Totals for POC #1

Total Pervious Area: 0.669  
Total Impervious Area: 0

### Mitigated Landuse Totals for POC #1

Total Pervious Area: 0.489  
Total Impervious Area: 0

Flow Frequency Method: Log Pearson Type III 17B

### Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.027252
5 year	0.07849
10 year	0.134831
25 year	0.237954
50 year	0.341782
100 year	0.471836

FORESTED PEAK

### Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.068228
5 year	0.14102
10 year	0.209455
25 year	0.323339
50 year	0.430962
100 year	0.56063

DEVELOPED PEAK  
CHECK FOR 0.15  
COMPLIANCE  
0.560  
0.472  
0.09 CFS GAIN <  
0.15 CFS

### Annual Peaks

#### Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.048	0.095
1950	0.151	0.190
1951	0.044	0.107
1952	0.016	0.038
1953	0.016	0.053
1954	0.030	0.058
1955	0.015	0.044
1956	0.016	0.054
1957	0.030	0.080
1958	0.007	0.027

1959	0.014	0.033
1960	0.013	0.047
1961	0.029	0.045
1962	0.001	0.016
1963	0.064	0.106
1964	0.156	0.256
1965	0.012	0.067
1966	0.007	0.018
1967	0.035	0.070
1968	0.021	0.040
1969	0.023	0.089
1970	0.030	0.047
1971	0.028	0.052
1972	0.035	0.066
1973	0.013	0.033
1974	0.017	0.041
1975	0.025	0.077
1976	0.018	0.054
1977	0.001	0.010
1978	0.015	0.040
1979	0.004	0.019
1980	0.014	0.030
1981	0.058	0.125
1982	0.008	0.028
1983	0.047	0.070
1984	0.148	0.214
1985	0.005	0.029
1986	0.026	0.044
1987	0.169	0.271
1988	0.022	0.045
1989	0.019	0.055
1990	0.071	0.135
1991	0.216	0.281
1992	0.013	0.082
1993	0.017	0.041
1994	0.004	0.020
1995	0.009	0.076
1996	0.131	0.181
1997	0.377	0.672
1998	0.011	0.103
1999	0.234	0.258
2000	0.034	0.103
2001	0.001	0.027
2002	0.040	0.102
2003	0.105	0.152
2004	0.069	0.180
2005	0.028	0.084
2006	0.042	0.091
2007	0.343	0.355
2008	0.159	0.222
2009	0.059	0.135

### Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.3769	0.6716
2	0.3426	0.3553
3	0.2339	0.2810

4	0.2162	0.2710
5	0.1695	0.2577
6	0.1588	0.2560
7	0.1558	0.2217
8	0.1514	0.2141
9	0.1480	0.1901
10	0.1309	0.1806
11	0.1048	0.1800
12	0.0712	0.1521
13	0.0687	0.1353
14	0.0636	0.1351
15	0.0586	0.1253
16	0.0582	0.1067
17	0.0479	0.1056
18	0.0470	0.1035
19	0.0444	0.1031
20	0.0421	0.1022
21	0.0399	0.0946
22	0.0350	0.0908
23	0.0348	0.0890
24	0.0338	0.0836
25	0.0301	0.0819
26	0.0301	0.0805
27	0.0299	0.0766
28	0.0291	0.0760
29	0.0281	0.0704
30	0.0275	0.0704
31	0.0258	0.0666
32	0.0251	0.0660
33	0.0231	0.0579
34	0.0216	0.0551
35	0.0215	0.0540
36	0.0194	0.0536
37	0.0179	0.0525
38	0.0171	0.0515
39	0.0170	0.0469
40	0.0165	0.0466
41	0.0160	0.0455
42	0.0157	0.0452
43	0.0153	0.0439
44	0.0152	0.0437
45	0.0145	0.0410
46	0.0144	0.0407
47	0.0134	0.0404
48	0.0132	0.0401
49	0.0129	0.0377
50	0.0116	0.0335
51	0.0105	0.0334
52	0.0092	0.0295
53	0.0084	0.0286
54	0.0073	0.0282
55	0.0066	0.0275
56	0.0055	0.0268
57	0.0039	0.0202
58	0.0039	0.0192
59	0.0015	0.0180
60	0.0013	0.0161
61	0.0011	0.0104



Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1709	6	23	383	Fail
0.1739	6	23	383	Fail
0.1770	6	21	350	Fail
0.1800	6	20	333	Fail
0.1831	6	19	316	Fail
0.1861	6	17	283	Fail
0.1891	6	17	283	Fail
0.1922	6	15	250	Fail
0.1952	6	13	216	Fail
0.1982	6	12	200	Fail
0.2013	6	12	200	Fail
0.2043	6	12	200	Fail
0.2074	6	12	200	Fail
0.2104	6	11	183	Fail
0.2134	6	11	183	Fail
0.2165	6	10	166	Fail
0.2195	5	9	180	Fail
0.2226	5	8	160	Fail
0.2256	5	8	160	Fail
0.2286	5	8	160	Fail
0.2317	4	8	200	Fail
0.2347	3	8	266	Fail
0.2378	3	8	266	Fail
0.2408	3	7	233	Fail
0.2438	3	7	233	Fail
0.2469	3	7	233	Fail
0.2499	3	7	233	Fail
0.2530	3	7	233	Fail
0.2560	3	7	233	Fail
0.2590	3	5	166	Fail
0.2621	3	5	166	Fail
0.2651	3	5	166	Fail
0.2682	3	5	166	Fail
0.2712	3	5	166	Fail
0.2742	3	4	133	Fail
0.2773	3	4	133	Fail
0.2803	3	4	133	Fail
0.2834	3	3	100	Pass
0.2864	3	3	100	Pass
0.2894	3	3	100	Pass
0.2925	3	3	100	Pass
0.2955	2	3	150	Fail
0.2986	2	3	150	Fail
0.3016	2	3	150	Fail
0.3046	2	3	150	Fail
0.3077	2	3	150	Fail
0.3107	2	2	100	Pass
0.3138	2	2	100	Pass
0.3168	2	2	100	Pass
0.3198	2	2	100	Pass
0.3229	2	2	100	Pass
0.3259	2	2	100	Pass
0.3290	2	2	100	Pass
0.3320	2	2	100	Pass

0.3350	2	2	100	Pass
0.3381	2	2	100	Pass
0.3411	2	2	100	Pass
0.3442	1	2	200	Fail
0.3472	1	2	200	Fail
0.3502	1	2	200	Fail
0.3533	1	2	200	Fail
0.3563	1	1	100	Pass
0.3594	1	1	100	Pass
0.3624	1	1	100	Pass
0.3654	1	1	100	Pass
0.3685	1	1	100	Pass
0.3715	1	1	100	Pass
0.3746	1	1	100	Pass
0.3776	0	1	n/a	Fail
0.3806	0	1	n/a	Fail
0.3837	0	1	n/a	Fail
0.3867	0	1	n/a	Fail
0.3898	0	1	n/a	Fail
0.3928	0	1	n/a	Fail
0.3958	0	1	n/a	Fail
0.3989	0	1	n/a	Fail
0.4019	0	1	n/a	Fail
0.4050	0	1	n/a	Fail
0.4080	0	1	n/a	Fail
0.4110	0	1	n/a	Fail
0.4141	0	1	n/a	Fail
0.4171	0	1	n/a	Fail
0.4202	0	1	n/a	Fail
0.4232	0	1	n/a	Fail
0.4262	0	1	n/a	Fail
0.4293	0	1	n/a	Fail
0.4323	0	1	n/a	Fail
0.4354	0	1	n/a	Fail
0.4384	0	1	n/a	Fail
0.4414	0	1	n/a	Fail
0.4445	0	1	n/a	Fail
0.4475	0	1	n/a	Fail
0.4506	0	1	n/a	Fail
0.4536	0	1	n/a	Fail
0.4566	0	1	n/a	Fail
0.4597	0	1	n/a	Fail
0.4627	0	1	n/a	Fail
0.4658	0	1	n/a	Fail
0.4688	0	1	n/a	Fail
0.4718	0	1	n/a	Fail

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

## Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.



## LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

## *Model Default Modifications*

Total of 0 changes have been made.

### *PERLND Changes*

No PERLND changes have been made.

### *IMPLND Changes*

No IMPLND changes have been made.

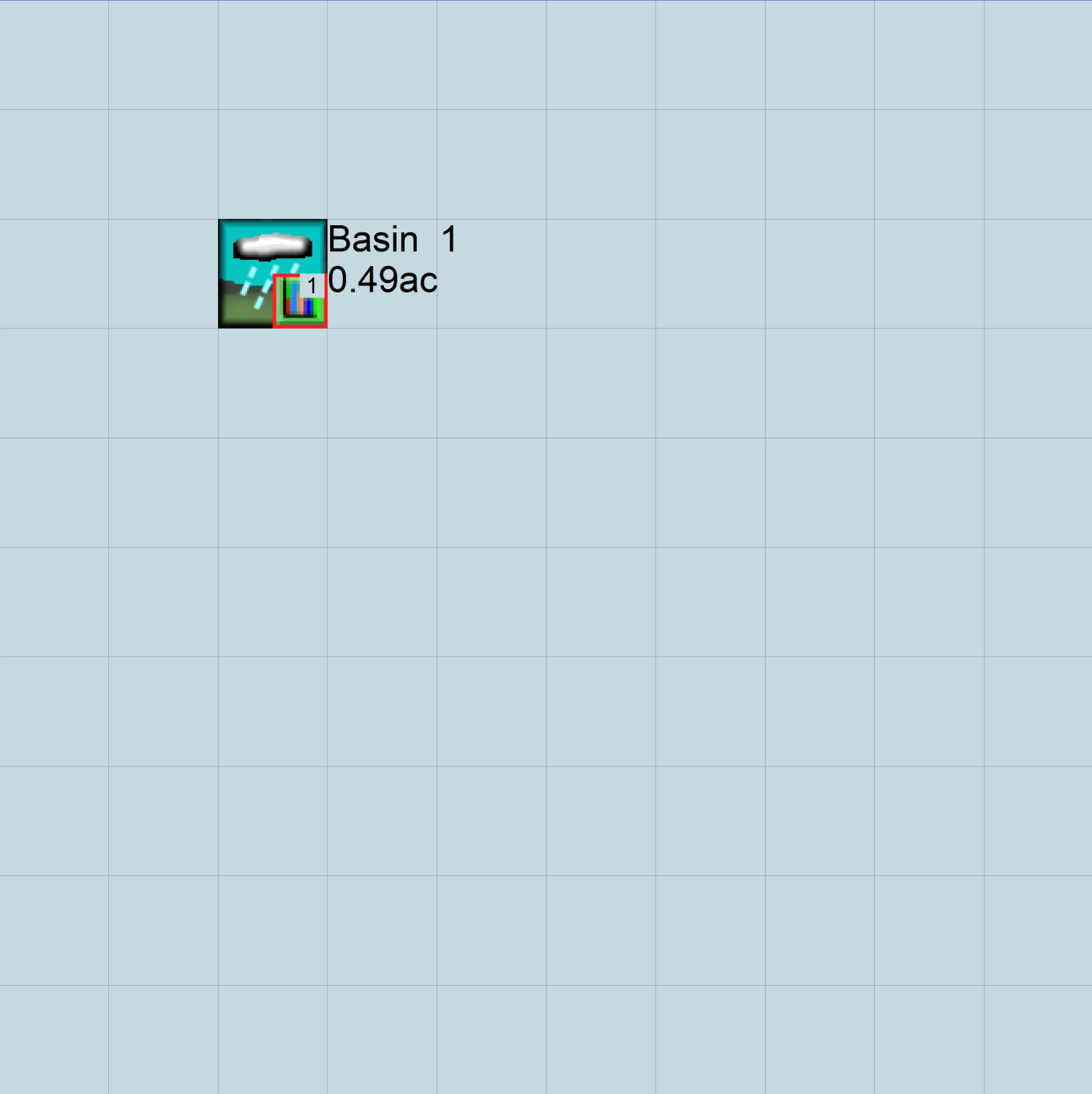
## Appendix

### Predeveloped Schematic



Basin 1  
0.67ac

Mitigated Schematic



## Predeveloped UCI File

RUN

GLOBAL

```
WWMH4 model simulation
START      1948 10 01      END      2009 09 30
RUN INTERP OUTPUT LEVEL    3      0
RESUME     0 RUN          1
UNIT SYSTEM      1
END GLOBAL
```

FILES

```
<File>  <Un#>  <-----File Name----->***
<-ID->                                     ***
WDM      26     1835 peak flow outwash Feb 20.wdm
MESSU    25     Pre1835 peak flow outwash Feb 20.MES
          27     Pre1835 peak flow outwash Feb 20.L61
          28     Pre1835 peak flow outwash Feb 20.L62
          30     POC1835 peak flow outwash Feb 201.dat
```

END FILES

OPN SEQUENCE

INGRP INDELT 00:15

```
PERLND      2
COPY        501
DISPLY      1
```

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

```
# - #<-----Title----->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
1      Basin 1      MAX      1      2      30      9
```

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

```
# - # NPT NMN ***
1      1      1
501    1      1
```

END TIMESERIES

END COPY

GENER

OPCODE

```
#      # OPCD ***
```

END OPCODE

PARM

```
#      #      K ***
```

END PARM

END GENER

PERLND

GEN-INFO

```
<PLS ><-----Name----->NBLKS      Unit-systems      Printer ***
# - #      User      t-series      Engl Metr ***
          in out      ***
```

```
2      A/B, Forest, Mod      1      1      1      1      27      0
```

END GEN-INFO

\*\*\* Section PWATER\*\*\*

ACTIVITY

```
<PLS > ***** Active Sections *****
# - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC ***
2      0      0      1      0      0      0      0      0      0      0      0      0
```

END ACTIVITY

PRINT-INFO

```
<PLS > ***** Print-flags ***** PIVL PYR
# - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC *****
2      0      0      4      0      0      0      0      0      0      0      0      0      1      9
```

END PRINT-INFO

```

PWAT-PARM1
<PLS > PWATER variable monthly parameter value flags ***
# - # CSNO RTOP UZFG VCS VUZ VNN VIFW VIRC VLE INFC HWT ***
2 0 0 0 0 0 0 0 0 0 0 0
END PWAT-PARM1

PWAT-PARM2
<PLS > PWATER input info: Part 2 ***
# - # ***FOREST LZSN INFILT LSUR SLSUR KVARV AGWRC
2 0 5 2 400 0.1 0.3 0.996
END PWAT-PARM2

PWAT-PARM3
<PLS > PWATER input info: Part 3 ***
# - # ***PETMAX PETMIN INFEXP INFILD DEEPFR BASETP AGWETP
2 0 0 2 2 0 0 0
END PWAT-PARM3

PWAT-PARM4
<PLS > PWATER input info: Part 4 ***
# - # CEPSC UZSN NSUR INTFW IRC LZETP ***
2 0.2 0.5 0.35 0 0.7 0.7
END PWAT-PARM4

PWAT-STATE1
<PLS > *** Initial conditions at start of simulation
ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
# - # *** CEPS SURS UZS IFWS LZS AGWS GWVS
2 0 0 0 0 3 1 0
END PWAT-STATE1

END PERLND

IMPLND
GEN-INFO
<PLS ><-----Name-----> Unit-systems Printer ***
# - # User t-series Engl Metr ***
in out ***
END GEN-INFO
*** Section IWATER***

ACTIVITY
<PLS > ***** Active Sections *****
# - # ATMP SNOW IWAT SLD IWG IQAL ***
END ACTIVITY

PRINT-INFO
<ILS > ***** Print-flags ***** PIVL PYR
# - # ATMP SNOW IWAT SLD IWG IQAL *****
END PRINT-INFO

IWAT-PARM1
<PLS > IWATER variable monthly parameter value flags ***
# - # CSNO RTOP VRS VNN RTLI ***
END IWAT-PARM1

IWAT-PARM2
<PLS > IWATER input info: Part 2 ***
# - # *** LSUR SLSUR NSUR RETSC
END IWAT-PARM2

IWAT-PARM3
<PLS > IWATER input info: Part 3 ***
# - # ***PETMAX PETMIN
END IWAT-PARM3

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # *** RETS SURS
END IWAT-STATE1

```

END IMPLND

SCHEMATIC

<-Source->		<--Area-->		<-Target->	MBLK	***
<Name>	#	<-factor->		<Name>	#	Tbl#
Basin	1***					
PERLND	2	0.669		COPY	501	12
PERLND	2	0.669		COPY	501	13

\*\*\*\*\*Routing\*\*\*\*\*

END SCHEMATIC

NETWORK

<-Volume->	<-Grp>	<-Member->	<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	#<-factor->	strg	<Name>	#	#
COPY	501	OUTPUT	MEAN	1 1	48.4	DISPLY	1	INPUT
								TIMSER 1

<-Volume->	<-Grp>	<-Member->	<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	#<-factor->	strg	<Name>	#	#

END NETWORK

RCHRES

GEN-INFO

RCHRES	Name	Nexits	Unit Systems	Printer	***
# - #	<----->	<---->	User T-series	Engl Metr LKFG	***
			in out		***

END GEN-INFO

\*\*\* Section RCHRES\*\*\*

ACTIVITY

<PLS > \*\*\*\*\* Active Sections \*\*\*\*\*

#	-	#	HYFG	ADFG	CNFG	HTFG	SDFG	GQFG	OXFG	NUFG	PKFG	PHFG	***
---	---	---	------	------	------	------	------	------	------	------	------	------	-----

END ACTIVITY

PRINT-INFO

<PLS > \*\*\*\*\* Print-flags \*\*\*\*\* PIVL PYR

#	-	#	HYDR	ADCA	CONS	HEAT	SED	GQL	OXRX	NUTR	PLNK	PHCB	PIVL	PYR	*****
---	---	---	------	------	------	------	-----	-----	------	------	------	------	------	-----	-------

END PRINT-INFO

HYDR-PARM1

RCHRES	Flags for each HYDR Section	***	ODGTFG for each	FUNCT for each	***
# - #	VC A1 A2 A3	ODFVFG for each	***	ODGTFG for each	FUNCT for each
	FG FG FG FG	possible exit	***	possible exit	possible exit
	* * * *	* * * *		* * * *	***

END HYDR-PARM1

HYDR-PARM2

#	-	#	FTABNO	LEN	DELTH	STCOR	KS	DB50	***
<----->	<----->	<----->	<----->	<----->	<----->	<----->	<----->	<----->	***

END HYDR-PARM2

HYDR-INIT

RCHRES	Initial conditions for each HYDR section	***
# - #	*** VOL Initial value of COLIND Initial value of OUTDGT	
	*** ac-ft for each possible exit for each possible exit	
<----->	<----->	<---><---><---><---><---> *** <---><---><---><---><--->

END HYDR-INIT

END RCHRES

SPEC-ACTIONS

END SPEC-ACTIONS

FTABLES

END FTABLES

EXT SOURCES

<-Volume->	<Member>	SsysSgap	<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	tem strg	<-factor->	strg	<Name>	#
WDM	2	PREC	ENGL	1.286		PERLND	1 999	EXTNL
WDM	2	PREC	ENGL	1.286		IMPLND	1 999	EXTNL

WDM	1	EVAP	ENGL	0.76	PERLND	1	999	EXTNL	PETINP
WDM	1	EVAP	ENGL	0.76	IMPLND	1	999	EXTNL	PETINP

END EXT SOURCES

EXT TARGETS

<-Volume->	<-Grp>	<-Member->	<--Mult-->	Tran	<-Volume->	<Member>	Tsys	Tgap	Amd	***
<Name>	#	<Name>	#	#<-factor->	strg	<Name>	#	<Name>	tem	strg strg***
COPY	501	OUTPUT	MEAN	1 1	48.4	WDM	501	FLOW	ENGL	REPL

END EXT TARGETS

MASS-LINK

<Volume>	<-Grp>	<-Member->	<--Mult-->	<Target>	<-Grp>	<-Member->	***
<Name>		<Name>	#	#<-factor->	<Name>		<Name> # #***
MASS-LINK		12					
PERLND	PWATER	SURO		0.083333	COPY	INPUT	MEAN
END MASS-LINK		12					

MASS-LINK		13					
PERLND	PWATER	IFWO		0.083333	COPY	INPUT	MEAN
END MASS-LINK		13					

END MASS-LINK

END RUN



## Mitigated UCI File

RUN

GLOBAL

WWM4 model simulation  
START 1948 10 01 END 2009 09 30  
RUN INTERP OUTPUT LEVEL 3 0  
RESUME 0 RUN 1 UNIT SYSTEM 1  
END GLOBAL

FILES

<File>	<Un#>	<-----File Name----->	***
<-ID->			***
WDM	26	1835 peak flow outwash Feb 20.wdm	
MESSU	25	Mit1835 peak flow outwash Feb 20.MES	
	27	Mit1835 peak flow outwash Feb 20.L61	
	28	Mit1835 peak flow outwash Feb 20.L62	
	30	POC1835 peak flow outwash Feb 201.dat	

END FILES

OPN SEQUENCE

INGRP INDELT 00:15

PERLND 2  
PERLND 5  
PERLND 8  
COPY 501  
DISPLY 1

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

#	-	#	<-----Title----->	***	TRAN	PIVL	DIG1	FIL1	PYR	DIG2	FIL2	YRND
1			Basin 1		MAX				1	2	30	9

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

#	-	#	NPT	NMN	***
1			1	1	
501			1	1	

END TIMESERIES

END COPY

GENER

OPCODE

# # OPCODE \*\*\*

END OPCODE

PARM

# # K \*\*\*

END PARM

END GENER

PERLND

GEN-INFO

<PLS >	<-----Name----->	NBLKS	Unit-systems	Printer	***
#	-	#	User	t-series	Engl Metr
			in	out	***

2	A/B, Forest, Mod	1	1	1	1	27	0
5	A/B, Pasture, Mod	1	1	1	1	27	0
8	A/B, Lawn, Mod	1	1	1	1	27	0

END GEN-INFO

\*\*\* Section PWATER\*\*\*

ACTIVITY

<PLS >	***** Active Sections *****														
#	-	#	ATMP	SNOW	PWAT	SED	PST	PWG	PQAL	MSTL	PEST	NITR	PHOS	TRAC	***
2			0	0	1	0	0	0	0	0	0	0	0	0	
5			0	0	1	0	0	0	0	0	0	0	0	0	
8			0	0	1	0	0	0	0	0	0	0	0	0	

