NW ENGINEERS
Engineering & Planning

NW Engineers, LLC
3409 NE John Olsen Avenue
Hillsboro, OR 97124
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McNamee/Miranda M49 Dwelling Storm Drainage Report

June 28, 2021

RE: Miranda M49 – Water Quality Report
13221 NW McNamee Road
Tax Lot 702, Tax Map 2N1W32B

This report deals with the proposed residence to be located on Parcel 2 of Partition Plat No. 2012-047. A proposed single-family residence with a roof area of approximately 1,500 square feet is proposed to be constructed on the lot. Access to the lot will be via a driveway from NW McNamee Road. The paved portion of the driveway area totals approximately 1,000 square feet.

All roof and driveway drainage will be piped to a single lined storm water flow-thru planter facility located on the east side of the residence. This lot is in Soils Group 7B, 7C, 7D - Cascade silt loam, hydrologic group C as reported in the Soil survey of Multnomah County, Oregon, US Department of Agriculture, Soil Conservation Services (see attached). The Geotechnical Report by Geo Pacific Engineering, Inc. **dated March 5, 2021, with an addendum dated June 28, 2021,** recommends that the stormwater treatment facilities be lined with an impermeable barrier and stormwater not be discharged directly to slopes. In their addendum, GeoPacific also refers to the site and grading plans dated June 28, 2021.

Based on the above information and recommendations, we have designed the lined storm water planter facility which will treat the roof and driveway discharges and will limit the discharge rate (under a 25-year storm event) to no more than that which currently occurs from this area. See the attached drawing which shows the following described facilities. The HydroCAD model calculates a pre-developed peak runoff rate of **0.03 cfs** for the 25-year return interval storm event (see attached).

Flow from the driveway areas will be collected in a sumped catch basin to limit the amount of oil and floatables reaching the storm water planter facilities. Roof discharge will be directed directly to the storm water planter facilities.

The storm water planter facilities will be lined with an impermeable membrane. The rock storage area under the growing media will store the runoff for discharge through a perforated pipe to the flow dispersion trench located down slope of the storm water planter facilities. The peak flow to the dispersion trench will be limited by a flow control manhole which will include an orifice structure for flow limitation.

