



21905 64th Ave. W, Suite 100  
Mountlake Terrace, WA 98043  
P (425) 771 3304  
[Terracon.com](http://Terracon.com)

February 26, 2026

Raising Cane's Restaurants, LLC  
6800 Bishop Road  
Plano, TX 75024

Attn: LuAron Foster – Senior Property Development Manager  
P: (214) 455-7776  
E: LFoster@raisingcanes.com

Re: Geotechnical Engineering Report Addendum Letter No. 1 - Infiltration  
Raising Cane's 1360  
43rd Ave SE & S Meridian  
Puyallup, WA  
Terracon Project No. 81255047

Dear Ms. Foster:

Presented in this addendum letter are the results of infiltration testing performed by Terracon Consultants, Inc. (Terracon) for the above-referenced project. The services performed were consistent with our Task Order dated December 12, 2025. One (1) small-scale pilot infiltration test (PIT) was performed for purposes of providing a factored infiltration rate for use by the project's Civil Engineer in support of their design of the stormwater management system.

This addendum should be used in conjunction with our geotechnical engineering report dated April 18, 2025, prepared by Terracon for the project.

The location of the small-scale PIT, the test pit log, and the laboratory soil test results are presented as an attachment to the end of this letter. Presented herein is a description of the following:

- Subsurface conditions
- Description of infiltration testing procedures
- Stormwater infiltration results

## Subsurface Conditions

Approximately 1 foot of existing fill consisting of very dense silty sand with gravel and cobbles (SM) was encountered beneath the asphaltic pavement. The fill was identifiable by the presence of anthropogenic debris and likely consists of reused native soil. Below the fill was a thin relic topsoil layer with abundant roots overlaying very dense glacial till soils consisting of silty sand with gravel and cobbles (SM) extending through the termination depth. The topsoil layer below the fill signals the elevation of the site's original grade and validates that the soil below is glacial till.

## Description of Infiltration Testing Procedure

The Stormwater Management Manual for Western Washington (SWMMWW) presents various procedures and requirements for demonstrating the suitability of onsite stormwater management. We understand this manual has been adopted by the local jurisdiction. Based on our discussion with the project Civil Engineer, Kimley-Horn (KH), the planned infiltration facility renders small-scale PIT more appropriate for the estimation of the factored infiltration rate. As requested, the tests were performed at a depth of 9 feet bgs (approximate elevation of 453 feet). Collected soil samples were also tested for grain-size correlations at the base of the planned infiltration facility.

### Small-Scale, Pilot Infiltration Testing

Terracon advanced one test pit to 9 feet below ground surface (bgs) south of the planned storm facility. The test pit was excavated with a toothed bucket to ease advancement through dense gravels and cleaned up with a smooth bucket to reduce disturbance to the test pit base and sidewalls. The excavation sidewalls and excavated soil were observed by a Terracon field engineer and characterized accordingly in the test pit logs. The density/consistency of the soil was inferred through frequent probing of the base of the excavations for the upper 4 feet. Thereafter, soil densities presented on the logs are inferred from the level of excavator effort during test pit advancement and correlated with nearby boring data.

The testing was performed in general accordance with the SWMMWW. A description of the testing procedure is presented herein per the SWMMWW:

- A six-hour soaking period prior to field PIT testing
- One-hour constant head test

- One-hour falling head test
- Data recordings of flow rate and water head were performed every 5 minutes for the constant head and every minute for the falling head test.

Confining layers of lower permeability was not observed in the test pit, however, slight seepage was observed in the sidewalls of the pit at about 6 feet bgs. Because the seepage was observed only in the southern third of the pit, we suspect that this is a localized wet zone within the glacial till unit as compared to either a perched or regional ground water table. Additionally, the seepage did not persist after the initial opening of the pit indicating this wet zone lacks a recharge source. In our opinion, the wet zone did not influence our infiltration test.

### Correlation with Grain Size

According to the SWMMWW, a saturated infiltration rate may also be determined using a grain-size correlation. The methodology recommended by the manual is the Massmann equation (2003). However, grain-size correlation neglects considerations for soil density and is less representative of in situ conditions when compared to PIT testing.

The grain-size analysis methodology is primarily used to efficiently compare the relative permeability of the glacial till soils tested within PIT-01. The PIT results and grain size analysis results are presented in the **Stormwater Infiltration Results** section.

### Infiltration Rate Analysis

The analysis performed for estimating the factored infiltration rate is generally consistent with the methodology presented in the SWMMWW. The measured infiltration rates estimated from the small-scale PIT testing and grain size analysis are reduced by correction factors as follows:

$$K_{\text{sat design}} = K_{\text{sat (estimated/measured)}} \times CF_t \times CF_v \times CF_m;$$

Where,

- $K_{\text{sat design}}$  is the design infiltration rate
- $K_{\text{sat (estimated/measured)}}$  is measured infiltration rate from PIT testing or grain size analysis.