END ACTIVITY

```

PRINT-INFO
<PLS > ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW PWAT  SED  PST  PWG  PQAL MSTL PEST NITR PHOS TRAC  *****
2      0      0      4      0      0      0      0      0      0      0      0      0      0      1      9
5      0      0      4      0      0      0      0      0      0      0      0      0      0      1      9
8      0      0      4      0      0      0      0      0      0      0      0      0      0      1      9
END PRINT-INFO

```

```

PWAT-PARM1
<PLS >  PWATER variable monthly parameter value flags  ***
# - # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT  ***
2      0      0      0      0      0      0      0      0      0      0      0
5      0      0      0      0      0      0      0      0      0      0      0
8      0      0      0      0      0      0      0      0      0      0      0
END PWAT-PARM1

```

```

PWAT-PARM2
<PLS >  PWATER input info: Part 2          ***
# - # ***FOREST  LZSN  INFILT  LSUR  SLSUR  KVARY  AGWRC
2      0      5      2      400      0.1      0.3      0.996
5      0      5      1.5      400      0.1      0.3      0.996
8      0      5      0.8      400      0.1      0.3      0.996
END PWAT-PARM2

```

```

PWAT-PARM3
<PLS >  PWATER input info: Part 3          ***
# - # ***PETMAX  PETMIN  INFEXP  INFILD  DEEPFR  BASETP  AGWETP
2      0      0      2      2      0      0      0
5      0      0      2      2      0      0      0
8      0      0      2      2      0      0      0
END PWAT-PARM3

```

```

PWAT-PARM4
<PLS >  PWATER input info: Part 4          ***
# - # CEPSC  UZSN  NSUR  INTFW  IRC  LZETP  ***
2      0.2      0.5      0.35      0      0.7      0.7
5      0.15      0.5      0.3      0      0.7      0.4
8      0.1      0.5      0.25      0      0.7      0.25
END PWAT-PARM4

```

```

PWAT-STATE1
<PLS >  *** Initial conditions at start of simulation
ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
# - # *** CEPS  SURS  UZS  IFWS  LZS  AGWS  GWVS
2      0      0      0      0      3      1      0
5      0      0      0      0      3      1      0
8      0      0      0      0      3      1      0
END PWAT-STATE1

```

END PERLND

IMPLND

```

GEN-INFO
<PLS ><-----Name----->  Unit-systems  Printer ***
# - #                          User  t-series Engl Metr ***
                                in  out
END GEN-INFO
*** Section IWATER***

```

```

ACTIVITY
<PLS >  ***** Active Sections *****
# - # ATMP SNOW IWAT  SLD  IWG IQAL  ***
END ACTIVITY

```

```

PRINT-INFO
<ILS >  ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW IWAT  SLD  IWG IQAL  *****
END PRINT-INFO

```

```

IWAT-PARM1
<PLS >  IWATER variable monthly parameter value flags  ***

```

```

# - # CSNO RTOP VRS VNN RTLI ***
END IWAT-PARM1

IWAT-PARM2
<PLS > IWATER input info: Part 2 ***
# - # *** LSUR SLSUR NSUR RETSC
END IWAT-PARM2

IWAT-PARM3
<PLS > IWATER input info: Part 3 ***
# - # ***PETMAX PETMIN
END IWAT-PARM3

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # *** RETS SURS
END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source-> <--Area--> <-Target-> MBLK ***
<Name> # <-factor-> <Name> # Tbl# ***
Basin 1***
PERLND 2 0.219 COPY 501 12
PERLND 2 0.219 COPY 501 13
PERLND 5 0.059 COPY 501 12
PERLND 5 0.059 COPY 501 13
PERLND 8 0.211 COPY 501 12
PERLND 8 0.211 COPY 501 13

*****Routing*****
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
COPY 501 OUTPUT MEAN 1 1 48.4 DISPLY 1 INPUT TIMSER 1

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
END NETWORK

RCHRES
GEN-INFO
RCHRES Name Nexits Unit Systems Printer ***
# - #<-----><----> User T-series Engl Metr LKFG ***
in out ***

END GEN-INFO
*** Section RCHRES***

ACTIVITY
<PLS > ***** Active Sections *****
# - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
END ACTIVITY

PRINT-INFO
<PLS > ***** Print-flags ***** PIVL PYR
# - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR *****
END PRINT-INFO

HYDR-PARM1
RCHRES Flags for each HYDR Section ***
# - # VC A1 A2 A3 ODFVFG for each *** ODGTFG for each FUNCT for each
FG FG FG FG possible exit *** possible exit possible exit
* * * * * * * * * * * * * * * *
END HYDR-PARM1

```

```

HYDR-PARM2
# - # FTABNO LEN DELTH STCOR KS DB50 ***
<-----><-----><-----><-----><-----><-----><-----> ***
END HYDR-PARM2
HYDR-INIT
RCHRES Initial conditions for each HYDR section ***
# - # *** VOL Initial value of COLIND Initial value of OUTDGT
*** ac-ft for each possible exit for each possible exit
<-----><-----> <---><---><---><---><---> *** <---><---><---><---><--->
END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # tem strg<-factor->strg <Name> # # <Name> # # ***
WDM 2 PREC ENGL 1.286 PERLND 1 999 EXTNL PREC
WDM 2 PREC ENGL 1.286 IMPLND 1 999 EXTNL PREC
WDM 1 EVAP ENGL 0.76 PERLND 1 999 EXTNL PETINP
WDM 1 EVAP ENGL 0.76 IMPLND 1 999 EXTNL PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name> # <Name> # #<-factor->strg <Name> # <Name> tem strg strg***
COPY 1 OUTPUT MEAN 1 1 48.4 WDM 701 FLOW ENGL REPL
COPY 501 OUTPUT MEAN 1 1 48.4 WDM 801 FLOW ENGL REPL
END EXT TARGETS

MASS-LINK
<Volume> <-Grp> <-Member-><--Mult--> <Target> <-Grp> <-Member->***
<Name> <Name> # #<-factor-> <Name> <Name> # #***
MASS-LINK 12
PERLND PWATER SURO 0.083333 COPY INPUT MEAN
END MASS-LINK 12

MASS-LINK 13
PERLND PWATER IFWO 0.083333 COPY INPUT MEAN
END MASS-LINK 13

END MASS-LINK

END RUN

```





## *Disclaimer*

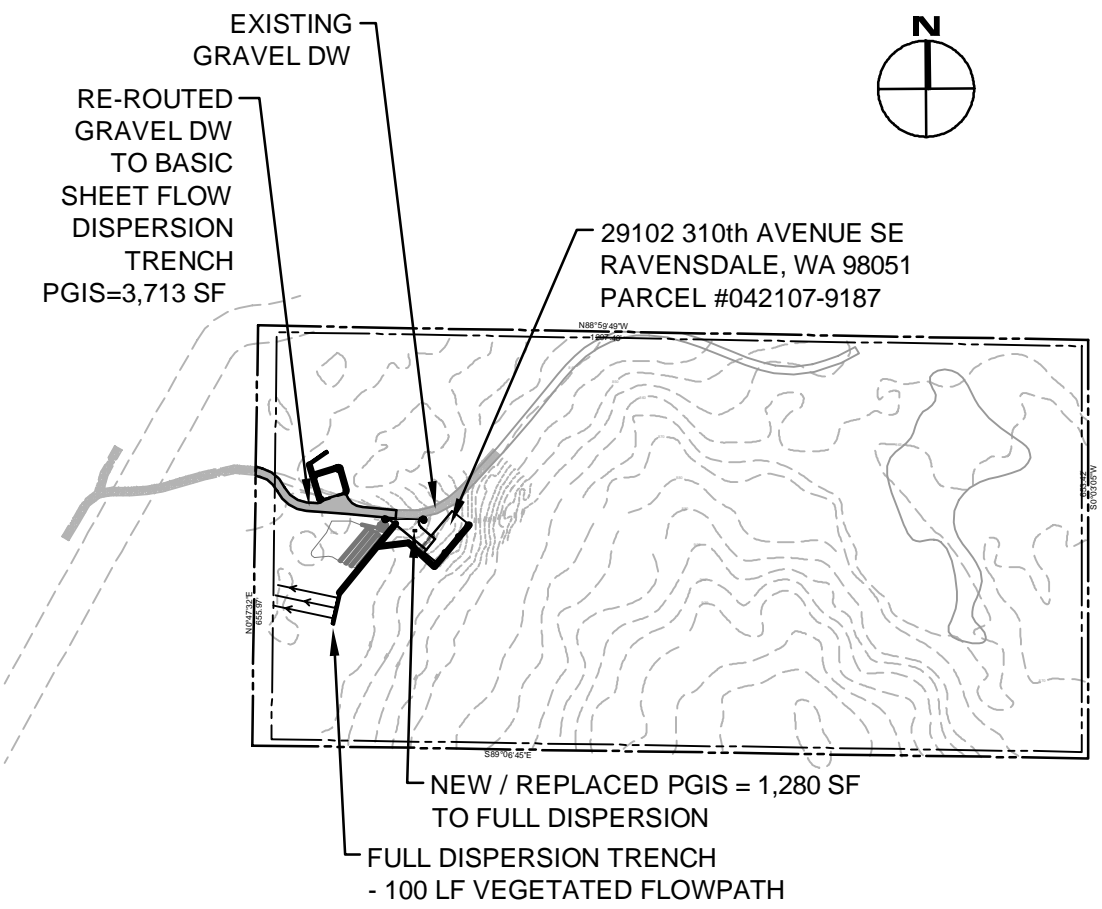
### *Legal Notice*

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PGIS Exhibit





## Appendix Section 5

### Conveyance System Analysis and Design

(Hydraulic Calculations are not warranted on this single family project)

## Appendix Section 6 Special Reports and Studies

- None applicable

## Appendix Section 7

### Other Permits

- Septic Design by Cole Septic Design (updated)

Public Health - Seattle and King County  
Site Design Application Form for Individual On-Site Sewage System (OSS)  
(Submit 5 copies of application with 4 copies of plans)

Record I.D. Number  
ON 0209947  
Department Use Only

Approximate  
Site Address:

29288 310th Ave SE

ATTACH A DETAILED ROUTE/ DIRECTION  
MAP FOR LOCATING THE PROPERTY.

Name and address of property owner See Applicant

Applicant Name Sweet Geoff Street Address 27805 217th Ave SE  
City-Zip Code Maple Valley 98038 Phone 425-205-0258  
Last First

Designer Barry Cole Street Address PO Box 1040  
City-Zip Code Enumclaw 98022 Phone 360-825-1965

THIS IS NOT A PERMIT

PROPERTY INFORMATION:

Legal Description Attached ☐

Parcel # (APN) 0421079187 Section: 04 Township: 21 Range: 07

Subdivision Name:  Lot:  Block:

Property Size 871200 Sq. ft. Acreage: 20 Rural Area ☒ Urban Area ☐

Distance from property line to nearest sewer: 330+

Water Supply ☒ (IP) I = Individual ☐ Group A Supply ☐ Group B Supply

Public Water Supply Name: Private Well ID#

Sensitive Area: ☒ (Y?N) If yes, specify ☐ (L,W,O) L = Landslide W = Wetlands ☐ = Other See CAD

SYSTEM INFORMATION:

New System ☒ Repair Design ☐ Correction of OSS Failure? ☐ Y?N Detailed Plans Attached (4 sets) ☒ Y?N

Type of Building - - S F SF = Single Family MF = Multiple Family COMM = Commercial INST = Institutional

Type of System Proposed: - - - P D G = Gravity GP = Gravity with pump M = Mound SF = Sand Filter  
PD = Pressure Distribution HT = Holding Tank CT = Composting Toilet E = Experimental ☐ = Other

Dates Soils Logged: 032219 Soil Logs Data Attached: (Min. 4/lot) ☒ Y?N

Depth to Watertable or Restrictive Layer: 62 inches Maximum Slope in Drainfield/Reserve Area 08 %

CALCULATIONS:

Number of bedrooms: 3 Total Gallons/Day (450 minimum): 450 Gal. Soil Texture Type (1A-5) 4

Application Rate: .6 Gal/sq ft/day Total Absorption Area: 0750 Sq. ft. Trench Width 36 inches

Total Drainfield Length: 250 Ft. Septic Tank Size: 1500 Gal. Garbage Grinder N Y?N

Pump Chamber Size (if needed) 1500 Gal. Trench Depth (min/max): 12 / 36 inches

I understand that failure to comply with the Code of King County Board of Health Title 13 may result in the disapproval of the sewage system being proposed in this application. Non-compliance may lead to revocation of my Designer's Certificate of Competency and/or appropriate legal action by the Health Department.

Designer's Signature: [Signature] K.C. ID# 5100107 Date: 4/1/19

FOR HEALTH DEPARTMENT USE ONLY:

NOTE: SYSTEM MUST BE INSTALLED BY A KING COUNTY CERTIFIED INSTALLER UNLESS OTHERWISE PROVIDED BY CODE

APPROVED (date): 3-11-2020 BY: [Signature]

Comments

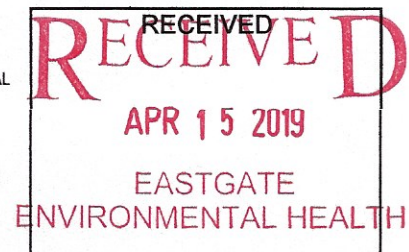
☒ Pre-construction meeting required between designer, installer, builder prior to permit issuance

APPROVAL OF THIS DESIGN APPLICATION IS BASED SOLELY ON INFORMATION PROVIDED IN THIS APPLICATION AND DOES NOT CONSTITUTE PERMISSION TO BEGIN CONSTRUCTION OF THE PROPOSED SEWAGE DISPOSAL SYSTEM OR ANY OTHER IMPROVEMENTS ON THE SITE. THIS APPROVAL SHALL NOT BE CONSIDERED AN ASSURANCE, EITHER EXPRESSED OR IMPLIED, THAT DEVELOPMENT PERMITS FOR THE SITE WILL BE ISSUED. THIS APPLICATION EXPIRES TWO YEARS FROM DATE OF APPROVAL.

DISAPPROVED (date):  BY:

See attached Site Deficiency Sheet.

Any person aggrieved by any decision or final order of the Health Officer may file a written application for appeal to the Health Officer within 60 calendar days of the date of the above decision. (Title 13, K.C.B.O.H. Chapter 13.12 - Sewage Review Committee). CS 13.15.97 Rev.7/21/00







**COLE SEPTIC DESIGN Inc.**  
P.O. Box 1040  
ENUMCLAW, WA 98022  
(360)825-1965 fax (360)825-8812

NOTES:

ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SEATTLE KING COUNTY HEALTH DEPT. TITLE 13, ON-SITE SEWAGE CODE.

IT SHALL BE THE SOLE RESPONSIBILITY OF THE CLIENT/HOMEOWNER TO BACKFILL OR COVER ALL THE SOIL TEST PITS ON THIS PROPERTY AFTER THE HEALTH DEPT. HAS REVIEWED THE SOILS.

EXTREME CARE SHALL BE TAKEN NOT TO DISTURB THE NATURAL SOILS IN THE DRAINFIELD AREA PRIOR TO OR AFTER THE INSTALLATION OF THE SYSTEM.

THE SEPTIC TANK SHALL BE 1500 GALLONS 1600 SDC  
THE DRAINFIELD LENGTH SHALL BE 250 FEET  
THE TRENCH BOTTOMS SHALL BE NO DEEPER THAN 36 INCHES  
THE TRENCH SPACING SHALL BE NO LESS THAN 9 FEET ON CENTER

ALL DOWNSPOUT AND FOOTING DRAINS SHALL BE DIRECTED AWAY FROM THE DRAINFIELD AREA AND MAINTAIN THE REQUIRED SETBACKS FROM THE SYSTEM.

ALL WATER LINES SHALL MAINTAIN A 10-FOOT SETBACK FROM THE DRAINFIELD AREA.

THERE SHALL BE NO CUTS DOWNSLOPE OF THE DRAINFIELD AREA UNLESS THE DESIGNER HAS ENSURED THAT THE PROPER SETBACKS CAN BE MAINTAINED FROM THE CUT TO THE DRAINFIELD AREA !!!!

A MINIMUM OF 12" OF SOIL COVER AND MAXIMUM OF 22 INCHES IS ALLOWED OVER THE TOP OF THE WASHED ROCK IN TRENCHES.

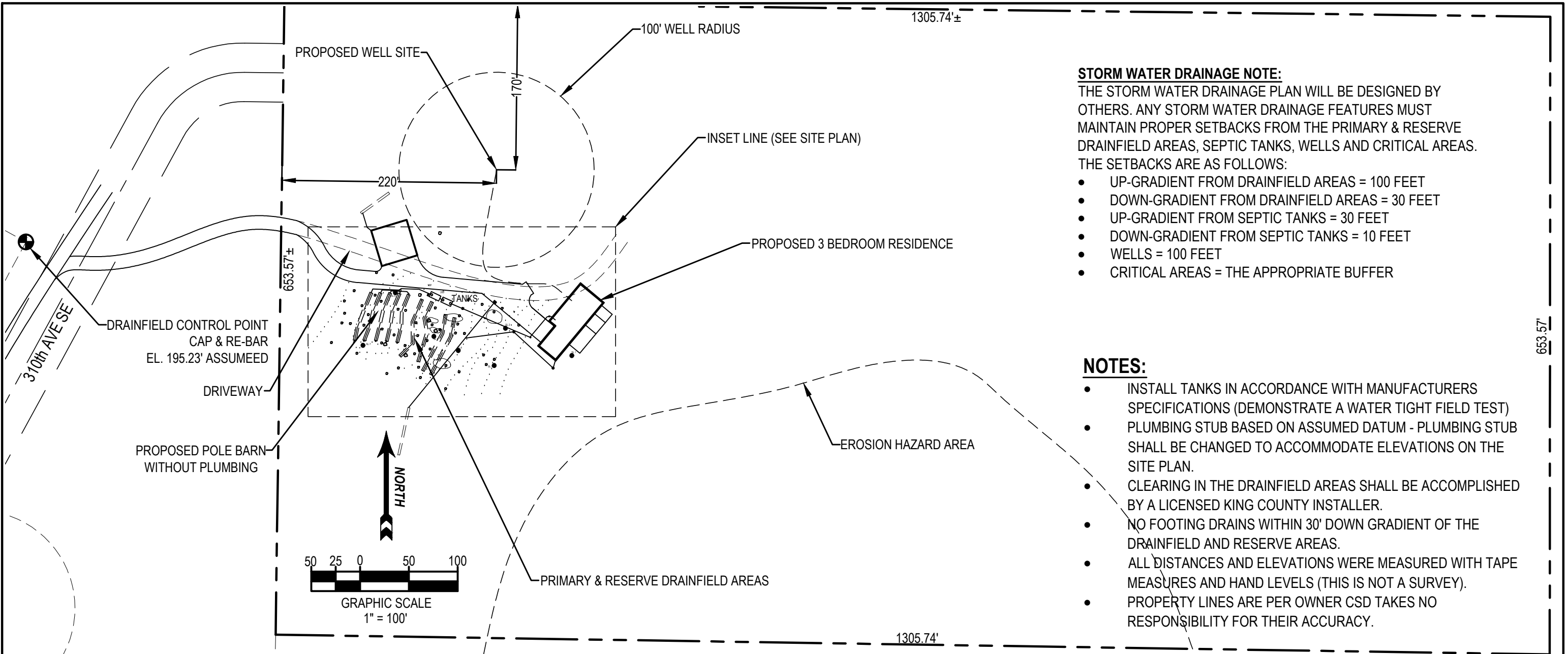
BACKFILLING OF ALL SANITARY DRAINFIELDS MUST BE COMPLETE BY A LICENSED INSTALLER WITHIN 30 DAYS FROM APPROVAL OF SEATTLE KING COUNTY HEALTH DEPARTMENT.

PUMP NOTES:

TANK SIZE 1500 GALLONS 1500 P  
PUMP CYCLE 112.5 GAL/DOSE 4 TIMED DOSES/DAY  
CONDITIONS: 18.8 FT FLOW 44.56 GPM  
MANUFACTURER: HYDRAMATIC MODEL NO. SP 50

THERE SHALL BE AN ALARM INSTALLED TO ALERT HOME OWNER OF PUMP FAILURE. ALL PROPERTY LINES ARE PER PROPERTY OWNER. THE COLE SEPTIC DESIGN, INC. TAKES NO RESPONSIBILITY FOR THEIR ACCURACY.






**STORM WATER DRAINAGE NOTE:**  
THE STORM WATER DRAINAGE PLAN WILL BE DESIGNED BY OTHERS. ANY STORM WATER DRAINAGE FEATURES MUST MAINTAIN PROPER SETBACKS FROM THE PRIMARY & RESERVE DRAINFIELD AREAS, SEPTIC TANKS, WELLS AND CRITICAL AREAS. THE SETBACKS ARE AS FOLLOWS:

- UP-GRADIENT FROM DRAINFIELD AREAS = 100 FEET
- DOWN-GRADIENT FROM DRAINFIELD AREAS = 30 FEET
- UP-GRADIENT FROM SEPTIC TANKS = 30 FEET
- DOWN-GRADIENT FROM SEPTIC TANKS = 10 FEET
- WELLS = 100 FEET
- CRITICAL AREAS = THE APPROPRIATE BUFFER

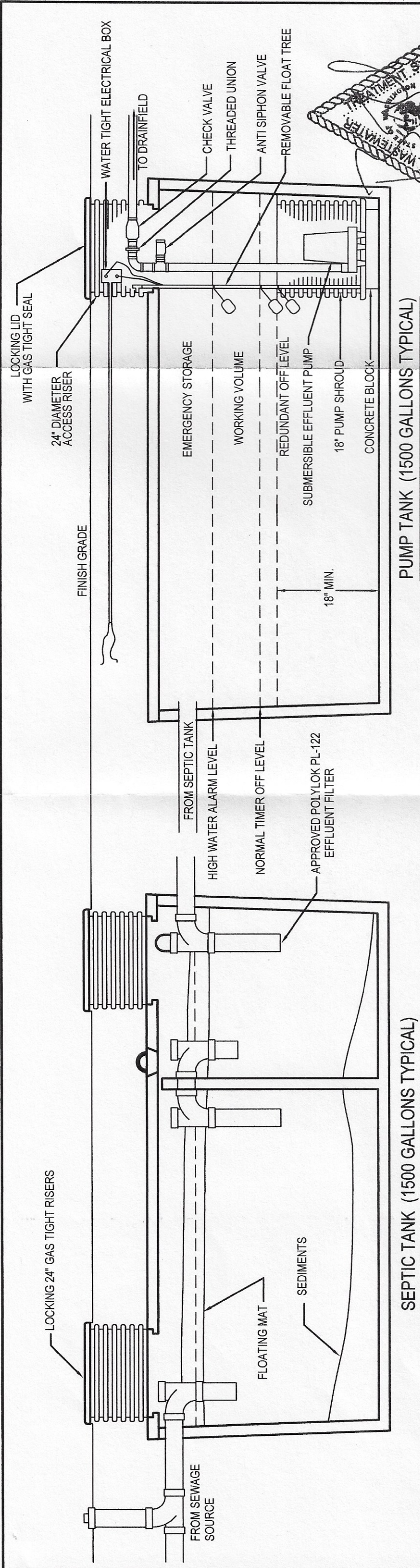
- NOTES:**
- INSTALL TANKS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS (DEMONSTRATE A WATER TIGHT FIELD TEST)
  - PLUMBING STUB BASED ON ASSUMED DATUM - PLUMBING STUB SHALL BE CHANGED TO ACCOMMODATE ELEVATIONS ON THE SITE PLAN.
  - CLEARING IN THE DRAINFIELD AREAS SHALL BE ACCOMPLISHED BY A LICENSED KING COUNTY INSTALLER.
  - NO FOOTING DRAINS WITHIN 30' DOWN GRADIENT OF THE DRAINFIELD AND RESERVE AREAS.
  - ALL DISTANCES AND ELEVATIONS WERE MEASURED WITH TAPE MEASURES AND HAND LEVELS (THIS IS NOT A SURVEY).
  - PROPERTY LINES ARE PER OWNER CSD TAKES NO RESPONSIBILITY FOR THEIR ACCURACY.