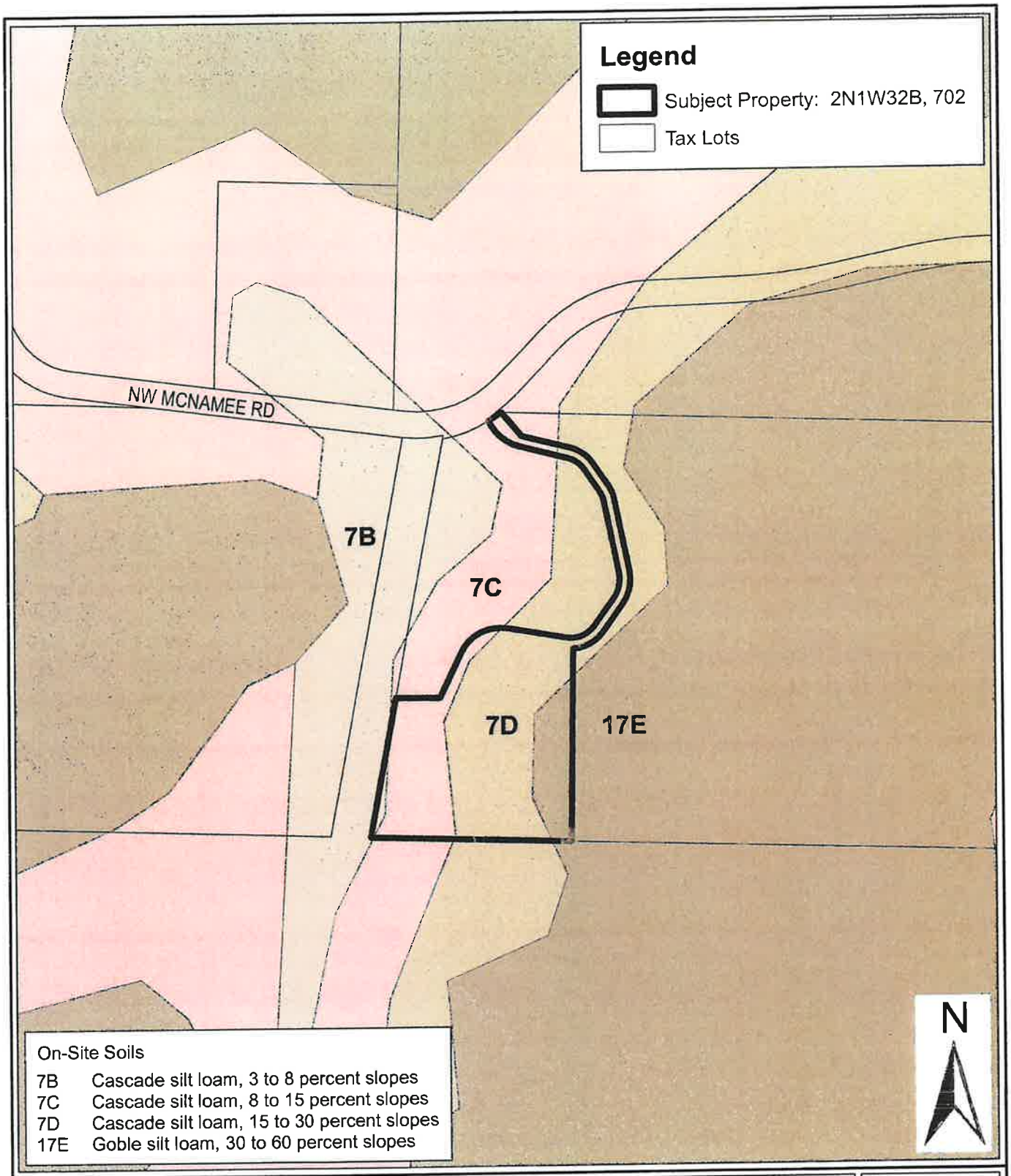
Design of the stormwater catch basin and discharge line, roof discharge line, storm water planter facilities, flow control structure and dispersion trench will be included in the final design for this project.

REGISTERED PROFESSIONAL ENGINEER 74713PE OREGON JANUARY 11, 2005 STEVEN MICHAEL WHITE

Sincerely
Steven M. White, P.E.

Attachments: Soils Map, Preliminary Site Plan, Pre-Developed HydroCAD Calc

EXPIRES: 6/30/22



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Soils Map
Miranda Property, Parcel 2, PP 2012-077
Multnomah County, Oregon

Source:
Metro Data Resource Center's, RLIS, Feb 2021.

Date:	03/05/2021
Scale:	1 in. = 200 ft.
Project #:	N0713
Drawn By:	CEB

Path: P:\N0713\03 Working\3.3 GIS\3.3.1 Maps\3.3.3 Plan\N0713_SOILS.mxd

Land Use Planning Division
1600 SE 190th Ave.
Portland OR 97233
Phone: 503-988-3043
land.use.planning@multco.us
https://multco.us/landuse/

STORMWATER DRAINAGE CONTROL CERTIFICATE
>500 SQUARE FEET OF NEW / REPLACED IMPERVIOUS SURFACES

NOTE TO PROPERTY OWNER/APPLICANT: Please have an Oregon Licensed Professional Engineer fill out this Certificate and attach a signed site plan, stamped and signed storm water system details, and stamped and signed storm water calculations used to support the conclusion. Please note that replacement of existing structures does not provide a credit to the square footage threshold.

Property Address or Legal Description: 13221 NE McNAMEE ROAD

Description of Project: M49 RESIDENCE

The following stormwater drainage control system will be required:

- ☐ **Use of Gutter, downspout, and splash block drainage control system;**
- ☒ **Natural Infiltration Process; or**
- ☐ **Construction of an on-site storm water drainage control system.**

The rate of stormwater runoff attributed to the new/replaced development for a 10-year/24-hour storm event will be no greater than that which existed prior to any development as measured from the property line or from the point of discharge into a water body with the use of the designated system [MCC 39.6235].