- $CF_t$  is a test factor and is taken as 0.5 for small-scale PIT, and 0.4 for grain-size based estimate of  $K_{sat}$  design.
- $CF_m$  is a factor arising from the long-term plugging potential of the infiltrating soil. For the range of soils encountered during exploration, a value of 0.9 should be used for  $CF_m$ .
- $CF_v$  is a factor between 0.33 and 1.0 accounting for the site variability and the number of locations tested, and we recommend this value to be 0.8.

## Stormwater Infiltration Results

Based on the PIT test and grain size correlation results, the uncorrected and factored infiltration rates are presented in the table below:

Test Location	Test Depth (ft)	Approximate Dimensions (ft)	USCS Classification	Uncorrected Infiltration Rate <sup>1</sup> (in/hr)	Factored Infiltration Rate <sup>1</sup> (in/hr)
<b>PIT-01</b>	9	4 x 8	SM – silty sand with gravel and cobbles	3.6	1.3
<b>PIT-01 (grain size)</b>	8-9	---	SM – silty sand with gravel and cobbles	3.9	1.1

1. Values are not corrected for the correction factors.

Based on the results from the infiltration testing, analysis methodology presented in the SWMMWW, and observation of subsurface conditions during excavation of the test pit we recommend the following:

- Factored infiltration rate of 1.3 inches per hour for PIT-01.
- Infiltration facilities should be located deeper than the perimeter footing drains for the new building.
- Retain Terracon to observe the base of the infiltration facility, once excavated, to confirm that the exposed subsurface conditions are consistent with the PIT testing conditions
- Compaction is avoided in the base of the infiltration facility. Compacting soils within the infiltration area may reduce the infiltration rate.

Based on the subsurface conditions and testing results, the onsite soils appear feasible for infiltration.