- SPECIFICATIONS:**
- SEPTIC TANK - 1500 GALLON DUAL COMPARTMENT EVERGREEN PRECAST 1600 SDC INLET EL. 200.50'.
  - PUMP TANK - 1500 GALLON SINGLE COMPARTMENT EVERGREEN PRECAST 1500 P INLET EL. 199.50' PUMP INTAKE EL. 194.50'.
  - TIMER - RHOMBUS IFS 11. SET FOR 43 - 150 GAL. DOSES PER DAY
  - PUMP - GOULDS WE07H TO DELIVER 50.15 GPM @ 20.8 TDH
  - TRANSPORT LINE - 2" CL. 200 PVC 85 LINEAL FEET (MAX).
  - DRAINFIELD - 250 LINEAL FEET 1.25" CL. 200 PVC LATERALS W/ 3/16" ORIFICES 36" ON CENTER. TRENCH SPACING 7' ON CENTER. TRENCH WIDTH = 36".
  - LATERAL FEEDERS - 1.25" CL. 200 PVC 77 LINEAL FEET.
  - TRENCH DEPTH - 12" MIN. 36" MAX.
  - RESERVE DRAINFIELD - 250 LINEAL FEET PRESSURE DISTRIBUTION.

**NOTE:** THE OWNER SHALL PROVIDE A COVENANT AGREEING TO OPERATE, MAINTAIN, AND REPORT THE PERFORMANCE OF THE ON-SITE SEWAGE SYSTEM IN ACCORDANCE WITH TITLE 13. 13.60. THE OWNER SHALL ALSO PROVIDE A SIGNED SERVICE CONTRACT FROM AN APPROVED KING COUNTY MAINTAINER.

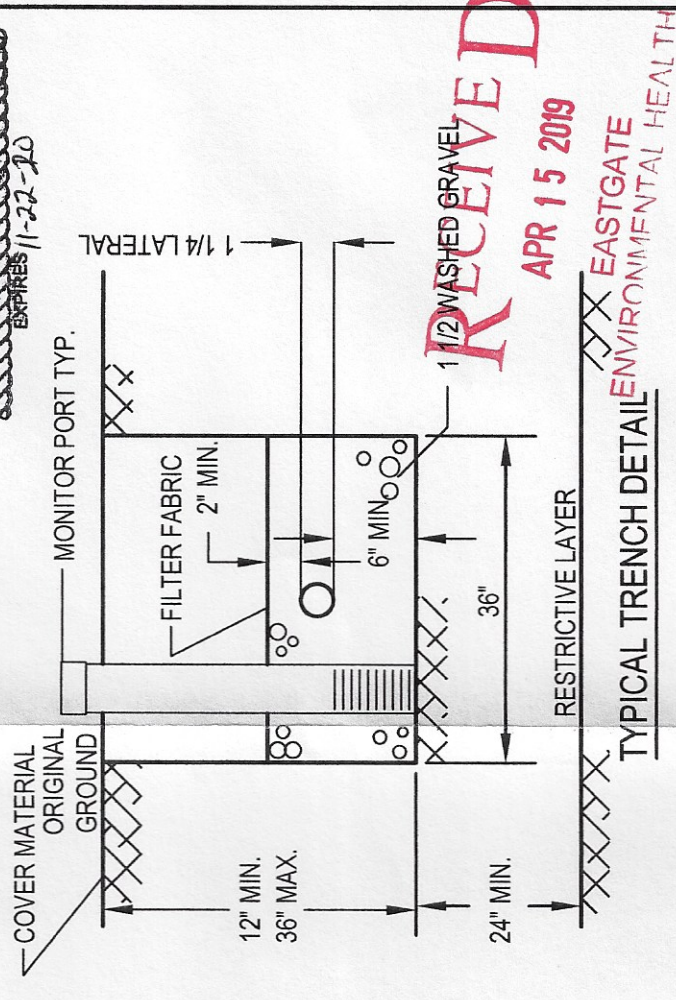
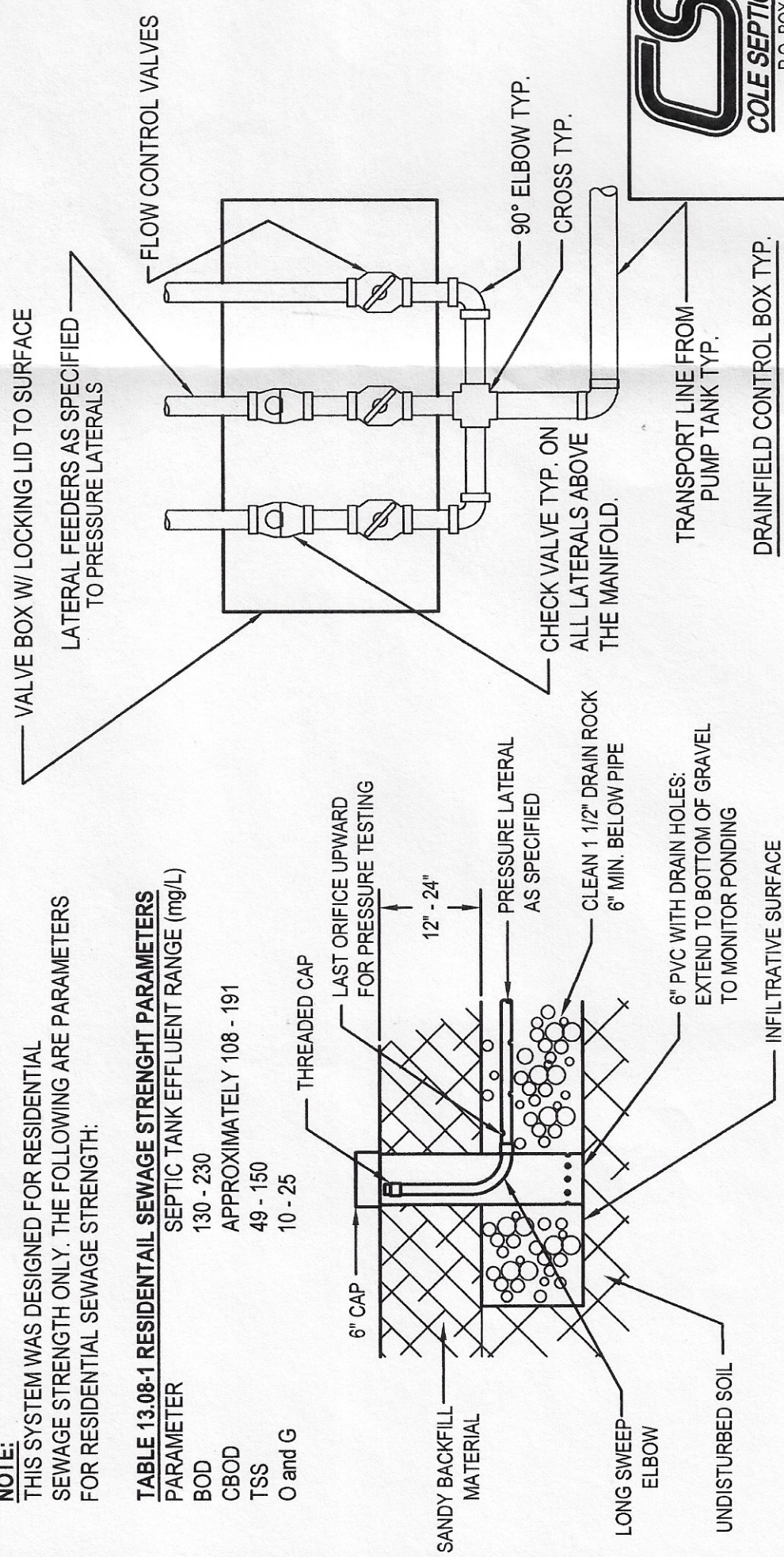
 P.O. BOX 1040 ENUMCLAW, WA. 98022 (360)825-1965 fax (360)825-8812	PROJECT:	SCALE: 1" = 100'
	OSS DESIGNED FOR: GEOFF SWEET 29288 310th AVE SE	DRAWN BY: 5100107
	PARCEL # 0421079187	DATE:
		DRAWING# 19-05-D





**NOTE:**  
THIS SYSTEM WAS DESIGNED FOR RESIDENTIAL SEWAGE STRENGTH ONLY. THE FOLLOWING ARE PARAMETERS FOR RESIDENTIAL SEWAGE STRENGTH:

TABLE 13.08-1 RESIDENTIAL SEWAGE STRENGTH PARAMETERS	
PARAMETER	SEPTIC TANK EFFLUENT RANGE (mg/L)
BOD	130 - 230
CBOD	APPROXIMATELY 108 - 191
TSS	49 - 150
O and G	10 - 25



**RECEIVED**  
APR 15 2019  
EASTGATE ENVIRONMENTAL HEALTH

**CSD**  
**COLE SEPTIC DESIGN**  
P.O. BOX 1040  
ENUMCLAW, WA. 98022  
(360)825-1965 fax (360)825-8812

PROJECT:	TYPICAL DETAILS GEOFF SWEET 29288 310th AVE SE
PARCEL #	0421079187
SCALE:	NONE
DRAWN BY:	5100107
DATE:	4/1/19
DRAWING#	19-05-D

MONITORING/CLEANOUT PORT TYP.



LOCKING 24" GAS TIGHT RISERS

FINISH GRADE

LOCKING LID  
WITH GAS TIGHT SEAL

24" DIAMETER  
ACCESS RISER

WATER TIGHT ELECTRICAL BOX

TO DRAINFIELD

EMERGENCY STORAGE

WORKING VOLUME

REDUNDANT OFF LEVEL

SEDIMENTS

APPROVED POLYLOK PL-122  
EFFLUENT FILTER

HIGH WATER ALARM LEVEL

NORMAL TIMER OFF LEVEL

FROM SEPTIC TANK

REMOVABLE FLOAT TREE

THREADED UNION

ANTI SIPHON VALVE

REDUNDANT OFF LEVEL

SUBMERSIBLE EFFLUENT PUMP

18" MIN.

18" PUMP SHROUD

CONCRETE BLOCK

SEPTIC TANK (1500 GALLONS TYPICAL)

PUMP TANK (1500 GALLONS TYPICAL)

RESIDENTIAL  
FOLLOWING ARE PARAMETERS  
LENGTH:

AGE STRENGTH PARAMETERS  
C TANK EFFLUENT RANGE (mg/L)

30

APPROXIMATELY 108 - 191

10

THREADED CAP

LAST ORIFICE UPWARD  
FOR PRESSURE TESTING

12" - 24"

PRESSURE LATERAL  
AS SPECIFIED

VALVE BOX W/ LOCKING LID TO SURFACE

LATERAL FEEDERS AS SPECIFIED  
TO PRESSURE LATERALS

FLOW CONTROL VALVES

COVER MATERIAL

ORIGINAL  
GROUND

MONITOR PORT TYP.

FILTER FABRIC

2" MIN.

6" MIN

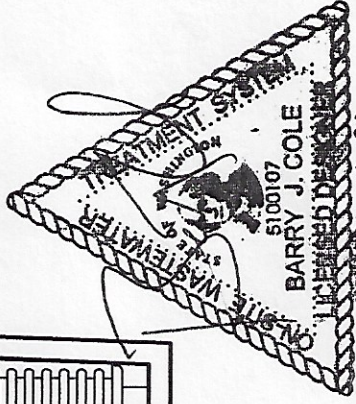
1 1/2" MIN.

1 1/4" LATERAL

36"

24" MIN.

RESTRICTIVE LAYER



RECEIVED  
APR 15 2019  
1 1/2" WASHED GRAVEL



## PRESSURE DISTRIBUTION DESIGN WORKSHEET

### DESIGN NETWORK:

DAILY DESIGN FLOW= (# BEDROOMS) X (FLOW/BEDROOM) = 450 GAL

APPLICATION RATE BASED ON SOIL TYPE = .6 GPD/FT  
REQUIRED ABSORPTION AREA = 750 SQ. FT  
(REQUIRED ABSORPTION AREA= DAILY DESIGN FLOW/APPLICATION RT.)

TRENCH/BED WIDTH = 3 FT

TOTAL TRENCH/BED LENGTH = 250 FT

### NETWORK CONFIGURATION:

LATERAL LENGTH = 62.5 FT 4 LATERALS

LATERAL SPACING = 9 FT ON CENTER

TRANSPORT PIPE LENGTH = 85 FT

TRANSPORT LINE DIAM. = 2 IN

MANIFOLD LENGTH = 4 FT TYP.

CHOOSE AN ORIFICE SPACING = 3 FT

CALCULATE THE NUMBER OF ORIFICES = 21 ORIFICES  
(LATERAL LENGTH DIVIDED BY ORIFICE SPACING) 84 TOTAL

### SELECT LATERAL DIAM. FROM APPENDIX 1 OF PRESSURE DIST. GUIDELINES:

(MAXIMUM LATERAL LENGTH)

ORIFICE DIAM (d)	LATERAL DIAM.(D)	ORIFICE SPAC.(Y)	SCH40	CLASS200
<u>3/16</u> IN	<u>1.25</u> IN	<u>3</u> FT	<u>60</u> FT	<u>69</u> FT

CHOSEN PIPE CLASS = CL. 200  
CHOSEN ORIFICE DIAM. = 3/16 IN  
LATERAL DIAM. = 1.25 IN  
ORIFICE SPACING = 3 FT

USE CL. 200

### SELECT MANIFOLD DIAMETER:

CALCULATE ORIFICE DISCHARGE RATE FROM TABLE IN APPENDIX 2  
ORIFICE DISCHARGE RATE = .59 GPM

CACULATE LATERAL DISCHARGE RATE = 12.39 GPM

USE TABLE 1 TO DETERMINE ACCEPTABLE MANIFOLD DIAMETER  
ACCEPTABLE MANIFOLD DIAMETER = 2 IN

### DESIGN OF PRESSURIZATION SYSTEM:

DETERMINE DOSE VOLUME BASED ON SOIL TYPE

A. RECOMMENDED DOSING FREQUENCY = 72 DOSES PER DAY

RECOMMENDED DOSE VOLUME  
(DESIGN FLOW/DOSING FREQUENCY) = 225 GAL

B. DOSE VOLUME BASED ON DOSE VOLUME/PIPE VOID RATIO = 96.9 GAL

REQUIRED DOSE VOLUME = (4) X (INTERIOR VOLUME OF LATERALS + INTERIOR VOLUME OF MANIFOLD + INTERIOR VOLUME OF TRANSPORT LINE)

FEDERS = 54 L.F. = 27' DRAINS = 2.5 GAL  
(#) X ( 23 GAL + 0 GAL + 6.8 GAL ) = 96.9 GAL  
3 36' DRAINS  $\uparrow$  ← USE 4 TIMED DOSES/DAY  
FOR DESIRED DOSE VOLUME USE = 112.5 GAL

DETERMINE REQUIRED PUMP DISCHARGE CAPACITY = 49.56 GPM

DISCHARGE RATE = LATERAL DISCHARGE RATE TIMES THE NO. OF LATERALS

CALCULATE TOTAL FRICTION LOSSES IN NETWORK:

TRANSPORT LINE FRICTION LOSSES = (USE TABLE OR EQUATION IN APPENDIX 3)  
= 2.8 FT

PIPE MATERIAL	PIPE DIAMETER	FLOW (GPM)	PIPE LENGTH	FRICTION LOSS IN PIPE
<u>CL 200</u>	<u>2"</u>	<u>49.56</u>	<u>85'</u>	<u>2.8'</u>

MANIFOLD AND LATERAL FRICTION LOSSES = 4 FT. TYPICAL

TOTAL ELEVATION LIFT = 10 FT

DETERMINE TOTAL DYNAMIC HEAD:

RESIDUAL PRESSURE	<u>2</u> FT
TRANSPORT LINE FRICTION LOSSES	<u>2.8</u> FT
MANIFOLD AND LATERAL FRICTION LOSSES	<u>4</u> FT TYP.
TOTAL ELEVATION LIFT	<u>10</u> FT

TOTAL DYNAMIC HEAD = 18.8 FT

REQUIRED CAPACITY = 49.56 GPM, TOTAL DYNAMIC HEAD = 18.8 FT

REQUIRED PUMP HYDROMATIC SP 50



# Performance Data

## SP50

RPM: **1750**

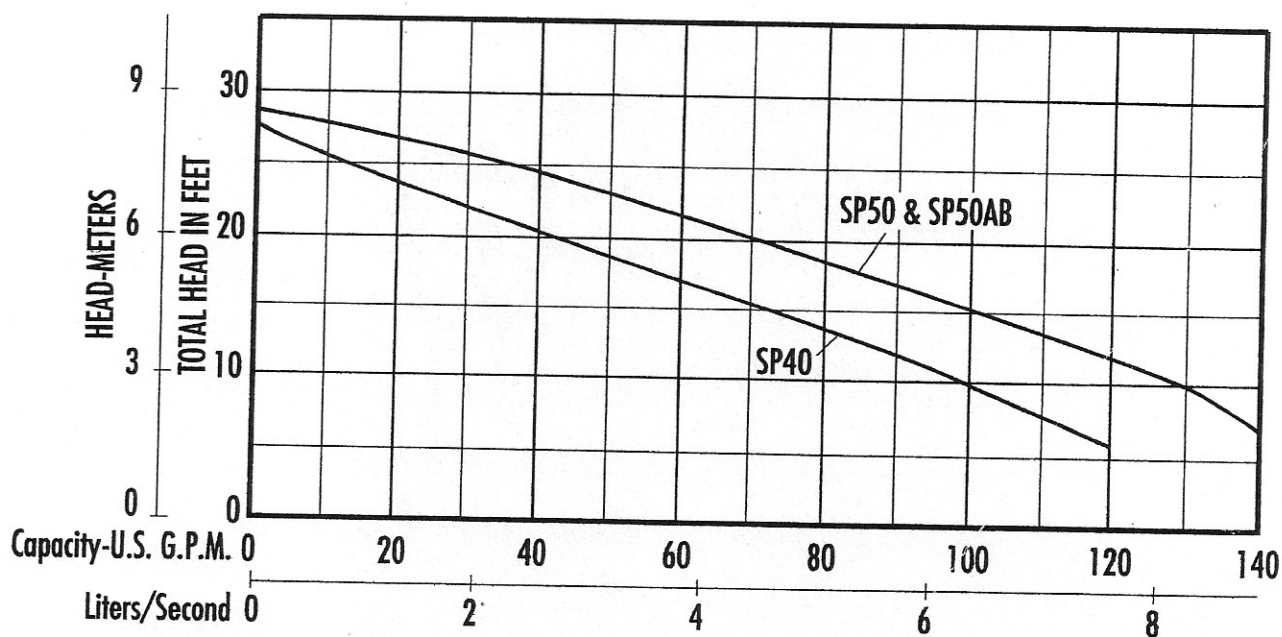
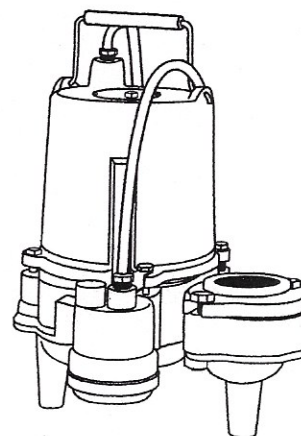
Discharge: **2"**

Solids: **1-1/2"**

Wholesale Products Page: 6260-1

Section: Performance Data

Dated: January 2001



The curves reflect maximum performance characteristics without exceeding full load (Nameplate) horsepower. All pumps have a service factor of 1.2. Operation is recommended in the bounded area with operational point within the curve limit. Performance curves are based on actual tests with clear water at 70° F. and 1280 feet site elevation.