I certify the attached signed site plan showing the areas needed for the chosen system type, stamped and signed storm water system design details, and stamped and signed calculations dated 3-5-21 **will meet the requirements listed above.**

Signature: _____

Print Name: STEVE WHITE, PE

Business Name: NW ENGINEERS

Address: 3409 NE JOHN OLSEN AVE, Hillsboro

Phone #: 503-601-4401

Date: 3-5-21

Engineer's Seal Below:

NOTE TO ENGINEER: Please check one box above. Multnomah County does not use the City of Portland's storm water ordinance. As part of your review, MCC 39.6235 requires that you must consider all new, replaced, and existing structures and impervious areas and determine that the newly generated stormwater from the new or replaced impervious surfaces is in compliance with Multnomah County Code for a 10-year/24-hour storm event. This Storm Water Drainage Control Certificate does not apply to shingle or roof replacement on lawfully established structures.

§ 39.6235 STORMWATER DRAINAGE CONTROL.

(A) Persons creating new or replacing existing impervious surfaces exceeding 500 square feet shall install a stormwater drainage system as provided in this section. This subsection (A) does not apply to shingle or roof replacement on lawful structures.

(B) The provisions of this section are in addition to and not in lieu of any other provision of the code regulating stormwater or its drainage and other impacts and effects, including but not limited to regulation thereof in the SEC overlay.

(C) The provisions of this section are in addition to and not in lieu of stormwater and drainage requirements in the Multnomah County Road Rules and Design and Construction Manual, including those requirements relating to impervious surfaces and proposals to discharge stormwater onto a county right-of-way.

(D) The stormwater drainage system required in subsection (A) shall be designed to ensure that the rate of runoff for the 10-year 24-hour storm event is no greater than that which existed prior to development at the property line or point of discharge into a water body.

(E) At a minimum, to establish satisfaction of the standards in this section and all other applicable stormwater-related regulations in this code, the following information must be provided to the planning director:

(1) A site plan drawn to scale, showing the property line locations, ground topography (contours), boundaries of all ground disturbing activities, roads and driveways, existing and proposed structures and buildings, existing and proposed sanitary tank and drainfields (primary and reserve), location of stormwater disposal, trees and vegetation proposed for both removal and planting and an outline of wooded areas, water bodies and existing drywells;

(2) Documentation establishing approval of any new stormwater surcharges to a sanitary drainfield by the City of Portland Sanitarian and/or any other agency authorized to review waste disposal systems;

(3) Certified statement, and supporting information and documentation, by an Oregon licensed Professional Engineer that the proposed or existing stormwater drainage system satisfies all standards set forth in this section and all other stormwater drainage system standards in this code; and

(4) Any other report, information, plan, certification or documentation necessary to establish satisfaction of all standards set forth in this section and all other applicable stormwater-related regulations in this code, such as, but not limited to, analyses and explanations of soil characteristics, engineering solutions, and proposed stream and upland environmental protection measures.

Original Lot

Subcat Reach Pond Link

Routing Diagram for N0713--TL 702 25 Pre-Developed
Prepared by Hewlett-Packard Company, Printed 3/5/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.057	80	Small grain, SR + CR, Good, HSG C (12S)
0.057	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.057	HSG C	12S
0.000	HSG D	
0.000	Other	
0.057		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.057	0.000	0.000	0.057	Small grain, SR + CR, Good	12S
0.000	**0.000**	**0.057**	**0.000**	**0.000**	**0.057**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 12S: Original Lot Runoff Area=2,500 sf 0.00% Impervious Runoff Depth>1.95"
Tc=5.0 min CN=80/0 Runoff=0.03 cfs 0.009 af

Total Runoff Area = 0.057 ac Runoff Volume = 0.009 af Average Runoff Depth = 1.95"
100.00% Pervious = 0.057 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 12S: Original Lot

