



Land Use Planning Division
1600 SE 190th Ave, Ste 116
Portland OR 97233
Ph: 503-988-3043 Fax: 503-988-3389
land.use.planning@multco.us
www.multco.us/landuse

STORM WATER CERTIFICATE FOR ≥ 500 SQUARE FEET OF NEW IMPERVIOUS SURFACES

Please have an Oregon Licensed Professional Engineer fill out this Certificate and attach a stamped and signed site plan, stamped and signed storm water system details (if determined to be required), 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: 29619 SE STONE RD., GRESHAM, OR 97080

Description of Project: SINGLE FAM. RESIDENCE

☐ **Construction of an on-site storm water drainage control system is not required.** The rate of storm water runoff attributed to the new/reviewed development (during the 10-year/24-hour storm) will be no greater than that which existed prior to the development as measured from the property line or from the point of discharge into a watercourse [MCC 39.6225 and 39.6235]. I **certify through the attached stamped and signed site plan and stamped and signed calculations dated _____ that the proposal will meet the requirements listed above.**

☒ **Construction of an on-site storm water drainage control system is required.** After installation of the drainage control system, the rate of storm water runoff attributed to the development (during the 10-year/24-hour storm) will be no greater than that which existed prior to development as measured from the property line or from the point of discharge into a watercourse [MCC 39.6225 and 39.6235]. I **certify the attached stamped and signed site plan, stamped and signed storm water system design details, and stamped and signed calculations dated 10-15-19 will meet the requirements listed above.**

NOTE TO ENGINEER: Check one box above. Multnomah County does not use the City of Portland's storm water Ordinance. As part of your review, you must consider all new and existing structures and impervious areas and determine that the generated storm water is in compliance with Oregon law for a 10-year/24-hour storm event.

Signature _____

Print Name DAVID POPESCU, PE

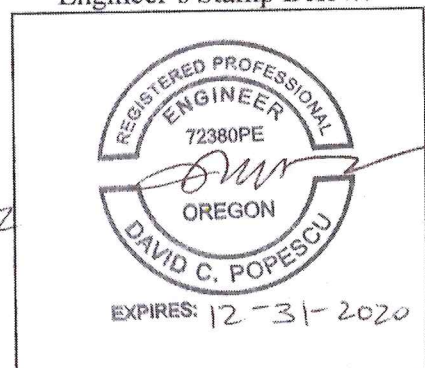
Business Name NW CIVIL DESIGN, LLC

Address 9715 NE 100th WAY, VANCOUVER, WA 98662

Phone # 360-607-0654

Date 10-15-19

Engineer's Stamp Below:



(Rev 11/2018)

EXHIBIT

A.14

STORMWATER CALCULATIONS

OBJECTIVE: FIND FLOW-THROUGH PLANTER AREA

STEP 1: Determine Drainage Basin Characteristics;

$$A_{imp} = 3,518 \text{ SF} = 0.08 \text{ AC.}$$

$$CN = 98, \text{ CN - NRCS CURVE NUMBER}$$

STEP 2: Calculate Runoff Volume

$$V_{imp} = 3630 \times A \times \frac{\left[P_{design} - 0.2 \left(\frac{1000}{CN} - 10 \right) \right]^2}{\left[P_{design} + 0.8 \left(\frac{1000}{CN} - 10 \right) \right]}$$

P_{design} - design precipitation depth for the
10 YEAR, 24 HR Storm event

$$P_{design} = 3.4 \text{ in}$$

$$V_{imp} = 920 \text{ cf}$$

STEP 3: Determine Planter Treatment Depth

$D_{pond} = 12 \text{ in}$, planter ponding depth

$D_{media} = 18 \text{ in}$, planter media depth

$D_{gravel} = 12 \text{ in}$, planter storage layer

STEP 4: Calculate Planter Area

$$A = \frac{V_{imp}}{D_{pond} + D_{media} \times \eta_{media}}$$

$$A = \frac{V_{imp}}{D_{pond} + D_{soil} \times \eta_{soil} + D_{gravel} \times \eta_{gravel}}$$

$$\eta_{media} = \text{porosity} \quad \eta_{soil} = 0.25$$

$$\eta_{gravel} = 0.40$$

$$A = \frac{720}{1 + 1.5 \times 0.25 + 1' \times 0.4} = \underline{518 \text{ SF}}$$

CONCLUSION: Construct a minimum 518 SF flow-through planter.