Conditions of Service:

GPM: \_\_\_\_\_ TDH: \_\_\_\_\_

**HYDROMATIC®**

## Appendix Section 8

### CSWPPP Analysis and Design

- C1.0 TESC (see planset)
- CSWPPP paperwork for reference

Wheel Wash  
Dimensions OK \_\_\_\_ Problem  
Sed buildup or tracking OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Construction Road**

Stable Driving Surf. OK \_\_\_\_ Problem  
Vehicle Avoidance OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Sediment Trap/Pond**

Sed. Accumulation OK \_\_\_\_ Problem  
Overtopping OK \_\_\_\_ Problem  
Inlet/Outlet Erosion OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Catch Basin/Inlet Protection**

Sed. Accumulation OK \_\_\_\_ Problem  
Damage OK \_\_\_\_ Problem  
Clogged Filter OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Interceptor Dike/Swale**

Damage OK \_\_\_\_ Problem  
Sed. Accumulation OK \_\_\_\_ Problem  
Overtopping OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Pipe Slope Drain**

Damage OK \_\_\_\_ Problem  
Inlet/Outlet OK \_\_\_\_ Problem  
Secure Fittings OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Ditches**

Damage OK \_\_\_\_ Problem  
Sed. Accumulation OK \_\_\_\_ Problem  
Overtopping OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Outlet Protection**

Scour OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Level Spreader**

Damage OK \_\_\_\_ Problem  
Concentrated Flow OK \_\_\_\_ Problem  
Rills/Gullies OK \_\_\_\_ Problem  
Sed. Accumulation OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Dewatering Controls**

Sediment OK \_\_\_\_ Problem

**Dust Control**

Palliative applied OK \_\_\_\_ Problem

**Miscellaneous**

Wet Season Stockpile OK \_\_\_\_ Problem  
Other OK \_\_\_\_ Problem

**Comments:****Actions Taken:****Problems Unresolved:**

**DRAFT**

<b>Pollution Prevention Team</b>	<b>Completed by:</b> _____ <b>Title:</b> _____ <b>Date:</b> _____
<b>Responsible Official:</b> _____ <b>Team Leader:</b> _____  <b>Responsibilities:</b> _____ _____ _____	<b>Title:</b> _____ <b>Office Phone:</b> _____ <b>Cell Phone #:</b> _____ <b>Pager #:</b> _____
(1) _____  <b>Responsibilities:</b> _____ _____ _____	<b>Title:</b> _____ <b>Office Phone:</b> _____ <b>Pager #:</b> _____ <b>Cell Phone:</b> _____
(2) _____  <b>Responsibilities:</b> _____ _____ _____	<b>Title:</b> _____ <b>Office Phone:</b> _____ <b>Pager #:</b> _____ <b>Cell Phone #:</b> _____

<b>Employee Training</b>		<b>Completed by:</b> _____	
		<b>Title:</b> _____	
		<b>Date:</b> _____	
<b>Describe the annual training of employees on the SWPPP, addressing spill response, good housekeeping, and material management practices.</b>			
<b>Training Topics</b>	<b>Brief Description of Training Program/Materials (e.g., film, newsletter course)</b>	<b>Schedule for Training (list dates)</b>	<b>Attendees</b>
<b>1.) LINE WORKERS</b>			
<b>Spill Prevention and Response</b>			
<b>Good Housekeeping</b>			
<b>Material Management Practices</b>			
<b>2.) P2 TEAM:</b>			
<b>SWPPP Implementation</b>			
<b>Monitoring Procedures</b>			



List of Significant Spills and Leaks						Completed by: _____ Title: _____ Date: _____		
List all spills and leaks of toxic or hazardous pollutants that were significant but are <u>not</u> limited to, release of <u>oil</u> or <u>hazardous substances in excess of reportable quantities</u> . Although not required, we suggest you list spills and leaks of non-hazardous materials.								
Date (month/day/year)	Location (as indicated on site map)	Description				Response Procedure		Preventive Measure Taken
		Type of Material	Quantity	Source, If Known	Reason for Spill/Leak	Amount of Material Recovered	Material No longer exposed to Stormwater (Yes/No)	

<b>Potential Pollutant Source Identification</b>		<b>Completed by:</b> _____ <b>Title:</b> _____ <b>Date:</b> _____
List all potential stormwater pollutants from materials handled, treated, or stored on-site.		
<b>Potential Stormwater Pollutant</b>	<b>Stormwater Pollutant Source</b>	<b>Likelihood of pollutant being present in your stormwater discharge. If yes, explain</b>

<b>Material Inventory</b>		Completed by: _____						
		Title: _____						
		Date: _____						
List materials handled, treated, stored, or disposed of at the project site that may potentially be exposed to precipitation or runoff.								
Material	Purpose/Location	Quantity (Units)				Likelihood of contact with stormwater If Yes, describe reason	Past Spill or Leak	
		Used	Produced	Stored			Leak	
		(indicate per/wk. or yr.)					Yes	No

## Appendix Section 9

### Bond Quantities, Facility Summaries, and Declaration of Covenant

- Site Improvement Bond Quantity Worksheet (King County)
- Declaration of Covenant for Maintenance and Inspection of Flow Control BMPs

# Site Improvement Bond Quantity Worksheet

S15 Web date: 04/03/2015



Department of Permitting & Environmental Review  
35030 SE Douglas Street, Suite 210  
Snoqualmie, Washington 98065-9266  
206-296-6600 TTY Relay 711

For alternate formats, call 206-296-6600.

**Project Name:** Sweet Residence  
**Location:** 29120 310th Avenue SE, Ravensdale, WA 98051

**Date:** 4/25/2023  
**Project No.:** DWEL21-0051  
**Activity No.:** \_\_\_\_\_

Clearing greater than or equal to 5,000 board feet of timber?

yes

X no

If yes,

Forest Practice Permit Number: \_\_\_\_\_

(RCW 76.09)

Note: All prices include labor, equipment, materials, overhead and profit. Prices are from RS Means data adjusted for the Seattle area or from local sources if not included in the RS Means database.

# Site Improvement Bond Quantity Worksheet

S15 Web date: 04/03/2015

		Reference #	Unit Price	Unit	Quantity	# of Applications	Cost
<b>EROSION/SEDIMENT CONTROL</b>	Number						
Backfill & compaction-embankment	ESC-1		\$ 6.00	CY			
Check dams, 4" minus rock	ESC-2	SWDM 5.4.6.3	\$ 80.00	Each			
Crushed surfacing 1 1/4" minus	ESC-3	WSDOT 9-03.9(3)	\$ 95.00	CY			
Ditching	ESC-4		\$ 9.00	CY			
Excavation-bulk	ESC-5		\$ 2.00	CY			
Fence, silt	ESC-6	SWDM 5.4.3.1	\$ 1.50	LF	325		488
Fence, Temporary (NGPE)	ESC-7		\$ 1.50	LF			
Hydroseeding	ESC-8	SWDM 5.4.2.4	\$ 0.80	SY			
Jute Mesh	ESC-9	SWDM 5.4.2.2	\$ 3.50	SY			
Mulch, by hand, straw, 3" deep	ESC-10	SWDM 5.4.2.1	\$ 2.50	SY			
Mulch, by machine, straw, 2" deep	ESC-11	SWDM 5.4.2.1	\$ 2.00	SY			
Piping, temporary, CPP, 6"	ESC-12		\$ 12.00	LF			
Piping, temporary, CPP, 8"	ESC-13		\$ 14.00	LF			
Piping, temporary, CPP, 12"	ESC-14		\$ 18.00	LF			
Plastic covering, 6mm thick, sandbagged	ESC-15	SWDM 5.4.2.3	\$ 4.00	SY			
Rip Rap, machine placed; slopes	ESC-16	WSDOT 9-13.1(2)	\$ 45.00	CY			
Rock Construction Entrance, 50'x15'x1'	ESC-17	SWDM 5.4.4.1	\$ 1,800.00	Each	1		1800
Rock Construction Entrance, 100'x15'x1'	ESC-18	SWDM 5.4.4.1	\$ 3,200.00	Each			
Sediment pond riser assembly	ESC-19	SWDM 5.4.5.2	\$ 2,200.00	Each			
Sediment trap, 5' high berm	ESC-20	SWDM 5.4.5.1	\$ 19.00	LF			
Sed. trap, 5' high, riprapped spillway berm section	ESC-21	SWDM 5.4.5.1	\$ 70.00	LF			
Seeding, by hand	ESC-22	SWDM 5.4.2.4	\$ 1.00	SY	2500		2500
Sodding, 1" deep, level ground	ESC-23	SWDM 5.4.2.5	\$ 8.00	SY			
Sodding, 1" deep, sloped ground	ESC-24	SWDM 5.4.2.5	\$ 10.00	SY			
TESC Supervisor	ESC-25		\$ 110.00	HR	3		330
Water truck, dust control	ESC-26	SWDM 5.4.7	\$ 140.00	HR			
<b>WRITE-IN-ITEMS **** (see page 9)</b>							
				Each			

ESC SUBTOTAL:	\$ 5,117.50
30% CONTINGENCY & MOBILIZATION:	\$ 1,535.25
ESC TOTAL:	\$ 6,652.75
COLUMN:	A

# Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-Way		Future Public Right of Way & Drainage Facilities		Private Improvements		
		Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
<b>GENERAL ITEMS</b>										
	<b>No.</b>									
Backfill & Compaction- embankment	GI - 1	\$ 6.00	CY							
Backfill & Compaction- trench	GI - 2	\$ 9.00	CY							
Clear/Remove Brush, by hand	GI - 3	\$ 1.00	SY			250	250.00			
Clearing/Grubbing/Tree Removal	GI - 4	\$10,000.00	Acre							
Excavation - bulk	GI - 5	\$ 2.00	CY							
Excavation - Trench	GI - 6	\$ 5.00	CY							
Fencing, cedar, 6' high	GI - 7	\$ 20.00	LF							
Fencing, chain link, vinyl coated, 6' high	GI - 8	\$ 20.00	LF							
Fencing, chain link, gate, vinyl coated, 20'	GI - 9	\$ 1,400.00	Each							
Fencing, split rail, 3' high	GI - 10	\$ 15.00	LF							
Fill & compact - common barrow	GI - 11	\$ 25.00	CY							
Fill & compact - gravel base	GI - 12	\$ 27.00	CY							
Fill & compact - screened topsoil	GI - 13	\$ 39.00	CY							
Gabion, 12" deep, stone filled mesh	GI - 14	\$ 65.00	SY							
Gabion, 18" deep, stone filled mesh	GI - 15	\$ 90.00	SY							
Gabion, 36" deep, stone filled mesh	GI - 16	\$ 150.00	SY							
Grading, fine, by hand	GI - 17	\$ 2.50	SY							
Grading, fine, with grader	GI - 18	\$ 2.00	SY							
Monuments, 3' long	GI - 19	\$ 250.00	Each							
Sensitive Areas Sign	GI - 20	\$ 7.00	Each							
Sodding, 1" deep, sloped ground	GI - 21	\$ 8.00	SY							
Surveying, line & grade	GI - 22	\$ 850.00	Day							
Surveying, lot location/lines	GI - 23	\$ 1,800.00	Acre							
Traffic control crew ( 2 flaggers )	GI - 24	\$ 120.00	HR							
Trail, 4" chipped wood	GI - 25	\$ 8.00	SY							
Trail, 4" crushed cinder	GI - 26	\$ 9.00	SY							
Trail, 4" top course	GI - 27	\$ 12.00	SY							
Wall, retaining, concrete	GI - 28	\$ 55.00	SF							
Wall, rockery	GI - 29	\$ 15.00	SF							

# Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-way		Future Public Right of Way & Drainage Facilities		Private Improvements		
		Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
<b>ROAD IMPROVEMENT</b>										
	<b>No.</b>									
AC Grinding, 4' wide machine < 1000sy	RI - 1	\$ 30.00	SY							
AC Grinding, 4' wide machine 1000-2000sy	RI - 2	\$ 16.00	SY							
AC Grinding, 4' wide machine > 2000sy	RI - 3	\$ 10.00	SY							
AC Removal/Disposal	RI - 4	\$ 35.00	SY							
Barricade, type III ( Permanent )	RI - 6	\$ 56.00	LF							
Curb & Gutter, rolled	RI - 7	\$ 17.00	LF							
Curb & Gutter, vertical	RI - 8	\$ 12.50	LF							
Curb and Gutter, demolition and disposal	RI - 9	\$ 18.00	LF							
Curb, extruded asphalt	RI - 10	\$ 5.50	LF							
Curb, extruded concrete	RI - 11	\$ 7.00	LF							
Sawcut, asphalt, 3" depth	RI - 12	\$ 1.85	LF							
Sawcut, concrete, per 1" depth	RI - 13	\$ 3.00	LF							
Sealant, asphalt	RI - 14	\$ 2.00	LF							
Shoulder, AC, ( see AC road unit price )	RI - 15	\$ -	SY							
Shoulder, gravel, 4" thick	RI - 16	\$ 15.00	SY							
Sidewalk, 4" thick	RI - 17	\$ 38.00	SY							
Sidewalk, 4" thick, demolition and disposal	RI - 18	\$ 32.00	SY							
Sidewalk, 5" thick	RI - 19	\$ 41.00	SY							
Sidewalk, 5" thick, demolition and disposal	RI - 20	\$ 40.00	SY							
Sign, handicap	RI - 21	\$ 85.00	Each							
Striping, per stall	RI - 22	\$ 7.00	Each							
Striping, thermoplastic, ( for crosswalk )	RI - 23	\$ 3.00	SF							
Striping, 4" reflectorized line	RI - 24	\$ 0.50	LF							



# Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-way		Future Public Right of Way & Drainage Facilities		Private Improvements		
		Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
<b>ROAD SURFACING</b>										
	<b>No.</b>	(4" Rock = 2.5 base & 1.5" top course) 9 1/2" Rock= 8" base & 1.5" top course)								
Additional 2.5" Crushed Surfacing	RS - 1	\$ 3.60	SY							
HMA 1/2" Overlay, 1.5"	RS - 2	\$ 14.00	SY							
HMA 1/2" Overlay 2"	RS - 3	\$ 18.00	SY							
HMA Road, 2", 4" rock, First 2500 SY	RS - 4	\$ 28.00	SY							
HMA Road, 2", 4" rock, Qty. over 2500 SY	RS - 5	\$ 21.00	SY							
HMA Road, 3", 9 1/2" Rock, First 2500 SY	RS - 6	\$ 42.00	SY							
HMA Road, 3", 9 1/2" Rock, Qty Over 2500 SY	RS - 7	\$ 35.00	SY							
Not Used	RS - 8									
Not Used	RS - 9									
HMA Road, 6" Depth, First 2500 SY	RS - 10	\$ 33.10	SY							
HMA Road, 6" Depth, Qty. Over 2500 SY	RS - 11	\$ 30.00	SY							
HMA 3/4" or 1", 4" Depth	RS - 12	\$ 20.00	SY							
Gravel Road, 4" rock, First 2500 SY	RS - 13	\$ 15.00	SY			250	3,750.00			
Gravel Road, 4" rock, Qty. over 2500 SY	RS - 14	\$ 10.00	SY							
PCC Road (Add Under Write-Ins w/Design)	RS - 15									
Thickened Edge	RS - 17	\$ 8.60	LF							

# Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-way		Future Public Right of Way & Drainage Facilities		Private Improvements		
		Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
<b>DRAINAGE</b> (CPP = Corrugated Plastic Pipe, N12 or Equivalent) For Culvert prices, Average of 4' cover was assumed. Assume perforated PVC is same price as solid pipe.										
Access Road, R/D	D - 1	\$ 21.00	SY							
Bollards - fixed	D - 2	\$ 240.74	Each							
Bollards - removable	D - 3	\$ 452.34	Each							
* (CBs include frame and lid)										
CB Type I	D - 4	\$ 1,500.00	Each					1	1,500.00	
CB Type IL	D - 5	\$ 1,750.00	Each							
CB Type II, 48" diameter	D - 6	\$ 2,300.00	Each							
for additional depth over 4'	D - 7	\$ 480.00	FT							
CB Type II, 54" diameter	D - 8	\$ 2,500.00	Each							
for additional depth over 4'	D - 9	\$ 495.00	FT							
CB Type II, 60" diameter	D - 10	\$ 2,800.00	Each							
for additional depth over 4'	D - 11	\$ 600.00	FT							
CB Type II, 72" diameter	D - 12	\$ 3,600.00	Each							
for additional depth over 4'	D - 13	\$ 850.00	FT							
Through-curb Inlet Framework (Add)	D - 14	\$ 400.00	Each							
Cleanout, PVC, 4"	D - 15	\$ 150.00	Each							
Cleanout, PVC, 6"	D - 16	\$ 170.00	Each							
Cleanout, PVC, 8"	D - 17	\$ 200.00	Each							
Culvert, PVC, 4"	D - 18	\$ 10.00	LF							
Culvert, PVC, 6"	D - 19	\$ 13.00	LF							
Culvert, PVC, 8"	D - 20	\$ 15.00	LF							
Culvert, PVC, 12"	D - 21	\$ 23.00	LF					60	1,380.00	
Culvert, CMP, 8"	D - 22	\$ 19.00	LF							
Culvert, CMP, 12"	D - 23	\$ 29.00	LF							
Culvert, CMP, 15"	D - 24	\$ 35.00	LF							
Culvert, CMP, 18"	D - 25	\$ 41.00	LF							
Culvert, CMP, 24"	D - 26	\$ 56.00	LF							
Culvert, CMP, 30"	D - 27	\$ 78.00	LF							
Culvert, CMP, 36"	D - 28	\$ 130.00	LF							
Culvert, CMP, 48"	D - 29	\$ 190.00	LF							
Culvert, CMP, 60"	D - 30	\$ 270.00	LF							
Culvert, CMP, 72"	D - 31	\$ 350.00	LF							

# Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

<b><u>DRAINAGE CONTINUED</u></b>				<b>Existing Right-of-way</b>		<b>Future Public Right of Way &amp; Drainage Facilities</b>		<b>Private Improvements</b>		
	No.	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	
Culvert, Concrete, 8"	D - 32	\$ 25.00	LF							
Culvert, Concrete, 12"	D - 33	\$ 36.00	LF							
Culvert, Concrete, 15"	D - 34	\$ 42.00	LF							
Culvert, Concrete, 18"	D - 35	\$ 48.00	LF							
Culvert, Concrete, 24"	D - 36	\$ 78.00	LF							
Culvert, Concrete, 30"	D - 37	\$ 125.00	LF							
Culvert, Concrete, 36"	D - 38	\$ 150.00	LF							
Culvert, Concrete, 42"	D - 39	\$ 175.00	LF							
Culvert, Concrete, 48"	D - 40	\$ 205.00	LF							
Culvert, CPP, 6"	D - 41	\$ 14.00	LF							
Culvert, CPP, 8"	D - 42	\$ 16.00	LF							
Culvert, CPP, 12"	D - 43	\$ 24.00	LF							
Culvert, CPP, 15"	D - 44	\$ 35.00	LF							
Culvert, CPP, 18"	D - 45	\$ 41.00	LF							
Culvert, CPP, 24"	D - 46	\$ 56.00	LF							
Culvert, CPP, 30"	D - 47	\$ 78.00	LF							
Culvert, CPP, 36"	D - 48	\$ 130.00	LF							
Ditching	D - 49	\$ 9.50	CY							
Flow Dispersal Trench (1,436 base+)	D - 50	\$ 28.00	LF					50	2836	
French Drain (3' depth)	D - 51	\$ 26.00	LF					250	6500	
Geotextile, laid in trench, polypropylene	D - 52	\$ 3.00	SY							
Mid-tank Access Riser, 48" dia, 6' deep	D - 54	\$ 2,000.00	Each							
Pond Overflow Spillway	D - 55	\$ 16.00	SY							
Restrictor/Oil Separator, 12"	D - 56	\$ 1,150.00	Each							
Restrictor/Oil Separator, 15"	D - 57	\$ 1,350.00	Each							
Restrictor/Oil Separator, 18"	D - 58	\$ 1,700.00	Each							
Riprap, placed	D - 59	\$ 42.00	CY							
Tank End Reducer (36" diameter)	D - 60	\$ 1,200.00	Each							
Trash Rack, 12"	D - 61	\$ 350.00	Each							
Trash Rack, 15"	D - 62	\$ 410.00	Each							
Trash Rack, 18"	D - 63	\$ 480.00	Each							
Trash Rack, 21"	D - 64	\$ 550.00	Each							

# Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

				Existing Right-of-way		Future Public Right of Way & Drainage Facilities		Private Improvements			
		Unit Price	Unit	Quant.	Price	Quant.	Cost	Quant.	Cost		
<b><u>PARKING LOT SURFACING</u></b>											
Not To Be Used For Roads Or Shoulders											
	<b>No.</b>										
2" AC, 2" top course rock & 4" borrow	PL - 1	\$ 21.00	SY	NA		NA					
2" AC, 1.5" top course & 2.5" base cours	PL - 2	\$ 28.00	SY	NA		NA					
4" select borrow	PL - 3	\$ 5.00	SY	NA		NA					
1.5" top course rock & 2.5" base course	PL - 4	\$ 14.00	SY	NA		NA					
<b><u>UTILITY POLES &amp; STREET LIGHTING</u></b>											
Utility pole relocation costs must be accompanied by <b>Franchise Utility's Cost Estimate</b>											
Utility Pole(s) Relocation	UP-1	Lump Sum									
Street Light Poles w/Luminaires	UP-2	\$ 7,500.00	Each								
<b><u>WRITE-IN-ITEMS</u></b>											
(Such as detention/water quality vaults.)	<b>No.</b>										
Stormwater Vault	WI - 1	#####	Each								
Block Wall	WI - 2	\$ 16.00	SY								
Yard Drain	WI - 3	\$ 225.00	CY								
	WI - 4		LF								
	WI - 5		FT								
	WI - 6										
	WI - 7										
	WI - 8										
	WI - 9										
	WI - 10										

SUBTOTAL

SUBTOTAL (SUM ALL PAGES):

30% CONTINGENCY & MOBILIZATION:

GRANDTOTAL:

COLUMN:

B

C

D

# Site Improvement Bond Quantity Worksheet

Web date: 04/03/2015

Original bond computations prepared by:

Name: Duffy Ellis, PE  
 PE Registration Number: 39766  
 Firm Name: Civil Engineering Solutions  
 Address: 102 NW Canal Street, Seattle, WA 98107

Date: 4/25/2023  
 Tel. #: 206-930-0342  
 Project No: DWEL21-0051; CES #1835

## FINANCIAL GUARANTEE REQUIREMENTS

	PERFORMANCE BOND* AMOUNT	MINIMUM BOND* AMOUNT REQUIRED FOR RECORDING OR TEMPORARY OCCUPANCY AT SUBSTANTIAL COMPLETION ***	PUBLIC ROAD & DRAINAGE MAINTENANCE/DEFECT BOND*
Stabilization/Erosion Sediment Control (ESC)	(A) \$ <u>6,652.8</u>		
Existing Right-of-Way Improvements	(B) \$ <u>-</u>		
Future Public Right of Way & Drainage Facilities	(C) \$ <u>5,200.0</u>		
Private Improvements	(D) \$ <u>15,880.8</u>		
Calculated Quantity Completed			
Total Right-of Way and/or Site Restoration Bond*/** (First \$7,500 of bond* shall be cash.)	(A+B) \$ <u>6,652.8</u>		
Performance Bond* Amount (A+B+C+D) = TOTAL	(T) \$ <u>27,733.6</u> Minimum is \$2000.	T x 0.30 \$ <u>8,320.1</u> Minimum is \$2000.	
Maintenance/Defect Bond* Total			(B+C) x 0.25 = \$ <u>2,000.0</u> Minimum is \$2000.