[49] Hint: Tc<2dt may require smaller dt

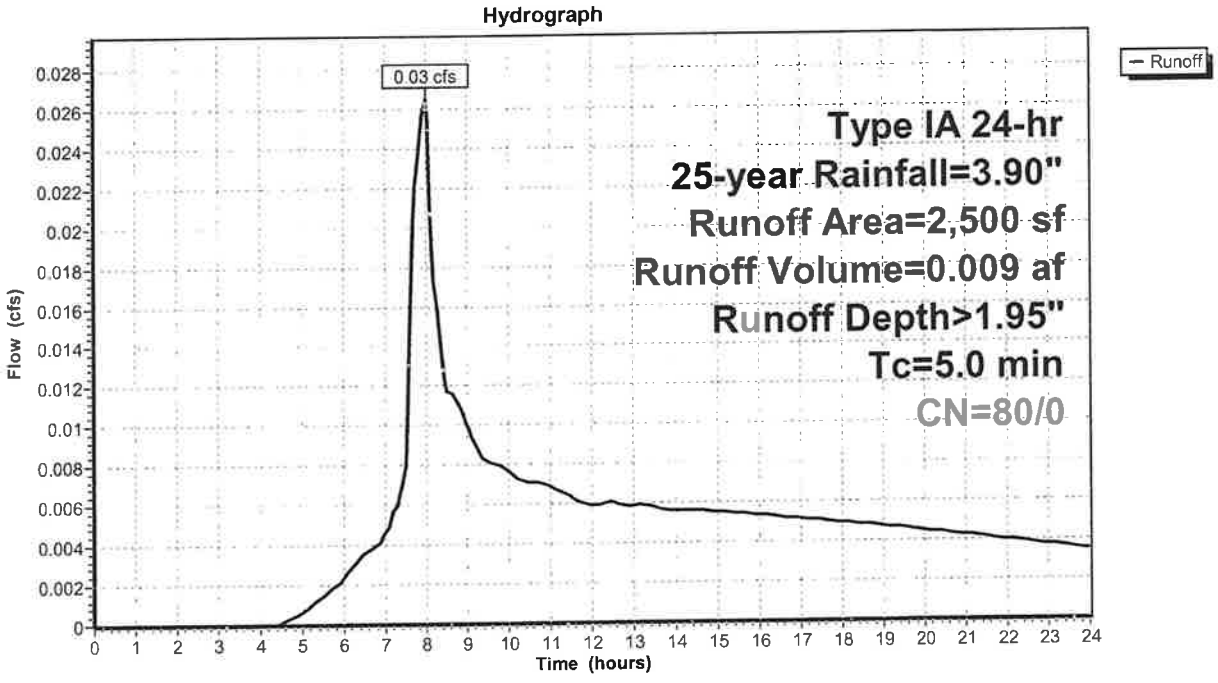
Runoff = 0.03 cfs @ 7.98 hrs, Volume= 0.009 af, Depth> 1.95"

