



# Stormwater Pipe Flow Calculations

## Gateway Phase 1A Drainage

6/29/2023 KHH

The following pipe flow calculations are based on the peak 100-yr flow for the drainage area contributing to the existing drainageway. Rainfall intensity is taken from NOAA Atlas 14 for the 100-yr event.

### Time of Concentration - Kirpch Equation

L =	9515 ft
S =	0.25 ft/ft
$t_c$ =	15 min
I =	4.54 in/hr (15-min TOC)

### Peak Run-off:

Runoff Coefficient	C =	0.15 (deciduous forest)
Rainfall Intensity	i =	4.54 IN./HR.
Acreage	A =	319.22 ACRES
<b>Q</b>	<b>Q =</b>	<b>217.4 cfs</b>

### Pipe Sizing

Description	Pipe Size (in)	Slope	Cap. (cfs)
Corrugated HDPE	36	9.0%	218.8