NAME OF PERSON PREPARING BOND\* REDUCTION: \_\_\_\_\_

Date: \_\_\_\_\_

\* **NOTE:** The word "bond" as used in this document means a financial guarantee acceptable to King County.

\*\* **NOTE:** KCC 27A authorizes right of way and site restoration bonds to be combined when both are required.

The restoration requirement shall include the total cost for all TESC as a minimum, not a maximum. In addition, corrective work, both on- and off-site needs to be included. Quantities shall reflect worse case scenarios not just minimum requirements. For example, if a salmonid stream may be damaged, some estimated costs for restoration needs to be reflected in this amount. The 30% contingency and mobilization costs are computed in this quantity.

\*\*\* **NOTE:** Per KCC 27A, total bond amounts remaining after reduction shall not be less than 30% of the original amount (T) or as revised by major design changes.

REQUIRED BOND\* AMOUNTS ARE SUBJECT TO REVIEW AND MODIFICATION BY KING COUNTY

## Site Design Application Form for Individual On-Site Sewage System (OSS)

ON Record ID: **0224960** For Office  
 Payment Date: **11/07/2022** Use Only

**THIS IS NOT A PERMIT**

Approximate Site Address: 29288 310th Ave SE

### Applicant Information

Name: Geoff Sweet

Mailing Address: 27805 217th Ave SE

Maple Valley Wa. 98038

Phone Number: 425-205-0258

Email: geoffsweet@gmail.com

**Paid**

### Designer Information

AR0144716

IN0923723

**\$192**

Name: Barry Cole

Address: PO Box 1040 Enumclaw Wa. 98022

Designer Phone Number: 360-185-1965

Email: colesepticdesing @msn.com

DOL Certification No: 5100107

### Property Information

Parcel # (APN): 0421079187

Lot: \_\_\_\_\_

Block: \_\_\_\_\_

Subdivision Name: \_\_\_\_\_

Type of Area: Rural \_\_\_\_\_

Urban \_\_\_\_\_

Property Size (Sq. ft.): 871200

Acreage: 20

Distance from property line to a public sewer is > 200? Yes ☒ No \_\_\_\_\_

Design Type: New ☒ Replacement to support major alteration/new building/additional bedrooms \_\_\_\_\_

Replacement of a failed system \_\_\_\_\_ If replacement, Non-conforming: \_\_\_\_\_

Water Supply: Public Water System - Group A \_\_\_\_\_ Proposed Private Individual Well \_\_\_\_\_ Rainwater catchment System \_\_\_\_\_

Public Water System - Group B \_\_\_\_\_ Private Spring \_\_\_\_\_ Other \_\_\_\_\_

Existing Private Individual Well ☒

Water System Name: \_\_\_\_\_

Water System ID: \_\_\_\_\_

Dwelling Type: Single Family ☒ Non-Single Family: \_\_\_\_\_

### System Information

Septic Tank Size (in Gal): 1500 Septic Tank Material: Concrete ☒ Non-Concrete \_\_\_\_\_

Pump Tank size (in Gal.): 1500 Pump Tank Material: Concrete ☒ Non-Concrete \_\_\_\_\_

Drainfield Type: Pressure ☒ Subsurface Drip \_\_\_\_\_ Sand Lined Trench/Bed \_\_\_\_\_ Glendon \_\_\_\_\_ Gravity (no Pump) \_\_\_\_\_

Mound \_\_\_\_\_ OSCAR Coils \_\_\_\_\_ Pump to gravity \_\_\_\_\_ None - Only holding tank \_\_\_\_\_

If Drainfield Type is OSCAR Coils, OSCAR Coil size: OS-50 (5 feet) \_\_\_\_\_ OS-100(7 feet) \_\_\_\_\_

Drainfield Material: Gravel \_\_\_\_\_ Gravelless \_\_\_\_\_ Not Applicable \_\_\_\_\_

Nibbler: ☐

Distribution Product Manufacturer and Model (If applicable): \_\_\_\_\_



# Public Health

## Seattle & King County



### Site Design Application Form for Individual On-Site Sewage System (OSS)

**THIS IS NOT A PERMIT**

ON Record ID: **0224960** For Office  
Payment Date: **11/07/2022** Use Only

Treatment Type:

No advanced treatment (only septic tank) ☒ Proprietary Treatment Product (ATU, etc.) \_\_\_\_\_ Intermittent Sand Filter \_\_\_\_\_  
Mound \_\_\_\_\_ Recirculating Sand Filter \_\_\_\_\_ Sand Lined Trench/Bed \_\_\_\_\_  
Stratified Sand Filter \_\_\_\_\_ Composting or Incinerating Toilet \_\_\_\_\_ Holding Tank \_\_\_\_\_

Proprietary treatment product:

FAST (MicroFAST, RetroFAST) _____	Advan Tex _____	ECOPOD _____	Fusion _____	Multi-Flo _____
NuWater _____	Aqua Aire _____	Eljen _____	Glendon _____	Nayadic _____
BioBarrier MBR _____	Aqua Safe _____	Enviro-Flo _____	Jet Inc. _____	LOWeFLOW _____
Singular _____	AIRR _____	Enviro-Guard _____	Hydro-Kinetic _____	SepticTech _____
Whitewater _____	Busse MBR _____	Fuji Clean _____	Puraflow Peat Fiber Biofilter _____	TDR (Advanced Septic Treatment) _____

Proprietary Treatment Product Model: \_\_\_\_\_

Disinfection: ☐

If Disinfection, Model: \_\_\_\_\_

#### Calculations:

Number of bedrooms: 4 Total Gallons/Day (450 minimum) (Gal): 570  
Soil Texture Type (1-5): 4 Application Rate (Gal/sq. ft./day): .6  
Total Absorption Area (sq. ft.): 750 Date Soils Logged: 3/22/19 & 10/11/22  
Drainfield Length(ft.): 250 Trench Width(inches): 36  
Trench Depth Minimum (inches): 12 Trench Depth Maximum (inches): 36  
Garbage Disposal: ☐ Max. Slope in drainfield/Reserve Area (%): \_\_\_\_\_

If encountered, provide depth to the restrictive layer in Inches. (If not, leave it blank): \_\_\_\_\_

Basement Plumbing: ☐

I understand that failure to comply with the Code of King County Board of Health Title 13 may result in the disapproval of the sewage system being proposed in this application. Non-compliance may also lead to revocation of my Designer's Certificate of Competency and/or appropriate legal action by the Health Department.

Designer's Signature: \_\_\_\_\_ K.C. ID# 5100107 Date: 10/13/22

**FOR HEALTH DEPARTMENT USE ONLY:**

NC

ING COUNTY CERTIFIED INSTALLER UNLESS

REVISION

APPROVED (date): 2.24.2023

BY: \_\_\_\_\_

*Jana Crescibolo*

Pre-construction Meeting

Comments WELL DRILLED/ WATER QUALITY AND QUANTITY GOOD  
RESULTS ATTACHED

Required between designer and installer prior to permit issuance.

**BUILDING PERMIT IN PROCESS**

☒ Pre-construction meeting required between designer, installer, builder prior to permit issuance

APPROVAL OF THIS DESIGN APPLICATION IS BASED SOLELY ON INFORMATION PROVIDED IN THIS APPLICATION AND DOES NOT CONSTITUTE PERMISSION TO BEGIN CONSTRUCTION OF THE PROPOSED SEWAGE DISPOSAL SYSTEM OR ANY OTHER IMPROVEMENTS ON THE SITE. THIS APPROVAL SHALL NOT BE CONSIDERED AN ASSURANCE, EITHER EXPRESSED OR IMPLIED, THAT DEVELOPMENT PERMITS FOR THE SITE WILL BE ISSUED. THIS APPLICATION EXPIRES TWO YEARS FROM DATE OF APPROVAL.

DISAPPROVED (date): \_\_\_\_\_ BY: \_\_\_\_\_

See attached Site Deficiency Sheet.

Any person aggrieved by any decision or final order of the Health Officer may file a written application for appeal to the Health Officer within 60 calendar days of the date of the above decision. (Title 13, K.C.B.O.H. Chapter 13.12 – Sewage Review Committee). CS 13.15.97 Rev.7/21/00

RECEIVED

Received

11/07/2022

Eastgate Environmental Health

By wytchel



**From:** Criscuolo, Liana <Liana.Criscuolo@kingcounty.gov>  
**Sent:** Thursday, October 13, 2022 8:37 AM  
**To:** BARRY COLE  
**Subject:** RE: Geoff Sweet ON0209947

Hi Barry

You can email me the revision SA.....with a phone number to collect a 1-hour fee.

Thanks

Liana

---

**From:** BARRY COLE <colesepticdesign@msn.com>  
**Sent:** Wednesday, October 12, 2022 5:25 PM  
**To:** Criscuolo, Liana <Liana.Criscuolo@kingcounty.gov>  
**Cc:** Kellen White <kellen@lanewilliams.com>  
**Subject:** Geoff Sweet ON0209947

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Liana,

I need to revise this approval to make room for a stormwater system. The primary drain field needs to move below reserve, tanks and house to be relocated. I attached the revision to compare with the approval. I added 2 more soil logs for the new drain field location. Can you advise me of the fee and process to get this to you will be? I will wait for your response.

Thanks,

Barry Cole



***Cole Septic Design Inc.***

Professional OSWTS Designer #5100107

(360) 825-1965

[www.colesepticdesign.com](http://www.colesepticdesign.com)



## Search Results

Your search for '0421079187' returned the following results.

Explore by Category: [Records\(3\)](#)

## Records

All Records ▼

You can enter part or all of a Record Number to find a specific Record, search by permit type, and date range.

Showing 1-3 of 3 | [Download results](#)

Opened Date	Record Number	Record Type	Module	Short Notes	Project Name	Address	Status
03/04/2021	<a href="#">DWEL21-0051</a>	Residential Building - Single	Building		(MBP) SWEET SINGLE FAMILY RESIDENCE - SPRINKLERS REQUIRED	0 , WA 0 ,29120 310th AVE, WA 98051	Reviews In Process
01/22/2018	<a href="#">CADS18-0016</a>	Critical Areas Designation - Formal Designation	SiteDevCA		SWEET CAD		Permit Completed
09/18/2015	<a href="#">ENFR15-0928</a>	Code Enforcement Case	Enforce		SCHMITT TIM		Closed



# ITT

## GOULDS PUMPS Wastewater

### APPLICATIONS

Specifically designed for the following uses:

- Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

### SPECIFICATIONS

#### Pump

- Solids handling capabilities:  $\frac{3}{4}$ " maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 feet TDH.
- Temperature:  
104°F (40°C) continuous, 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

### MOTORS

- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
- Class B insulation on  $\frac{1}{3}$ -1½ HP models.
- Class F insulation on 2 HP models.

#### Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.

- $\frac{1}{3}$  – 1 HP models have NEMA three prong grounding plugs.
- 1½ HP and larger units have bare lead cord ends.

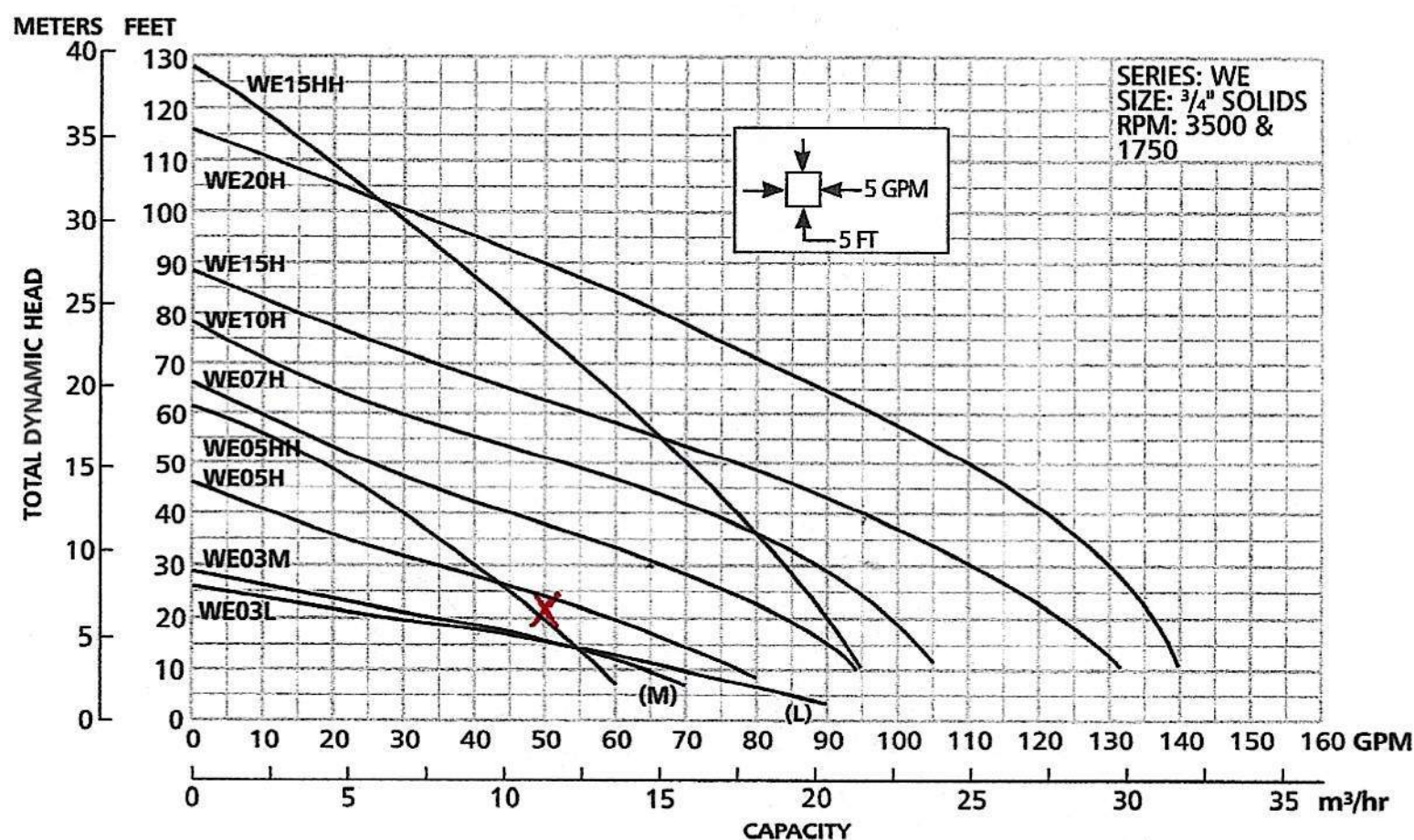
#### Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.
- **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- **Bearings:** Upper and lower heavy duty ball bearing construction.
- **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
- **O-ring:** Assures positive sealing against contaminants and oil leakage.

### AGENCY LISTINGS

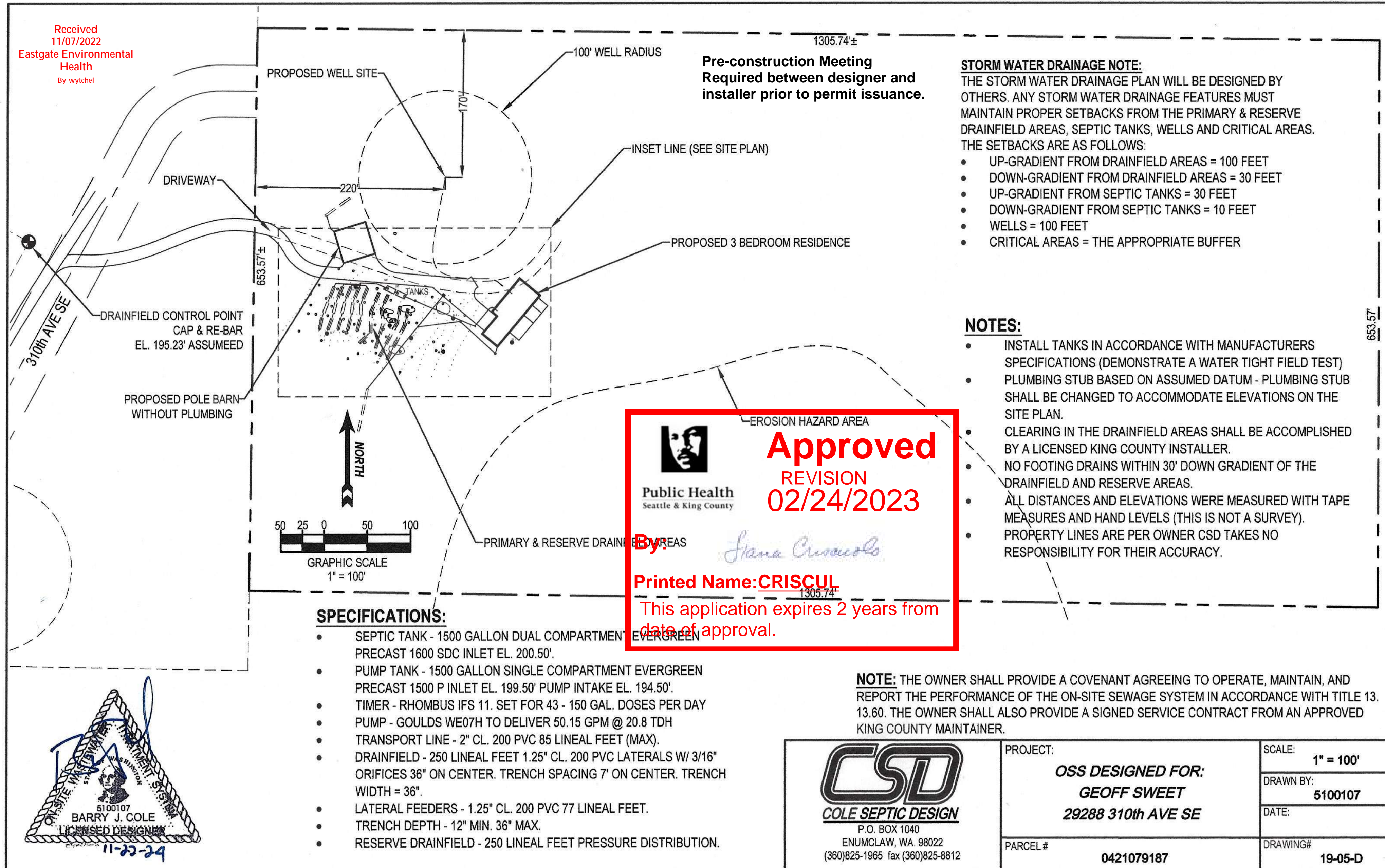


Tested to UL 778 and CSA 22.2 108 Standards  
By Canadian Standards Association File #LR38549  
Goulds Pumps is ISO 9001 Registered.





Received  
11/07/2022  
Eastgate Environmental  
Health  
By wytchel



Pre-construction Meeting  
Required between designer and  
installer prior to permit issuance.

#### STORM WATER DRAINAGE NOTE:

THE STORM WATER DRAINAGE PLAN WILL BE DESIGNED BY OTHERS. ANY STORM WATER DRAINAGE FEATURES MUST MAINTAIN PROPER SETBACKS FROM THE PRIMARY & RESERVE DRAINFIELD AREAS, SEPTIC TANKS, WELLS AND CRITICAL AREAS. THE SETBACKS ARE AS FOLLOWS:

- UP-GRADIENT FROM DRAINFIELD AREAS = 100 FEET
- DOWN-GRADIENT FROM DRAINFIELD AREAS = 30 FEET
- UP-GRADIENT FROM SEPTIC TANKS = 30 FEET
- DOWN-GRADIENT FROM SEPTIC TANKS = 10 FEET
- WELLS = 100 FEET
- CRITICAL AREAS = THE APPROPRIATE BUFFER

#### NOTES:

- INSTALL TANKS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS (DEMONSTRATE A WATER TIGHT FIELD TEST)
- PLUMBING STUB BASED ON ASSUMED DATUM - PLUMBING STUB SHALL BE CHANGED TO ACCOMMODATE ELEVATIONS ON THE SITE PLAN.
- CLEARING IN THE DRAINFIELD AREAS SHALL BE ACCOMPLISHED BY A LICENSED KING COUNTY INSTALLER.
- NO FOOTING DRAINS WITHIN 30' DOWN GRADIENT OF THE DRAINFIELD AND RESERVE AREAS.
- ALL DISTANCES AND ELEVATIONS WERE MEASURED WITH TAPE MEASURES AND HAND LEVELS (THIS IS NOT A SURVEY).
- PROPERTY LINES ARE PER OWNER CSD TAKES NO RESPONSIBILITY FOR THEIR ACCURACY.

#### SPECIFICATIONS:

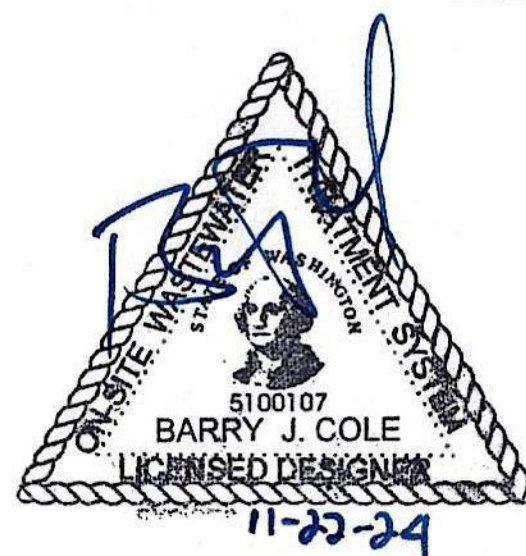
- SEPTIC TANK - 1500 GALLON DUAL COMPARTMENT EVERGREEN PRECAST 1600 SDC INLET EL. 200.50'.
- PUMP TANK - 1500 GALLON SINGLE COMPARTMENT EVERGREEN PRECAST 1500 P INLET EL. 199.50' PUMP INTAKE EL. 194.50'.
- TIMER - RHOMBUS IFS 11. SET FOR 43 - 150 GAL. DOSES PER DAY
- PUMP - GOULDS WE07H TO DELIVER 50.15 GPM @ 20.8 TDH
- TRANSPORT LINE - 2" CL. 200 PVC 85 LINEAL FEET (MAX).
- DRAINFIELD - 250 LINEAL FEET 1.25" CL. 200 PVC LATERALS W/ 3/16" ORIFICES 36" ON CENTER. TRENCH SPACING 7' ON CENTER. TRENCH WIDTH = 36".
- LATERAL FEEDERS - 1.25" CL. 200 PVC 77 LINEAL FEET.
- TRENCH DEPTH - 12" MIN. 36" MAX.
- RESERVE DRAINFIELD - 250 LINEAL FEET PRESSURE DISTRIBUTION.