**Geotechnical Engineering Addendum – Infiltration**

Raising Cane's 1360 | Puyallup, WA

February 26, 2026 | Terracon Project No. 81255047



We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

**Terracon**

Jenna Batchelder, E.I.T.  
Staff Engineer

Zachary L. Koehn, P.E.  
Geotechnical Department Manager

**Geotechnical Engineering Addendum – Infiltration**

Raising Cane's 1360 | Puyallup, WA

February 26, 2026 | Terracon Project No. 81255047



## Attachments

Photography Log

Exploration Plan

2026 Test Pit Log (PIT-01)

Laboratory Grain Size Distribution Test Results

## Photography Log



Photo 1: Fill and Root Layer at PIT-01



Photo 2: Temporary Water Seepage at PIT-01

**Geotechnical Engineering Addendum – Infiltration**

Raising Cane's 1360 | Puyallup, WA

February 26, 2026 | Terracon Project No. 81255047



Photo 3: Infiltration Testing at PIT-01

## Exploration Plan

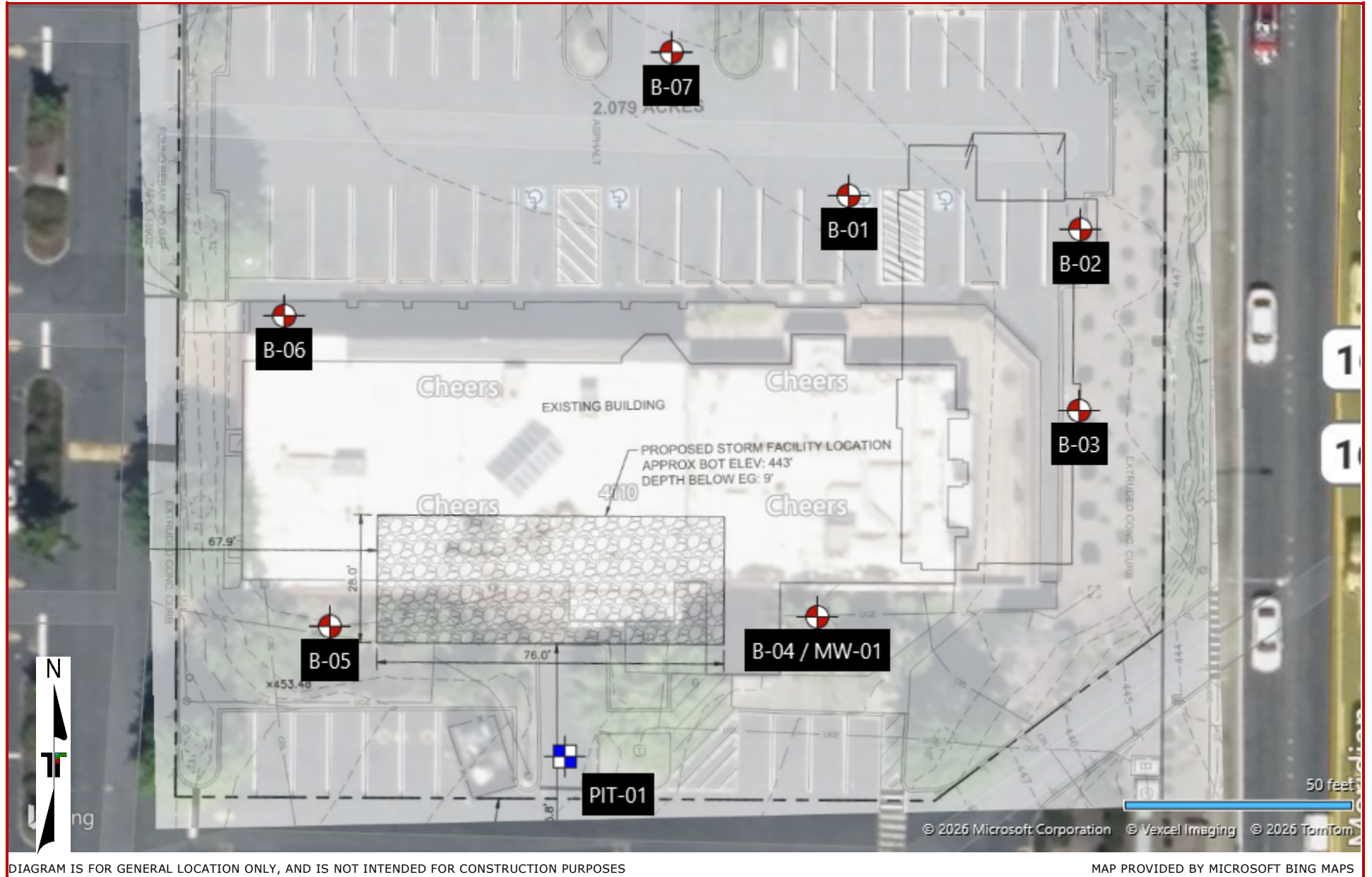


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

## Test Pit Log No. PIT-01

Model Layer	Graphic Log	Location: See <a href="#">Exploration Plan</a> Latitude: 47.1522° Longitude: -122.2937° Depth (Ft.) _____ Elevation: 453 (Ft.) +/-	Depth (Ft.)	Water Level Observations	Sample Type	Sample ID	Water Content (%)	Percent Fines
	0.3	<b>ASPHALT</b> , ~3 inches asphalt	452.75					
	0.4	<b>AGGREGATE BASE COURSE</b> , ~1 inch CSBC	452.65					
1	1.0	<b>FILL - SILTY SAND WITH GRAVEL (SM)</b> , with cobbles, plastic debris, fine to coarse grained, orangey brown, damp, very dense at ~1 foot: relic topsoil and root layer, indicating native soil contact	452	1	Hand	S-1		
2		<b>SILTY SAND WITH GRAVEL (SM)</b> , with cobbles, fine to coarse grained, grayish brown, damp to moist, very dense		2				
				3	Hand	S-2		
				4				
				5	Hand	S-3		
				6				
		at ~6 feet: wet zone creating temporary seepage		7	Hand	S-4		
				8				
				9	Hand	S-5	10.2	36
		at ~9 feet: small-scale, pilot infiltration test performed	444					
		<b>Test Pit Terminated at 9 Feet</b>						

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).  
 See [Supporting Information](#) for explanation of symbols and abbreviations.  
 Elevation Reference: Inferred from Google Earth Pro

**Water Level Observations**  
 Groundwater not observed

**Excavator**  
 Volvo ECR88D

**Operator**  
 GEC

**Notes**

Surface condition: paved nook adjacent to building  
 In the upper 4 feet: relative density was inferred from T-probe manually advanced until refusal  
 Below 4 feet: relative density was inferred from excavator effort and correlated with nearby boring data  
 At ~6 feet: Local wet zone in the glacial till unit created temporary seepage in the pit sidewalls. The wet zone drained and then stopped.