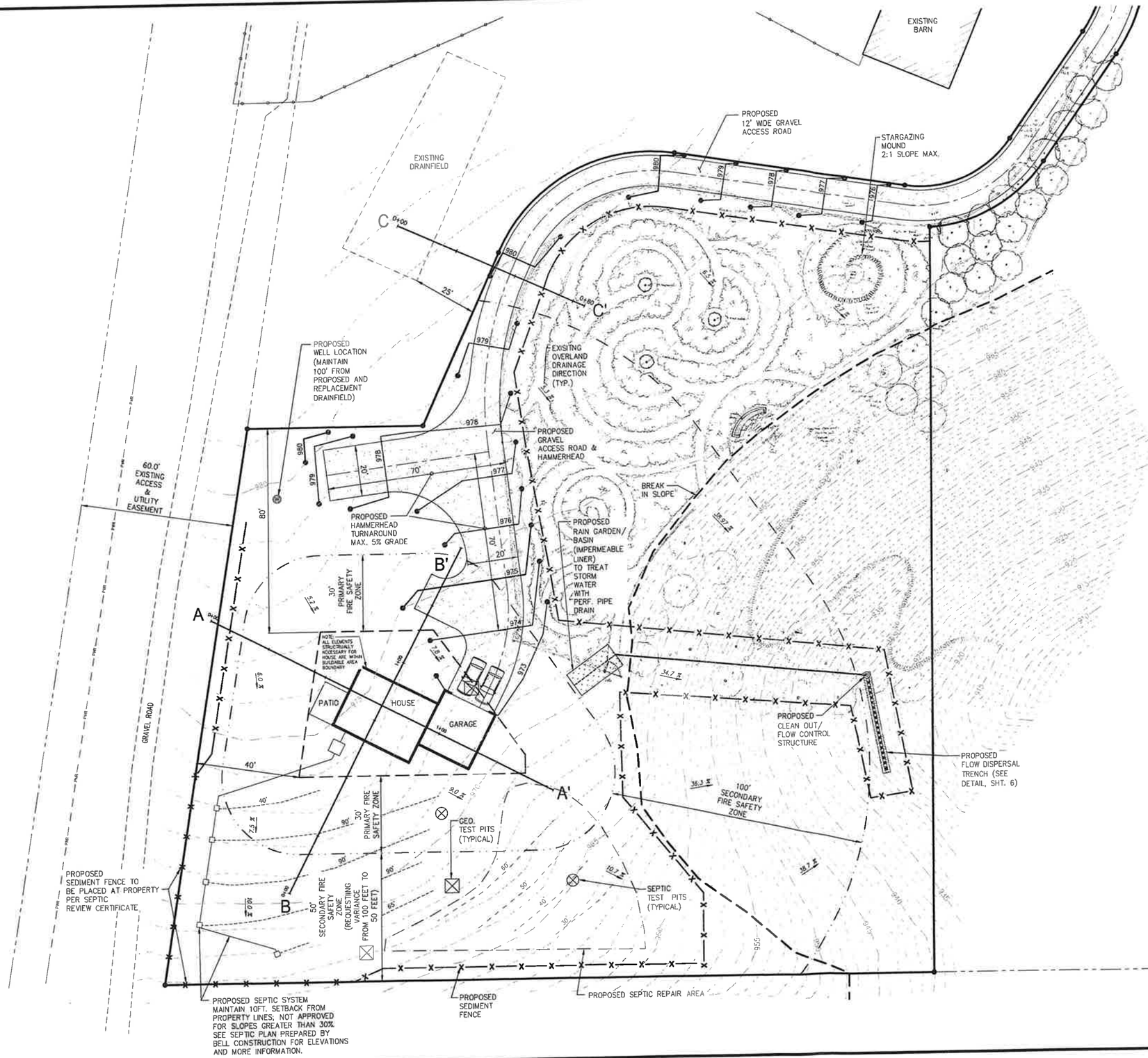
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-year Rainfall=3.90"

Area (sf)	CN	Description
2,500	80	Small grain, SR + CR, Good, HSG C
2,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 12S: Original Lot





EXISTING FEATURES LEGEND

- FOUND SURVEY MONUMENT
- PROPOSED SURVEY MONUMENT
- SUBJECT PROPERTY
- PROPERTY LINE
- EDGE OF GRAVEL
- FENCE
- 5 FT. CONTOUR (970)
- 1 FT. CONTOUR

NOTES

1. FIELD WORK WAS DONE ON OCTOBER 27, 2014.
2. ELEVATIONS ARE ON AN ASSUMED DATUM WITH CONTOURS AT A ONE-FOOT INTERVAL.
3. TREES AND OTHER PHYSICAL FEATURES ARE NOT DEPICTED.
4. SEE PAGE 6 FOR PROFILES AND DETAILS.

REGISTERED PROFESSIONAL ENGINEER
74713PE
OREGON
JANUARY 11, 2008
STEVEN MICHAEL WHITE

EXPIRES: 6/30/22

JUNE 28, 2021

NORTH

1 inch = 20 ft.
11x17 SCALE: 1 inch = 40 ft.

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503 601 4401

FOR: KATIE MIRANDA & AHMED AL ALI
4345 SW 94TH AVENUE
PORTLAND, OR 97225
PH: 650-284-8513
SITE: TAX MAP 2N1W32B
TAX LOT 702
MULTNOMAH COUNTY, OREGON

MIRANDA M49 RENEWAL
N0713
PRELIMINARY GRADING & EROSION CONTROL PLAN

REVISION	BY	DATE
1		
2		
3		
4		
5		
6		
7		

DESIGNED | DRAWN | REVIEWED | SUBMITTAL

PGR1

ChrisB, Plotted: Jun 24, 2021 – 2:52pm, C:\Users\chrisb\AppData\Local\Temp\AcPublish_15512\N0713-05-PGR1.dwg