**NOTE:** THE OWNER SHALL PROVIDE A COVENANT AGREEING TO OPERATE, MAINTAIN, AND REPORT THE PERFORMANCE OF THE ON-SITE SEWAGE SYSTEM IN ACCORDANCE WITH TITLE 13.13.60. THE OWNER SHALL ALSO PROVIDE A SIGNED SERVICE CONTRACT FROM AN APPROVED KING COUNTY MAINTAINER.



P.O. BOX 1040  
ENUMCLAW, WA. 98022  
(360)825-1965 fax (360)825-8812

PROJECT:	<b>OSS DESIGNED FOR: GEOFF SWEET 29288 310th AVE SE</b>	SCALE: <b>1" = 100'</b>
		DRAWN BY: <b>5100107</b>
		DATE:
PARCEL #	<b>0421079187</b>	DRAWING# <b>19-05-D</b>





REVISION



Public Health  
Seattle & King County

**Approved**

02/24/2023

By:

*Jana Crisculo*

Printed Name: **CRISCUL**

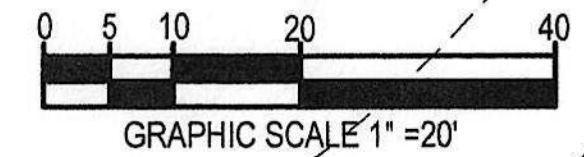
This application expires 2 years from date of approval.

INSET LINE (SEE PLOT PLAN)

**CLEARING NOTE:** CLEARING WITHIN THE PRIMARY & RESERVE DRAINFIELD AREAS SHALL BE ACCOMPLISHED BY A LICENSED KING COUNTY MASTER INSTALLER. ANY LARGE TREES IN THE DRAINFIELD AREAS TO BE REMOVED SHALL BE CUT DOWN AND THE STUMPS GROUND IN PLACE AS TO NOT DISTURB THE ORIGINAL SOILS WITHIN THESE AREAS.

Received  
11/07/2022  
Eastgate Environmental  
Health  
By wytchel

NORTH



**Pre-construction Meeting  
Required between designer and  
installer prior to permit issuance.**

PROPOSED SHOP  
NO PLUMBING  
FF. EL. 200.34'

EXISTING ROAD  
DRIVEWAY

LATERAL FEEDERS TYP.

2" CL. 200 PVC TRANSPORT LINE  
VALVE BOX TYP.

1500 GALLON TANKS EP  
1600 SDC + EP 1500 P

ELEVATED AREAS TYP. (REMOVE)

100' WELL RADIUS

PRIMARY DRAINFIELD AREA 250 LINEAL  
FEET PRESSURE DISTRIBUTION IN  
TYPE 4 SOILS.

9' MIN.

LAT. 5.50'

LAT. 4.50'

LAT. 3.50'

LAT. 2.50'

LAT. 1.50'

CLEANOUT / MONITOR PORTS TYP.

36"

SL 7

# **SOIL LOGS:**

3/22/19 & 10/11/22

- SL 1 0"-14" MEDIUM BROWN LOAMY FINE SAND  
14"-53" GRAY LOAMY FINE SAND
- SL 2 0"-12" MEDIUM BROWN LOAMY FINE SAND  
12"-60" GRAY LOAMY FINE SAND
- SL 3 0"-12" MEDIUM BROWN LOAMY FINE SAND  
12"-60" GRAY LOAMY FINE SAND
- SL 4 0"-36" GRAY LOAMY FINE SAND  
36"-60" TAN GRAVELLY LOAMY SAND
- SL 5 0"-14" MEDIUM BROWN LOAMY FINE SAND  
14"-60" TAN GRAVELLY LOAMY SAND
- SL 6 0"-32" MEDIUM BROWN LOAMY FINE SAND  
32"-53" TAN LOAMY FINE SAND  
53"-68" GRAY GRAVELLY LOAMY MEDIUM SAND
- SL 7 0"-23" MEDIUM BROWN LOAMY FINE SAND  
23"-45" TAN GRAY LOAMY MEDIUM SAND  
53"-68" GRAY GRAVELLY LOAMY MEDIUM SAND

TREES TYP.

36"

SL 5

SL 4

SL 3

SL 2

SL 1

SL 6

SL 7

SL 4

SL 3

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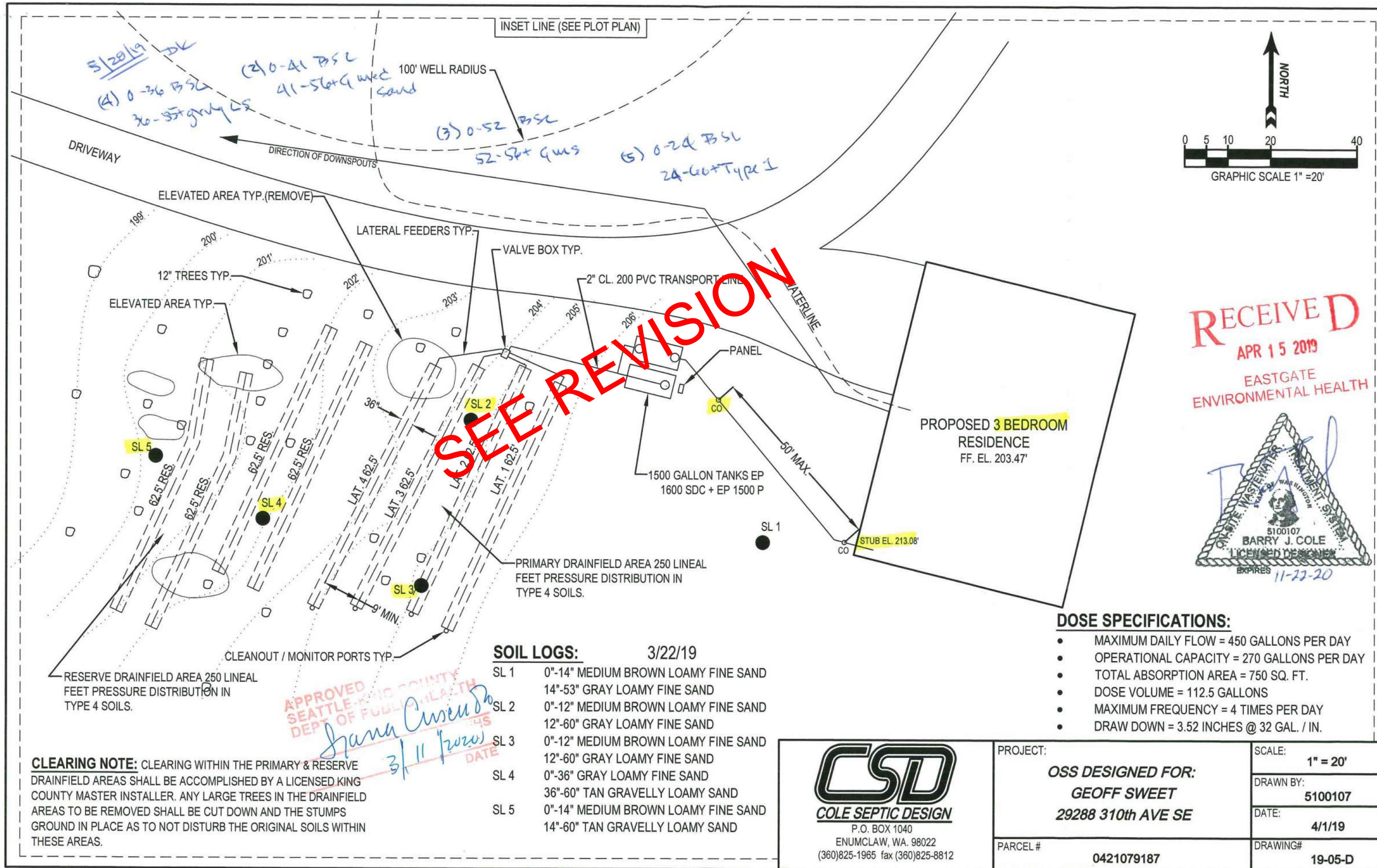
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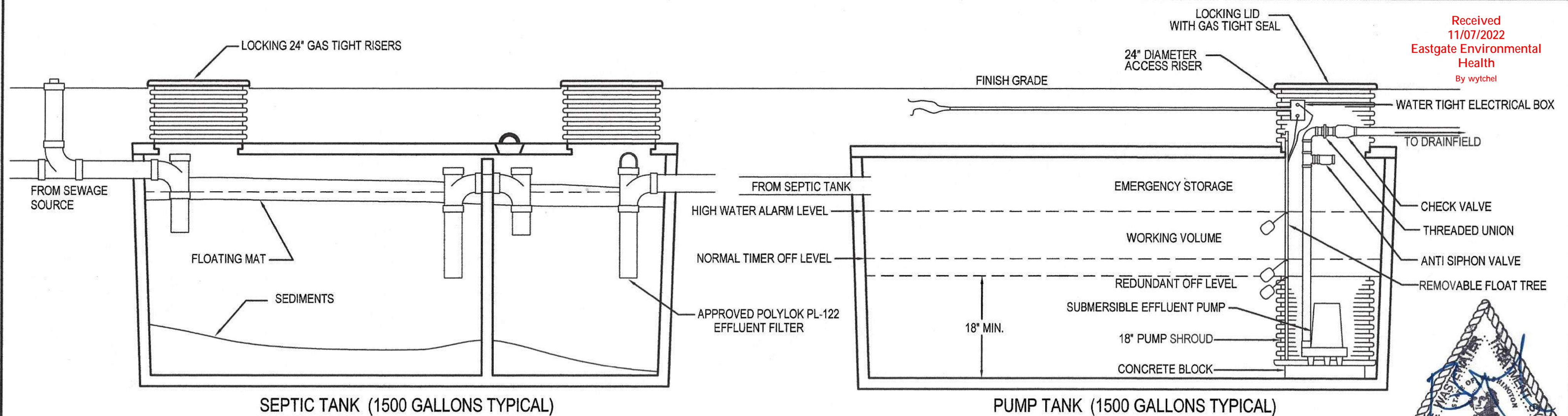
SL 1







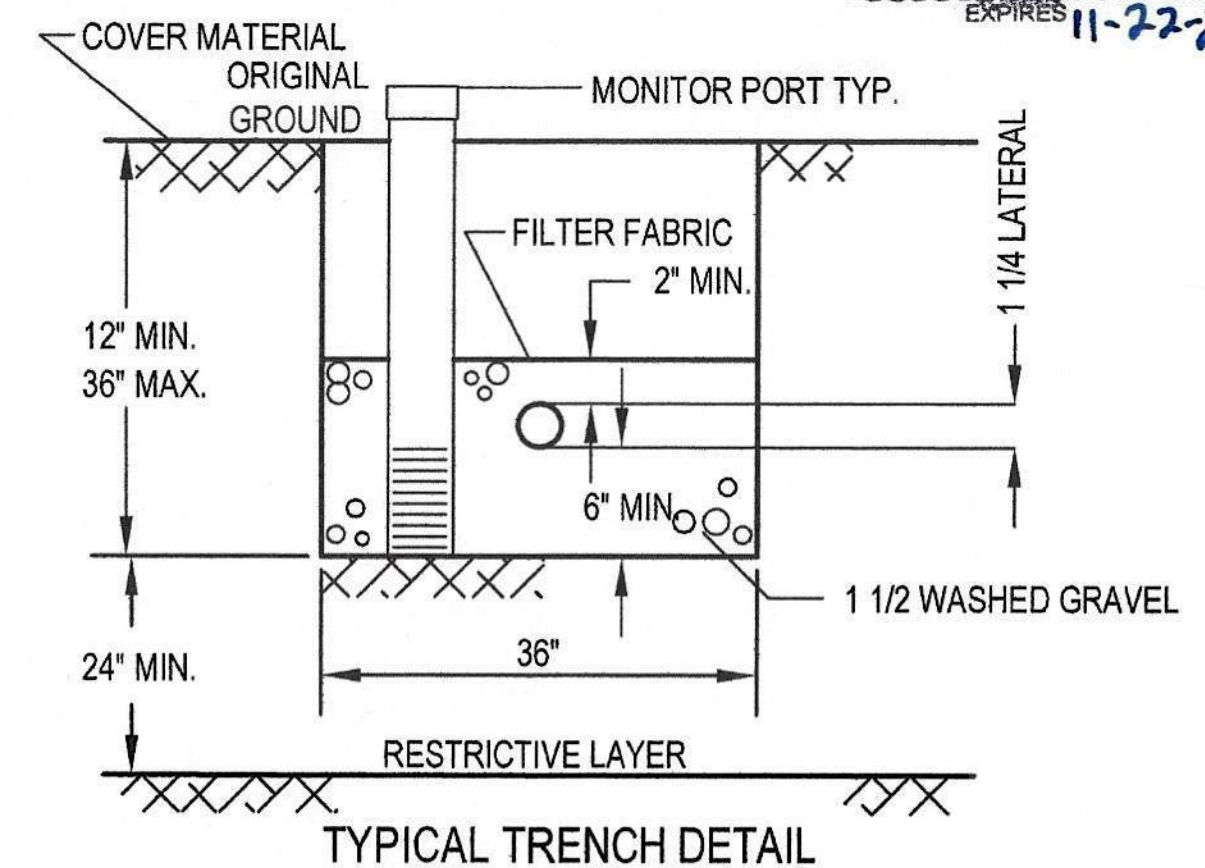
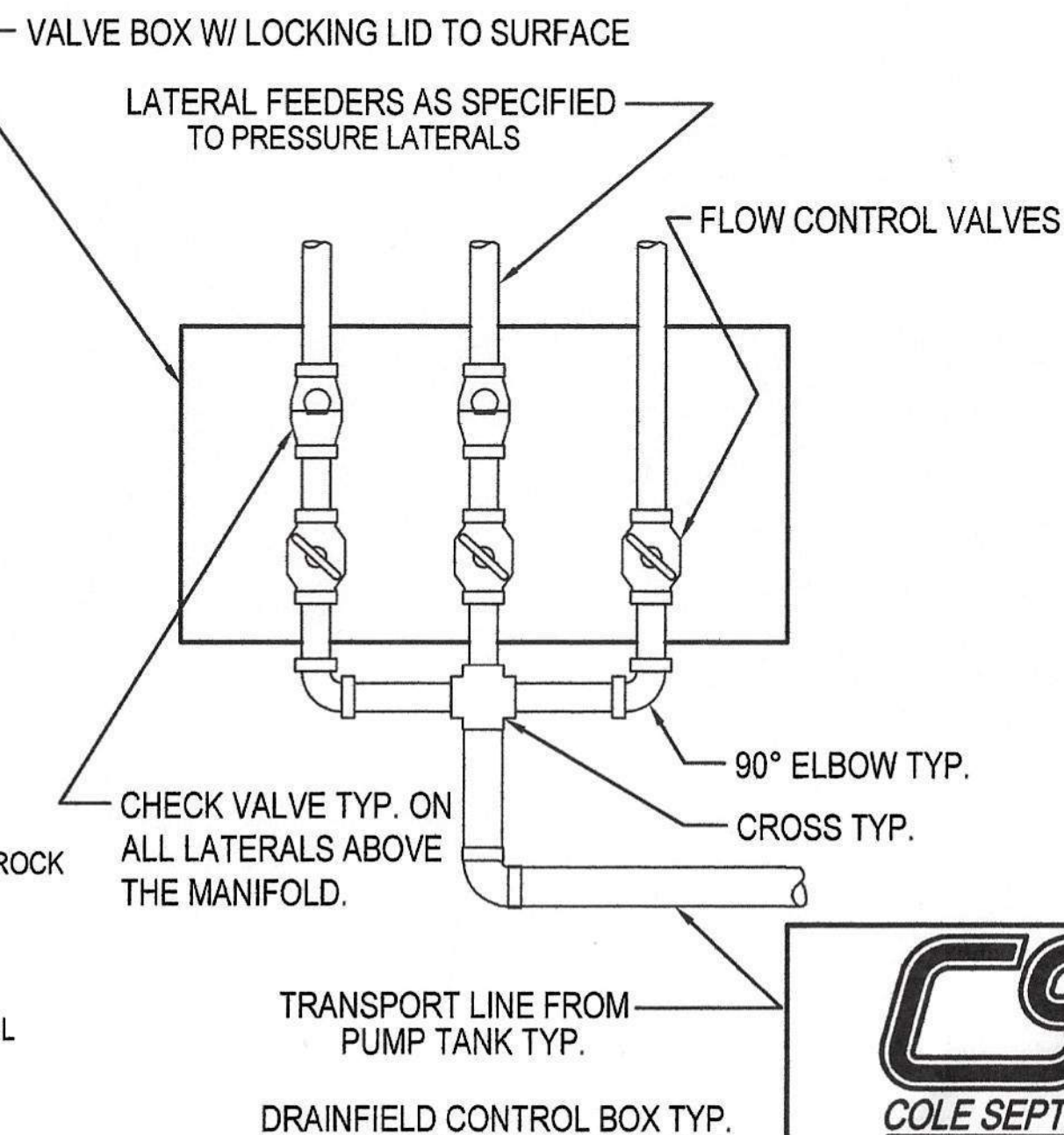
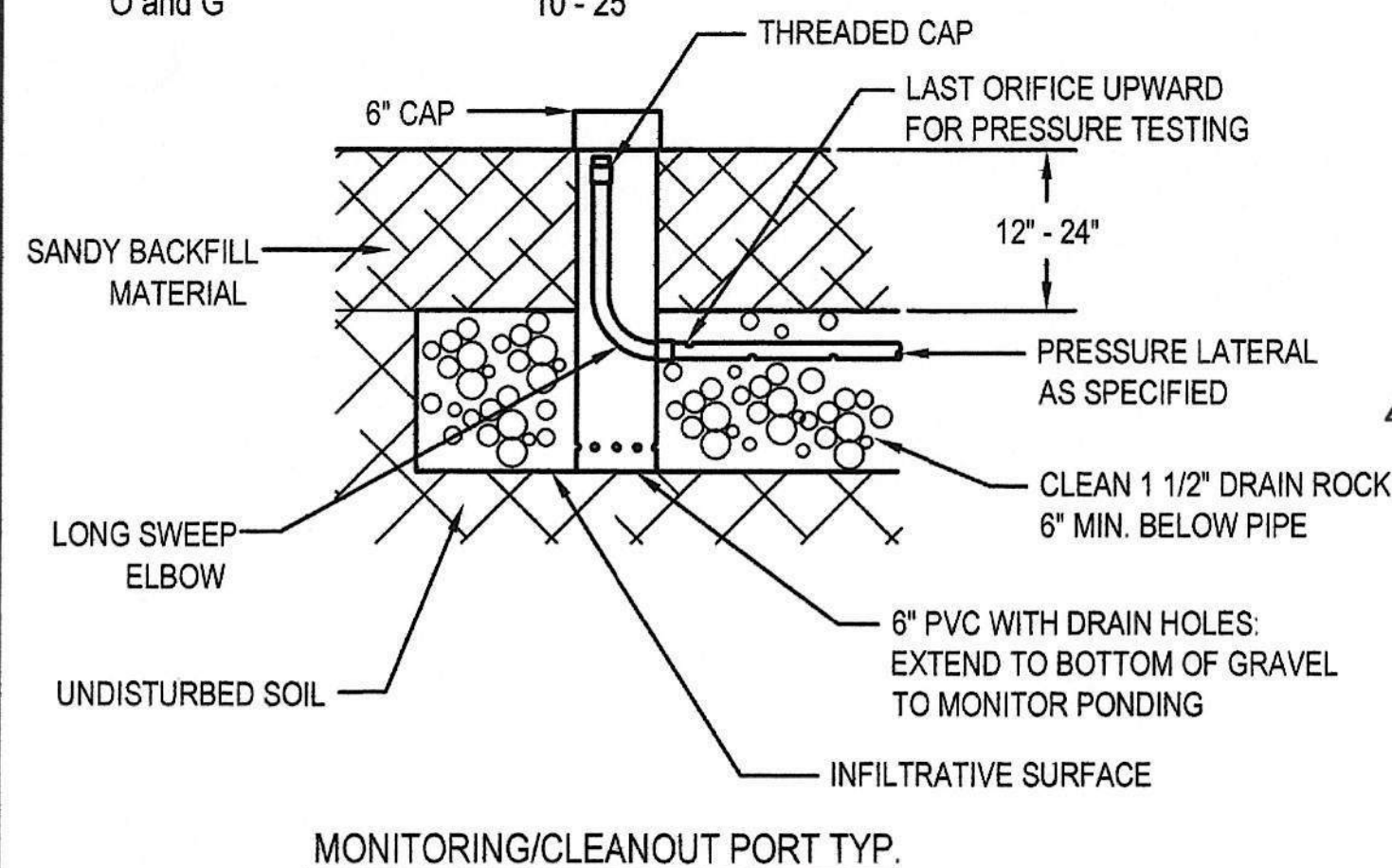
Received  
11/07/2022  
Eastgate Environmental  
Health  
By wytchel



**NOTE:**  
THIS SYSTEM WAS DESIGNED FOR RESIDENTIAL  
SEWAGE STRENGTH ONLY. THE FOLLOWING ARE PARAMETERS  
FOR RESIDENTIAL SEWAGE STRENGTH:

**TABLE 13.08-1 RESIDENTIAL SEWAGE STRENGTH PARAMETERS**

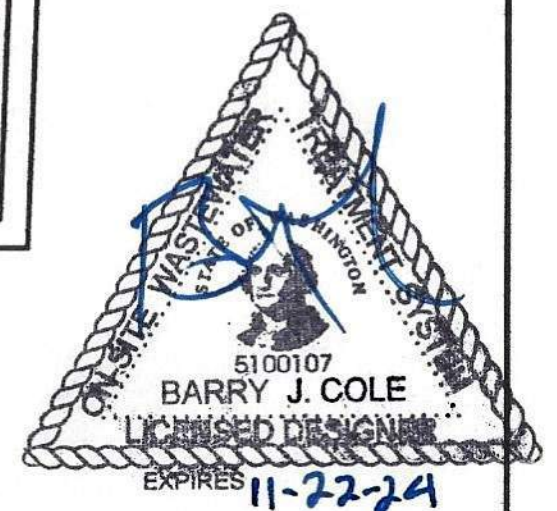
PARAMETER	SEPTIC TANK EFFLUENT RANGE (mg/L)
BOD	130 - 230
CBOD	APPROXIMATELY 108 - 191
TSS	49 - 150
O and G	10 - 25