**Advancement Method**  
 18-inch toothed digging bucket

**Logged by**  
 JYB

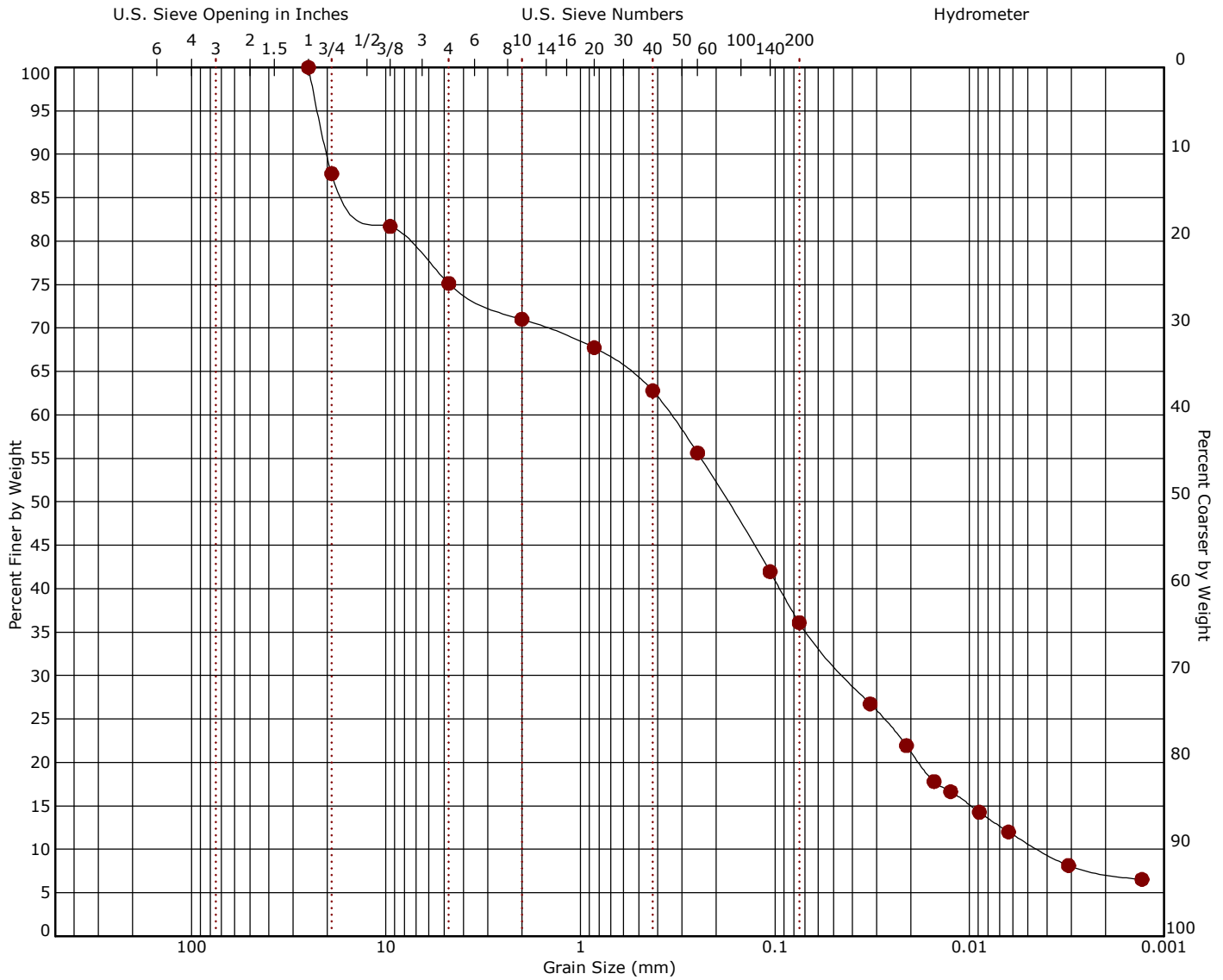
**Abandonment Method**  
 Test pit backfilled with excavation spoils, compacted in lifts, and surface capped with cold mix asphalt.

**Test Pit Started**  
 02-03-2026

**Test Pit Completed**  
 02-03-2026

## Grain Size Distribution

ASTM D422 / ASTM C136 / AASHTO T27



Cobbles | 
 Gravel (coarse | fine) | 
 Sand (coarse | medium | fine) | 
 Silt or Clay

Boring ID	Depth (Ft)	Description	USCS	LL	PL	PI	Cc	Cu
● PIT-01	8 - 9	Silty Sand	SM				1.25	79.34

Boring ID	Depth (Ft)	D <sub>100</sub>	D <sub>60</sub>	D <sub>30</sub>	D <sub>10</sub>	%Cobbles	%Gravel	%Sand	%Fines	%Silt	%Clay
● PIT-01	8 - 9	25	0.346	0.043	0.004	0.0	24.9	39.0		25.3	10.7