**CSD**  
**COLE SEPTIC DESIGN**  
P.O. BOX 1040  
ENUMCLAW, WA. 98022  
(360)825-1965 fax (360)825-8812

PROJECT:  
**TYPICAL DETAILS**  
**GEOFF SWEET**  
**29288 310th AVE SE**  
PARCEL #  
**0421079187**

SCALE:  
**NONE**  
DRAWN BY:  
**5100107**  
DATE:  
**RE: 10/12/22**  
DRAWING#  
**19-05-D**





GENERAL NOTES:

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SEATTLE KING COUNTY HEALTH DEPT. TITLE 13, ON-SITE SEWAGE CODE.
  - IT SHALL BE THE SOLE RESPONSIBILITY OF THE CLIENT/HOMEOWNER TO BACKFILL OR COVER ALL THE SOIL TEST PITS ON THIS PROPERTY AFTER THE HEALTH DEPT. HAS REVIEWED THE SOILS.
  - EXTREME CARE SHALL BE TAKEN NOT TO DISTURB THE NATURAL SOILS IN THE DRAINFIELD AREA PRIOR TO OR AFTER THE INSTALLATION OF THE SYSTEM.
  - ALL DOWNSPOUT AND FOOTING DRAINS SHALL BE DIRECTED AWAY FROM THE DRAINFIELD AREA AND MAINTAIN THE REQUIRED SETBACKS FROM THE SYSTEM.
  - ALL WATER LINES SHALL MAINTAIN A 10-FOOT SETBACK FROM THE DRAINFIELD AREA.
  - THERE SHALL BE NO CUTS DOWN GRADIENT OF THE DRAINFIELD AREA UNLESS THE DESIGNER HAS ENSURED THAT THE PROPER SETBACKS CAN BE MAINTAINED FROM THE CUT TO THE DRAINFIELD AREA!
  - A MINIMUM OF 12" OF SOIL COVER AND MAXIMUM OF 22" IS ALLOWED OVER THE TOP OF THE WASHED ROCK IN TRENCHES.
  - BACKFILLING OF ALL ONSITE SEWAGE DISPOSAL SYSTEMS MUST BE COMPLETE BY A LICENSE INSTALLER WITHIN 30 DAYS FROM APPROVAL OF SEATTLE KING COUNTY HEALTH DEPARTMENT.
  - THERE SHALL BE AN ALARM INSTALLED TO ALERT HOME OWNER OF SYSTEM MALFUNCTION.
  - ALL PROPERTY LINES ARE PER PROPERTY OWNER. THE COLE SEPTIC DESIGN, INC. TAKES NO RESPONSIBILITY FOR THEIR ACCURACY.
- SEPTIC TANK NOTES:**  
THE SEPTIC TANK SHALL BE 1500 EP 1600 SDC GALLONS  
THE DRAINFIELD LENGTH SHALL BE 250 FEET  
THE TRENCH BOTTOMS SHALL BE NO DEEPER THAN 36 INCHES  
THE TRENCH SPACING SHALL BE NO LESS THAN 9' On Center FEET
- PUMP NOTES:**  
TANK SIZE 1500 EP 1500 SSC GALLONS  
PUMP CYCLE 3 @ 150 GAL/DOSE  
CONDITIONS: FLOW 50.15 GPM - TDH 20.8 FT  
MANUFACTURER: GOULDS MODEL NO. WE07H

PRESSURE DISTRIBUTION DESIGN WORKSHEET

DESIGN NETWORK:

DAILY DESIGN FLOW= (# BEDROOMS) X (FLOW/BEDROOM) = 450 GAL  
APPLICATION RATE BASED ON SOIL TYPE = 0.6 GPD/FT  
REQUIRED ABSORPTION AREA = 750 SQ. FT  
(REQUIRED ABSORPTION AREA= DAILY DESIGN FLOW/APPLICATION RT.)  
TRENCH/BED WIDTH = 3 FT  
TOTAL TRENCH/BED LENGTH = 250 FT

NETWORK CONFIGURATION:

LATERAL LENGTH = 50' FT # of LATERALS= 5  
LATERAL SPACING = 9 FT On Center  
TRANSPORT PIPE LENGTH = 85 FT  
TRANSPORT LINE DIAM. = 2 IN  
MANIFOLD LENGTH = 4 TYP. FT  
CHOOSE AN ORIFICE SPACING = 3' FT (36")  
CALCULATE THE NUMBER OF ORIFICES = 17 ORIFICES  
(LATERAL LENGTH DIVIDED BY ORIFICE SPACING) = 85 TOTAL # of ORIFICES

SELECT LATERAL DIAM. FROM APPENDIX 1 OF PRESSURE DIST. GUIDELINES:

(MAXIMUM LATERAL LENGTH)  
ORIFICE DIAM (d) LATERAL DIAM.(D) ORIFICE SPAC. (Y) SCH40 CLASS200  
3/16 IN 1.25 IN 3 FT 60 FT 69 FT  
CHOSEN PIPE CLASS = CL. 200 USE CL. 200 PVC  
CHOSEN ORIFICE DIAM. = 3/16 IN  
LATERAL DIAM. = 1.25 IN  
ORIFICE SPACING = 3 FT (36")

SELECT MANIFOLD DIAMETER:

CALCULATE ORIFICE DISCHARGE RATE FROM TABLE IN APPENDIX 2  
ORIFICE DISCHARGE RATE = .59 GPM  
CACULATE LATERAL DISCHARGE RATE = 10.03 GPM  
USE TABLE 1 TO DETERMINE ACCEPTABLE MANIFOLD DIAMETER  
ACCEPTABLE MANIFOLD DIAMETER = 3 IN

DESIGN OF PRESSURIZATION SYSTEM:

DETERMINE DOSE VOLUME BASED ON SOIL TYPE  
A. RECOMMENDED DOSING FREQUENCY = 3 DOSES PER DAY  
RECOMMENDED DOSE VOLUME = 150 GAL  
(DESIGN FLOW/DOSING FREQUENCY)  
B. DOSE VOLUME BASED ON DOSE VOLUME/PIPE VOID RATIO = 138.48 GAL

REQUIRED DOSE VOLUME = (4) X (INTERIOR VOLUME OF LATERALS + INTERIOR VOLUME OF MANIFOLD + INTERIOR VOLUME OF TRANSPORT LINE)  
FEEDERS = 77 L.F. = 65 L.F. DRAINS = 5.98 GAL.  
4 X ( 23 GAL + 0 GAL + 5.64 GAL ) = 138.48 GAL  
REQUIRED DOSE VOLUME = 150 GAL. USE 3 TIMED DOSES PER DAY  
DETERMINE REQUIRED PUMP DISCHARGE CAPACITY = 50.15 GPM  
DISCHARGE RATE = LATERAL DISCHARGE RATE TIMES THE NO. OF LATERALS

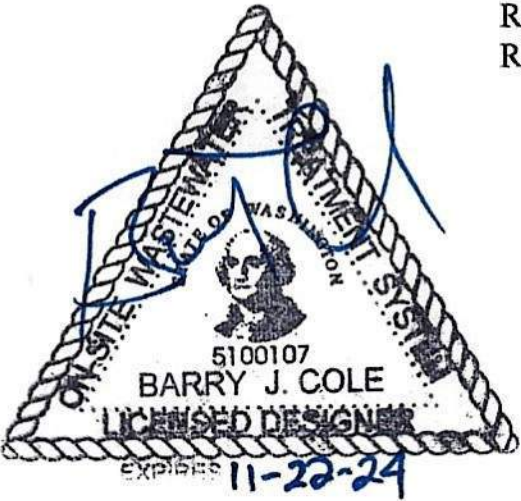
CALCULATE TOTAL FRICTION LOSSES IN NETWORK:

TRANSPORT LINE FRICTION LOSSES = (USE TABLE OR EQUATION IN APPENDIX 3)  
= 2.8 FT  
PIPE MATERIAL PIPE DIAMETER FLOW (GPM) PIPE LENGTH FICTION LOSS IN PIPE  
CL. 200 2" 50.15 85' 2.8'

MANIFOLD AND LATERAL FRICTION LOSSES = 4 FT. TYPICAL  
TOTAL ELEVATION LIFT = 12 FT

DETERMINE TOTAL DYNAMIC HEAD:

RESIDUAL PRESSURE = 2 FT  
TRANSPORT LINE FRICTION LOSSES = 2.8 FT  
MANIFOLD AND LATERAL FRICTION LOSSES = 4 FT (TYP.)  
TOTAL ELEVATION LIFT = 12 FT  
TOTAL DYNAMIC HEAD = 20.8 FT  
REQUIRED CAPACITY = 50.15 GPM, TOTAL DYNAMIC HEAD = 20.8 FT  
REQUIRED PUMP = GOULDS WE07H



PROJECT:	<b>TYPICAL DETAILS</b> <b>GEOFF SWEET</b> <b>29288 310th AVE SE</b>	SCALE:	<b>NONE</b>
		DRAWN BY:	<b>5100107</b>
		DATE:	<b>RE: 10/12/22</b>
PARCEL #	<b>0421079187</b>	DRAWING#	<b>19-05-D</b>

Received  
11/07/2022  
Eastgate Environmental  
Health  
By wytchel



Public Health - Seattle and King County  
Site Design Application Form for Individual On-Site Sewage System (OSS)  
(Submit 5 copies of application with 4 copies of plans)

Record I.D. Number  
ON **0209947**  
Department Use Only

Approximate  
Site Address:

29288 310th Ave SE

OFFICE COPY

ATTACH A DETAILED ROUTE/ DIRECTION  
MAP FOR LOCATING THE PROPERTY.

Name and address of property owner

See Applicant

Applicant  
Name

Sweet

Geoff

Last

First

Street Address

27805 217th Ave SE

City-Zip Code

Maple Valley 98038

Phone

425-205-0258

Designer

Barry Cole

Street Address

PO Box 1040

City-Zip Code

Enumclaw 98022

Phone

360-825-1965

THIS IS NOT A PERMIT

PROPERTY INFORMATION:

Legal Description Attached ☐

Parcel # (APN) 0 4 2 1 0 7 9 1 8 7 Section: 0 4

Township: 2 1 Range: 0 7

Subdivision Name:

Lot: Block:

Property Size 8 7 1 2 0 0 Sq. ft. Acreage: 20

Rural Area ☒ Urban Area ☐

Distance from property line to nearest sewer: 3 3 0 +

Water Supply ☒ (IP) I = Individual ☐ Group A Supply ☐ Group B Supply

Public Water Supply Name: Private Well

ID#

Sensitive Area: ☒ (Y?N) If yes, specify ☐ (L,W,O) L = Landslide W = Wetlands ☐ = Other See CAD

SYSTEM INFORMATION:

New System ☒ Repair Design ☐ Correction of OSS Failure? ☐ Y?N Detailed Plans Attached (4 sets) ☒ Y?N

Type of Building - - S F SF = Single Family MF = Multiple Family COMM = Commercial INST = Institutional

Type of System Proposed: - - - P D G = Gravity GP = Gravity with pump M = Mound SF = Sand Filter

PD = Pressure Distribution HT = Holding Tank CT = Composting Toilet E = Experimental ☐ = Other

Dates Soils Logged: 0 3 2 2 1 9 Soils Data Attached: (Min. 4/lot) ☒ Y?N

Depth to Watertable or Restrictive Layer: 6 2 Maximum Slope in Drainfield/Reserve Area 0 8 %

CALCULATIONS:

Number of bedrooms: 3 Total Gallons/Day (450 minimum): 4 5 0 Gal. Soil Texture Type (1A-5) 4

Application Rate: .6 Gallons/Sq. ft. Total Absorption Area: 0 7 5 0 Sq. ft. Trench Width 36 inches

Total Drainfield Length: 2 5 0 Ft. Septic Tank Size: 1 5 0 0 Gal. Garbage Grinder ☒ N Y?N

Pump Chamber Size (if needed) 1 5 0 0 Gal. Trench Depth (min/max): 1 2 / 3 6 inches

I understand that failure to comply with the Code of King County Board of Health Title 13 may result in the disapproval of the sewage system being proposed in this application. Non-compliance may lead to revocation of my Designer's Certificate of Competency and/or appropriate legal action by the Health Department.

Designer's Signature:

K.C. ID#

D 0 0 8 4

Date: 4/1/19

FOR HEALTH DEPARTMENT USE ONLY:

NOTE: SYSTEM MUST BE INSTALLED BY A KING COUNTY CERTIFIED INSTALLER UNLESS OTHERWISE PROVIDED BY CODE

APPROVED (date):

3-11-2020

BY:

Jana Cusick

Comments

Water Quality & Quantity good

see attached cover letter

☒ Pre-construction meeting required between designer, installer, builder prior to permit issuance

APPROVAL OF THIS DESIGN APPLICATION IS BASED SOLELY ON INFORMATION PROVIDED IN THIS APPLICATION AND DOES NOT CONSTITUTE PERMISSION TO BEGIN CONSTRUCTION OF THE PROPOSED SEWAGE DISPOSAL SYSTEM OR ANY OTHER IMPROVEMENTS ON THE SITE. THIS APPROVAL SHALL NOT BE CONSIDERED AN ASSURANCE, EITHER EXPRESSED OR IMPLIED, THAT DEVELOPMENT PERMITS FOR THE SITE WILL BE ISSUED.

THIS APPLICATION EXPIRES TWO YEARS FROM DATE OF APPROVAL.

DISAPPROVED (date):

BY:

See attached Site Deficiency Sheet.

Any person aggrieved by any decision or final order of the Health Officer may file a written application for appeal to the Health Officer within 60 calendar days of the date of the above decision. (Title 13, K.C.B.O.H. Chapter 13.12 - Sewage Review Committee). CS 13.15.97 Rev.7/21/00

APR 15 2019

EASTGATE  
ENVIRONMENTAL HEALTH

RECEIVED



**Eastgate Environmental Health Services**

14350 SE Eastgate Way  
Bellevue, WA 98007-6458

**206-477-8050** Fax 206-296-9792

TTY relay: 711

www.kingcounty.gov/health

**Public Health**  
Seattle & King County



*Water Quality  
& Quantity  
received 2/25/2020*

May 29, 2019

Barry Cole  
PO Box 1040  
Enumclaw, WA 98022

**Re: Preliminary Well Site Approval – NEW Construction Individual Water Well**

**Address:** 29288 310<sup>th</sup> Ave SE  
**Parcel No:** 042107-9187  
**Owner:** Geoff Sweet

**Activity:** ON0209947

**CAUTION:** This Approval does NOT demonstrate legal “available water” per Chapters RCW 19.27.097 and RCW 58.17.010

**Well Location:** 170 feet south from the north line and 220 feet east from the west line

Dear Mr. Cole:

This **New Individual Potable Well Site Preliminary Approval** for the above referenced well has been completed. The **individual private** domestic water supply has been approved to serve one residential unit at the well location described above and authorizes you to contact a certified well driller to drill the well.

Please be advised that review of this application for a permit-exempt well is consistent with Board of Health Code Title 13, 13.04.07 B and Title 12, 12.24.010. This review is based on minimum lot size requirements, well head protection, minimum water quality standards, and minimum water quantity requirements as specified in Titles 12 and 13.

**If this property is located within the City of Enumclaw water service area, you are advised to consult with the King County Department of Land Services to determine if a private well is allowable as your drinking water source prior to well construction.**

In order to obtain **FINAL** approval of the Well Source Site Application the following must be completed;

- The **WELL** must be drilled and the following must be provided to this office;
- Copy of the Well Log – **2 hour pump test required** (air tests and bailer tests not accepted). If the pump test results in a flow rate of **5 gpm or less**, a 4-hour pump test and proof that well produces at least 400 gallons per day is required.
- Satisfactory Nitrate Analysis – **MCL 10 mg/l**
- Satisfactory Bacteriological Analysis – (2 samples required – may be collected the same day)
- Results of the Arsenic Analysis – **MCL .01 mg/l or 10 ppb**
- Notarized and recorded Private Well Declaration of Covenant (the language on the draft covenant is satisfactory).

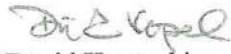
May 29, 2019  
Barry Cole  
Page 2

You are advised that the above information must be fulfilled by **November 30, 2019**. If this is not accomplished within the designated time period, the application will be disapproved and a new application will be required.

Any new or revised application submittal, including any resubmittal of a previously-approved application that has expired, must be accompanied by the application review fee in effect at the time of submittal. Each application will be reviewed for conformance with rules and regulations in effect at the time of submittal.

If you have any questions, please contact me at [david.koperski@kingcounty.gov](mailto:david.koperski@kingcounty.gov) or at (206) 477-8071.

Sincerely,



David Koperski  
Health and Environmental Investigator III  
Community Environmental Health

cc: Geoff Sweet - Owner

<p><b>Note:</b> Please return this letter with any submission of materials to Public Health. This helps us match the resubmission with your previous application.</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------



**King County**  
**Department of Permitting**  
**and Environmental Review**  
35030 SE Douglas St., Ste. 210  
Snoqualmie, WA 98065-9266  
**206-296-6600** TTY Relay: 711  
www.kingcounty.gov

April 2, 2018

Geoff Sweet  
27805 217<sup>th</sup> Avenue Southeast  
Maple Valley, Washington 98038

**RE: Critical Areas Designation CADS18-0016, Parcel 042107-9187**  
**Status: Complete**

Dear Mr. Sweet:

Your property was recently reviewed for a Critical Areas Designation. Our review consisted of a site visit and an in-office review of existing background data. The result of our study is that we have determined that your parcel is host to the critical areas discussed separately below. Specific impacts to development on your parcel are also discussed.

Please note that this Designation is valid only for part of the parcel, as shown on the attached site plan. Other critical areas not discussed here may be present on your property outside the area of this review.

The determinations reported in this letter as to the existence, location, and classification of critical areas and critical area buffers are effective for five years from the date of this letter if there has been no change in site conditions. The Department of Permitting and Environmental Review shall rely on these determinations of the existence, location and classification of critical areas and critical area buffers in its review of complete applications for permits or approvals filed for the subject development site or parcel within five years after the letter is issued. If you do not plan to develop your property soon after receiving this letter, it may be in your interest to contact us to see if any of the conclusions in this letter have changed or are no longer valid.

**Critical Aquifer Recharge Area (21A.24.311 to 21A.24.316)**

Your parcel is within a Category I and a Category II Critical Aquifer Recharge Area (CARA). However, because your site is greater than one acre in size, no restrictions apply for normal residential development.

**Steep Slope Hazard Area (21A.24.310)**

Your parcel contains steep slopes. Steep slopes are defined as those slopes that exceed forty percent inclination (about 21 degrees) and have a vertical elevation change of at least ten feet. The

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buffer required between the steep slope and any proposed development (which is to remain unaltered native vegetation), without providing a geotechnical study, is generally 50 feet. Structures must maintain an additional 15-foot building setback beyond the buffer. Where a geotechnical study confirms that the slope is stable and that development will not create a hazard, the buffer may be reduced. For slopes that are less than 20 feet high, the requirements for a buffer and setback may be eliminated completely if a geotechnical study finds that the slope is stable and that the development will not adversely affect (or be affected by) the slope.

The steep slopes are roughly as shown on the attached site plan. Please note that we do not have access to data that are sufficiently accurate to locate precisely the steep slopes and determine their height. For that reason, the attached map should be thought of as an approximation only. Depending upon the nature of a future building proposal, a detailed topographic survey by a licensed surveyor may be advisable or even required.

In your case, a very small steep slope hazard area is located on the southern end of the evaluation area. Elevation heights in this area are about 15 feet. If this area is near the proposed development, buffers may be eliminated completely with a geotechnical study.

#### **Erosion Hazard Area (21A24.220)**

Erosion Hazard Areas are those areas that are underlain by soils that may be conducive to severe erosion when exposed. For typical single-family residence construction projects, the presence of an erosion hazard poses little impact to development proposals. There is no buffer or building setback required, and there is no impact to the proposed locations of structures, water wells, on-site septic systems, or new pavement. There may be some extra attention given to controlling storm water runoff and erosion during construction and to seasonal clearing restrictions, but this would be considered during building permit review. However, for projects that would propose clearing more than 7,000 square feet of land you should confirm compliance with Chapters 9.04 and 16.82 of the King County Code. For projects that propose clearing more than 15,000 square feet of land, you should confirm compliance with KCC 21A24.220.

#### **Closure**

When you are applying to the Health Department for septic system design approval or water well site approval, please include a copy of this letter and any attachments with your application to them. Similarly, a copy should be included with any building permit application. For the site plan attached to this letter, note that the critical areas have not been surveyed. Therefore, their location is not precise and a detailed survey may be required in the future depending upon the nature of your development proposal.

The purpose of this review is to determine the location and classification of critical areas on your site that might affect your proposed development activities, and is not an approval of existing or

---

CADS18-0016  
April 2, 2018  
Page 3 of 3

proposed development. Additional reviews, including but not limited to drainage, clearing, grading, compliance with critical area codes, and fire flow may occur during the building permit review process.

A clearing and grading permit would be required in order to clear land for access to a well site within critical areas prior to obtaining a building permit.

Please feel free to contact me at 206-263-6950 or [Chris.Holcomb@kingcounty.gov](mailto:Chris.Holcomb@kingcounty.gov) if you have any questions.

Sincerely,

A handwritten signature in dark ink, appearing to be 'Chris Holcomb', followed by a long horizontal line.

Chris Holcomb, Environmental Scientist II-Ecologist

Attachment: Site Map

---

## CADS18-0016 Site Map

Critical Areas located within the evaluation area:

- Category I and II CARA
- Erosion Hazard Area
- Steep Slope Hazard Area

Evaluation Area

Parcel Boundary

Category I CARA

Category II CARA

Steep Slope Hazard Area

Erosion Hazard Area

APPROVED

By: 

KC Critical Area Review

DATE

3/2/18

The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a survey product. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

Date: 3/27/2018

Notes: Map not to scale.




King County  
GIS CENTER



WATER WELL REPORT  
STATE OF WASHINGTON

START CARD NO. WE35544  
UNIQUE WELL ID BME165  
WATER RIGHT PERMIT NO

(1) OWNER NAME: SWEET, GEOFF ADDRESS: 27805 217TH AVE SE MAPLE VALLEY, WA 98038  
(2) LOCATION OF WELL: County KING NW 1/4 NE 1/4 SEC 4 TWP 21N R 7E  
(2a) STREET ADDRESS OF WELL (or nearest address): XXX 310TH AVE SE PARCEL #0421079187

(3) PROPOSED USE: DOMESTIC		(10) WELL LOG OR DECOMMISSIONING PROCEDURE DESCRIPTION	
(4) TYPE OF WORK: NEW WELL			
METHOD: ROTARY			
(5) DIMENSIONS: Diameter of well 6 inches		MATERIAL	
Drilled 401 feet. Depth of completed well 401 ft.		FROM TO	
		BROWN BOULDERS, COBBLES, GRAVEL, SAND, SILT 0 19	
		GRAY SANDSTONE 19 25	
		DARK GRAY SHALE 25 80	
		DARK GRAY SANDSTON 80 104	
		GRAY SANDSTONE 104 107	
		GREENISH GRAY SANDSTONE 107 112	
		DARK GRAY SHALE, SOME WATER 112 114	
		GRAY SANDSTONE 114 144	
		DARK GRAY SHALE 144 200	
		GRAY SANDSTONE 200 265	
		LIGHT BROWNISH GRAY SANDSTONE 265 290	
		LIGHT GRAY SANDSTONE 290 347	
		LIGHT BROWNISH GRAY SANDSTONE 347 370	
		LIGHT GRAY SANDSTONE 370 377	
		DARK GRAY SANDSTON 377 401	
(6) CONSTRUCTION DETAILS			
Casing instld: 6 " Diam. From +1 ft. to 401 ft.			
Welded <input checked="" type="checkbox"/> " Diam. From ft. to ft.			
Liner <input checked="" type="checkbox"/> 4.5 " Diam. From 7 ft. to 401 ft.			
Threaded <input type="checkbox"/>			
Perforations: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Type of perforator used			
Size of perforations in. by			
120 perforations from 323 ft. to 401 in.			
perforations from ft. to in.			
perforations from ft. to in.			
Screens: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Manufacturer's Name:			
Type Model No.			
Diam Slot size from ft. to ft.			
Diam Slot size from ft. to ft.			
Gravel packed Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Gravel packed from Size of gravel? ft. to ft.			
Surface seal: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Material used in seal BENTONITE CHIPS To what depth? 18 ft.			
Did any strata contain unusable water? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Type of water? Depth of Strata ft.			
Method of sealing strata off			
(7) PUMP: Manufacturer's Name			
Type H. P.			
(8) WATER LEVELS: Surface elev above mean sea level ft.			
Static level 33 below top of well Date 08/07/19			
Artesian pressure lbs. Per sq. in. Date			
Artesian pressure is controlled by			
(9) WELL TESTS: Pump test made? By Whom		Work Started 08/01/19 Completed: 08/07/19	
Yield gal./min with ft. drawdown after hrs.			
Yield gal./min with ft. drawdown after hrs.			
Yield gal./min with ft. drawdown after hrs.			
Recovery data:		WELL CONSTRUCTOR CERTIFICATION:	
Time Wtr Lvl. Time Wtr Lvl. Time Wtr Lvl.		I constructed and/or accept responsibility for construction of	
		this well, and its compliance with all Washington well construction	
		standards. Materials used and the information reported	
		above are true to my best knowledge and belief.	
Date of test:		Name: RICHARDSON WELL DRILLING COMPANY INC.	
Bailer test gal./min with ft. drawdown after hrs.		Address: P. O. BOX 44427 TACOMA, WA 98444	
Airtest 4 gal./min stem set at 400 ft. for 1.5 hrs. (Signed) 		Lic No. 2432	
Artesian flow gal./min Date		(Well Driller)	
Temperature of water Was chemical analysis made? NO		Contractor's Registration No. RICHAW*3210B	
		DATE 8/9/19	

# RICHARDSON WELL DRILLING

## Aquifer Test Data

Well ID # BME-165

Owner Geoff Sweet  
XXX 310th Ave SE

Pumping Well

Pump On 8/15/19 1:45pm  
Date Time

Pump Off 08/15/19 5:45pm  
Date Time

Reference Static Level 27' 8" Feet 1Hp-10 Pump Size

Recorded By	Time			Water Levels			
	Date	Clock	Elapsed Time Since Start	Reading In Gpm	Depth To Water	Drawdown	
Patrick	8/15/2019	1:45		16	27' 8"		
		1:47	2 Min	16	44' 2"	16' 6"	
		1:49	4 Min	16	54'	26' 4"	
		1:51	6 Min	16	67'	39' 4"	
		1:53	8 Min	16	78' 4"	50' 8"	
		1:55	10 Min	16	89'	61' 4"	
		2:00	15 Min	16	102' 2"	74' 6"	
		2:05	20 Min	16	114'	86' 4"	
		2:10	25 Min	16	127'	99' 4"	
		2:15	30 Min	16	140'	112' 4"	
		2:20	35 Min	16	150'	122' 4"	
		2:25	40 Min	16	160'	132' 4"	
		2:30	45 Min	16	167'	139' 4"	
		2:35	50 Min	15	171'	143' 4"	
		2:40	55 Min	15	179'	151' 4"	
		2:45	1 Hr	15	183'	155' 4"	
		2:50	1 Hr 5 Min	15	194'	166' 4"	
		2:55	1 Hr 10 Min	15	198' 6"	170' 10"	
		3:00	1 Hr 15 Min	15	198' 6"	170' 10"	
		3:10	1 Hr 25 Min	15	207' 6"	179' 10"	
		3:20	1 Hr 35 Min	13	215'	187' 4"	
		3:30	1 Hr 45 Min	13	217' 8"	190'	
		3:40	1 Hr 55 Min	13	224'	196' 4"	
		3:50	2 Hr 5 Min	13	227'	199' 4"	
		4:00	2 Hr 15 Min	12	229' 6"	201' 10"	
		4:15	2 Hr 30 Min	12	233' 6"	205' 10"	
		4:30	2 Hr 45 Min	12	236' 6"	208' 10"	
		4:45	3 Hr	12	239' 2"	211' 6"	
		5:00	3 Hr 15 Min	12	241'	213' 4"	
		5:15	3 Hr 30 Min	12	242'	214' 4"	
		5:30	3 Hr 45 Min	12	244'	216' 4"	
		5:45	4 Hr	12	245'	217' 4"	Recovery
		5:46			242'		
		5:47			241'		
		5:48			236'		
		5:49			220'		
Patrick	8/15/2019	5:50			203'		End





## SPECTRA Laboratories

*...Where experience matters*

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • [www.spectra-lab.com](http://www.spectra-lab.com)


08/20/2019

Richardson Well Drilling  
PO Box 44427  
Tacoma, WA 98444

Project: Geoff Sweet  
Client ID: #1 at Well Head  
Sample Matrix: Drinking Water  
Date Sampled: 08/15/2019  
Date Received: 08/16/2019  
Spectra Project: 2019080448  
Spectra Number: 1

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Coliform Bacteria	Absent		SM 9223
E. coli Bacteria	Absent		SM 9223

SPECTRA LABORATORIES

  
Jeffrey Cooper, Laboratory Manager

an.mkw



## SPECTRA Laboratories

...Where experience matters

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08/20/2019

Richardson Well Drilling  
PO Box 44427  
Tacoma, WA 98444

Project: Geoff Sweet  
Client ID: #2 at Well Head  
Sample Matrix: Drinking Water  
Date Sampled: 08/15/2019  
Date Received: 08/16/2019  
Spectra Project: 2019080448  
Spectra Number: 2

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Coliform Bacteria	Absent		SM 9223
E. coli Bacteria	Absent		SM 9223

SPECTRA LABORATORIES

  
Jeffrey Cooper, Laboratory Manager

jeff@mlk.wa

**SPECTRA Laboratories**

2221 Ross Way - Tacoma WA 98421

(253) 272-4850 www.spectra-lab.com

**COLIFORM BACTERIA ANALYSIS**

Date Sample Collected

8/15/19

Month Day Year

Time Sample Collected

5:45 AM

County

King

Type of Water System (check only one box)

☐ Group A☐ Group B☒ Private Well

Group A and Group B Systems - Provide from Water Facilities Inventory (WFI):

ID# GE OFF SW ee +

System Name or Well Address if Private:

Contact Person:

Day Phone: RICHARDSON WELL DRILLING

Email Address: PO BOX 44427

Client Information: (Print Name and Address) TACOMA, WA 98448

**SAMPLE INFORMATION**

Sample collected by (name): Patrick

Specific location sample collected (well, bath):

at well head

Special Instructions or comments:

**PUBLIC SYSTEMS FILL OUT SHADED AREA** (must check only one box of #1 - 5)1. ☐ Routine Distribution Sample

Chlorinated: Yes \_\_\_ No \_\_\_

Chlorine Residual: Total \_\_\_ Free \_\_\_

2. Repeat Sample (A/P)

(from distribution system after unsat. routine)

Unsatisfactory routine lab number:

3. Ground Water Rule Source Sample

S

Unsatisfactory routine collect date:

☐ Triggered (A/P)☐ Assessment (A/P)

Chlorinated: Yes \_\_\_ No \_\_\_

Chlorine Residual: Total \_\_\_ Free \_\_\_

4. ☐ Surface or GWI Raw Source Water Sample (Enumeration)☐ E. coli ☐ Fecal Filtered Yes \_\_\_ No \_\_\_5. ☐ Sample Collected for Information Only

LAB USE ONLY

**DRINKING WATER RESULTS**

LAB USE ONLY

☐ Unsatisfactory Total Coliform Present and☐ E. coli present ☐ E. coli absent☒ Satisfactory

Replacement Sample Required:

☐ Sample too old (>30 hours) ☐ TNTC☐ Sample Volume☐ Improper Container ☐ Turbid Culture ☐

Bacterial Density Results: Plate Count \_\_\_ /ml. E. coli \_\_\_ /100ml.

Total Coliform \_\_\_ /100ml. Fecal Coliform \_\_\_ /100ml.

Method Code

Date and Time Received:

8-16-19 1107

Date Reported:

8-23-19 1020

Temp: 16.4

Rec'd by: [Signature]

Paid:

Sample Number (DOH number plus five digits)

118 - 37208

**SPECTRA Laboratories**

2221 Ross Way - Tacoma WA 98421

(253) 272-4850 www.spectra-lab.com

**COLIFORM BACTERIA ANALYSIS**

Date Sample Collected

8/15/19

Month Day Year

Time Sample Collected

5:45 AM

County

King

Type of Water System (check only one box)

☐ Group A☐ Group B☒ Private Well

Group A and Group B Systems - Provide from Water Facilities Inventory (WFI):

ID# GE OFF Sweet

System Name or Well Address if Private:

Contact Person:

Day Phone: RICHARDSON WELL DRILLING

Email Address: PO BOX 44427

Client Information: (Print Name and Address) TACOMA, WA 98448

**SAMPLE INFORMATION**

Sample collected by (name): Patrick

Specific location sample collected (well, bath):

at well head

Special Instructions or comments:

**PUBLIC SYSTEMS FILL OUT SHADED AREA** (must check only one box of #1 - 5)1. ☐ Routine Distribution Sample

Chlorinated: Yes \_\_\_ No \_\_\_

Chlorine Residual: Total \_\_\_ Free \_\_\_

2. Repeat Sample (A/P)

(from distribution system after unsat. routine)

Unsatisfactory routine lab number:

3. Ground Water Rule Source Sample

S

Unsatisfactory routine collect date:

☐ Triggered (A/P)☐ Assessment (A/P)

Chlorinated: Yes \_\_\_ No \_\_\_

Chlorine Residual: Total \_\_\_ Free \_\_\_

4. ☐ Surface or GWI Raw Source Water Sample (Enumeration)☐ E. coli ☐ Fecal Filtered Yes \_\_\_ No \_\_\_5. ☐ Sample Collected for Information Only

LAB USE ONLY

**DRINKING WATER RESULTS**

LAB USE ONLY

☐ Unsatisfactory Total Coliform Present and☐ E. coli present ☐ E. coli absent☒ Satisfactory

Replacement Sample Required:

☐ Sample too old (>30 hours) ☐ TNTC☐ Sample Volume☐ Improper Container ☐ Turbid Culture ☐

Bacterial Density Results: Plate Count \_\_\_ /ml. E. coli \_\_\_ /100ml.

Total Coliform \_\_\_ /100ml. Fecal Coliform \_\_\_ /100ml.

Method Code

Date and Time Received:

8-16-19 1107

Date Reported:

8-23-19 1020

Temp: 14.9

Rec'd by: [Signature]

Paid:

Sample Number (DOH number plus five digits)

118 - 37037209



**SPECTRA LABORATORIES**  
2221 Ross Way, Tacoma Washington 98421 (253) 272-4850  
**INORGANIC CHEMICALS (IOCS) REPORT**

System ID No.:		System Name: Geoff Sweet	
Lab/Sample No: 11837207		Date Collected: 08/15/2019	DOH Source No:
Multiple Source Nos:		Sample Type:	Sample Purpose:
Date Received: 08/16/2019		Date Reported: 08/23/2019	Supervisor: <i>JAC</i>
Date Digested:		Date Analyzed:	Analyst:
County:		Group:	
Sample Location:		Sample Description: 310th Ave Ravensdale	
Send Report To: Richardson Well Drilling PO Box 44427 Tacoma, WA 98444		Bill To: Richardson Well Drilling  <b>Spectra Order #</b> <b>2019080458</b>	

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	Method/Analyst
<b>EPA REGULATED</b>							Trigger ? MCL ?	
4	Arsenic	0.005	mg/l	0.001	0.01	0.01		EPA 200.8 SCJ
5	Barium		mg/l	0.1	2	2		
6	Cadmium		mg/l	0.002	0.005	0.005		
7	Chromium		mg/l	0.01	0.1	0.1		
11	Mercury		mg/l	0.0005	0.002	0.002		
12	Selenium		mg/l	0.005	0.05	0.05		
110	Beryllium		mg/l	0.003	0.004	0.004		
111	Nickel		mg/l	0.04	0.1	0.1		
112	Antimony		mg/l	0.005	0.006	0.006		
113	Thallium		mg/l	0.002	0.002	0.002		
116	Cyanide		mg/l	0.05	0.2	0.2		
19	Fluoride		mg/l	0.2	2	4		
114	Nitrite-N		mg/l	0.5	0.5	1		
20	Nitrate-N	ND	mg/l	0.5	5	10		Easy (1-Re) MK
161	Total Nitrate/Nitrite		mg/l	0.5	5	10		
<b>EPA REGULATED (Secondary)</b>							Trigger ? MCL ?	
8	Iron		mg/l	0.1	0.3	0.3		
10	Manganese		mg/l	0.01	0.05	0.05		
13	Silver		mg/l	0.01	0.1	0.1		
21	Chloride		mg/l	20	250	250		
22	Sulfate		mg/l	10	250	250		
24	Zinc		mg/l	0.2	5	5		
<b>STATE REGULATED</b>							Trigger ? MCL ?	
14	Sodium		mg/l	5				
15	Hardness		mg/l	10				
16	Conductivity		umhos/cm	10	700	700		
17	Turbidity		NTU	0.1	1	1		
18	Color		color units	5	15	15		
26	Total Dissolved Solids		mg/l	150	500	500		
<b>STATE UNREGULATED</b>							Trigger ? MCL ?	
9	Lead		mg/l	0.002				
23	Copper		mg/l	0.2				

**SRL (State Reporting Level):**

**Trigger Level:**

**MCL (maximum contaminant level):**

**ND (Not Detected):**

Indicates the minimum reporting level by the Washington Department of Health (DOH).

DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.

If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

In the results column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.



**SPECTRA LABORATORIES**  
2221 Ross Way, Tacoma Washington 98421 (253) 272-4850  
**INORGANIC CHEMICALS (IOCS) REPORT**

☐ Rush Turn Around  
(Additional 50% Charge)

2019080458

☐ PRIMARY ONLY    ☐ PRIMARY AND SECONDARY    ☒ SPECIFY BELOW

Client Name: <b>RICHARDSON WELL DRILLING</b>	Project Name: <b>Geoff Sweet</b>
Client Address: <b>PO BOX 44427 TACOMA, WA 98448</b>	Date Sampled: <b>8-15-19</b> Time Sampled: <b>5:45 PM</b>
Phone: _____ Email: _____	Sample Location(address): <b>310<sup>th</sup> AVE RAVENSDALE</b>
	Description(ie. well head): <b>at well head</b>

**PUBLIC SYSTEMS ONLY**

Water System ID Number: _____	System Name: _____
System Group Type: (circle one)    A    B    Other: _____	County: _____
<b>Sample Purpose: (check appropriate box)</b> <input type="checkbox"/> RC - Routine/Compliance (satisfies monitoring requirements) <input type="checkbox"/> C - Confirmation (confirmation of chemical result) <input type="checkbox"/> I - Investigative (does not satisfy monitoring requirements) <input type="checkbox"/> O - Other (specify - does not satisfy monitoring requirements)	<b>Sample Composition: (check appropriate box)</b> <input type="checkbox"/> S - Single Source _____ <input type="checkbox"/> B - Blended _____ <input type="checkbox"/> C - Composite _____ <input type="checkbox"/> D - Distribution sample
Sample Collected by: (name) _____	<b>Sample Type: (check one)</b> <input type="checkbox"/> Untreated (raw) <input type="checkbox"/> Treated <input type="checkbox"/> Unknown
Phone Number: _____	

**LAB USE ONLY**

Date/Time Received: <b>8-16-19 1107</b>	Temp: <b>15.9</b> Paid: _____	Lab #: 118 - <b>37207</b>
-----------------------------------------	-------------------------------	---------------------------

	ANALYTE	RESULTS	UNITS	SRL	TRIGGER	MCL
<input checked="" type="checkbox"/>	Arsenic		mg/L	0.0014	0.010	0.010
<input type="checkbox"/>	Barium		mg/L	0.1	2	2
<input type="checkbox"/>	Cadmium		mg/L	0.001	0.005	0.005
<input type="checkbox"/>	Chromium		mg/L	0.007	0.1	0.1
<input type="checkbox"/>	Mercury		mg/L	0.0002	0.002	0.002
<input type="checkbox"/>	Selenium		mg/L	0.002	0.05	0.05
<input type="checkbox"/>	Beryllium		mg/L	0.0003	0.004	0.004
<input type="checkbox"/>	Antimony		mg/L	0.003	0.006	0.006
<input type="checkbox"/>	Thallium		mg/L	0.001	0.002	0.002
<input type="checkbox"/>	Cyanide		mg/L	0.01	0.2	0.2
<input type="checkbox"/>	Fluoride		mg/L	0.5	2	4
<input type="checkbox"/>	Nitrite-N		mg/L	0.1	0.5	1
<input checked="" type="checkbox"/>	Nitrate-N		mg/L	0.5	5	10
<input type="checkbox"/>	Total Nitrate/Nitrite		mg/L	0.5	5	10
<input type="checkbox"/>	Iron		mg/L	0.1	--	0.3
<input type="checkbox"/>	Manganese		mg/L	0.01	--	0.05
<input type="checkbox"/>	Silver		mg/L	0.1	--	0.1
<input type="checkbox"/>	Chloride		mg/L	20	--	250
<input type="checkbox"/>	Sulfate		mg/L	50	--	250
<input type="checkbox"/>	Zinc		mg/L	0.2	--	5
<input type="checkbox"/>	Sodium		mg/L	5	--	--
<input type="checkbox"/>	Hardness		mg/L	10	--	--
<input type="checkbox"/>	Conductivity		umhos/cm	70	--	700
<input type="checkbox"/>	Turbidity		NTU	0.1	--	--
<input type="checkbox"/>	Color		color units	15	--	15
<input type="checkbox"/>	TDS-Total Dissolved Solids		mg/L	100	--	500
<input type="checkbox"/>	Nickel		mg/L	0.005	--	--
<input type="checkbox"/>	Lead		mg/L	0.001	--	--
<input type="checkbox"/>	Copper		mg/L	0.02	--	--

**SRL (State Reporting Level):** The minimum reporting level established by the Washington State Department of Health (DOH).

**Trigger Level:** DOH drinking water response level. Systems with compounds detected at concentrations in excess of this level may be required to take additional samples or monitor more frequently.

**MCL (maximum contaminant level):** If the contaminant amount exceeds the MCL, please contact your regional DOH office to determine follow-up actions

Return Address: Geoff Sweet  
27805 217th Ave SE  
Maple Valley, Wa. 98038

### DECLARATION OF COVENANT INDIVIDUAL WATER SUPPLY

Reference numbers of related documents:  
On page \_\_\_\_ of document \_\_\_\_

Grantor(s) (Last, First, Middle Initial):

1. Sweet, Geoff
2. \_\_\_\_\_
3. \_\_\_\_\_

Additional names on page \_\_\_\_ of document \_\_\_\_

Grantee(s) (Last, First, Middle Initial):

1. The Public
2. \_\_\_\_\_

Additional names on page \_\_\_\_ of document \_\_\_\_

**Legal Description:**

1. Abbreviated form (lot, block, plat name, section-township-range) S 1/2 GL 6 STR 4-21-7 -  
AKA - PCL D KC SP EX #L96M0009 DTD 4-22-96 SEE SURV #9611259005 04-21-07
2. Additional legal description is on page \_\_\_\_ of document \_\_\_\_

Assessor's Property Tax Parcel Account Numbers:  
0421079187

Know all men by these presents that I(we) the undersigned, owner(s) \_\_\_\_ in fee simple of the land described herein, hereby declare this covenant and place same on record.

I(we), am(are) the owner(s) in fee simple of (an interest in) the following described real estate situated in  
King \_\_\_\_\_ County, State of Washington, to wit: **(INCLUDE LEGAL, PARCEL NUMBER &  
ADDRESS)**  
S 1/2 GL 6 STR 4-21-7 - AKA - PCL D KC SP EX #L96M0009 DTD 4-22-96 SEE SURV #9611259005 04-21-07  
0421079187  
Not yet assigned

on which I(we) own and operate a well and waterworks supplying water for private domestic use located on said real estate, to wit: **(PINPOINT THE ACCURATE LOCATION OF THE WELL SITE, FOR EXAMPLE, 125 FEET OF THE SOUTH PROPERTY LINE AND 100 FEET EAST OF THE WEST PROPERTY LINE).**  
170 FEET SOUTH FROM THE NORTH LINE AND 220 FEET EAST FROM THE WEST LINE.