223 Willow Street
Fort Collins, Colorado 80524
p 970.484.7477

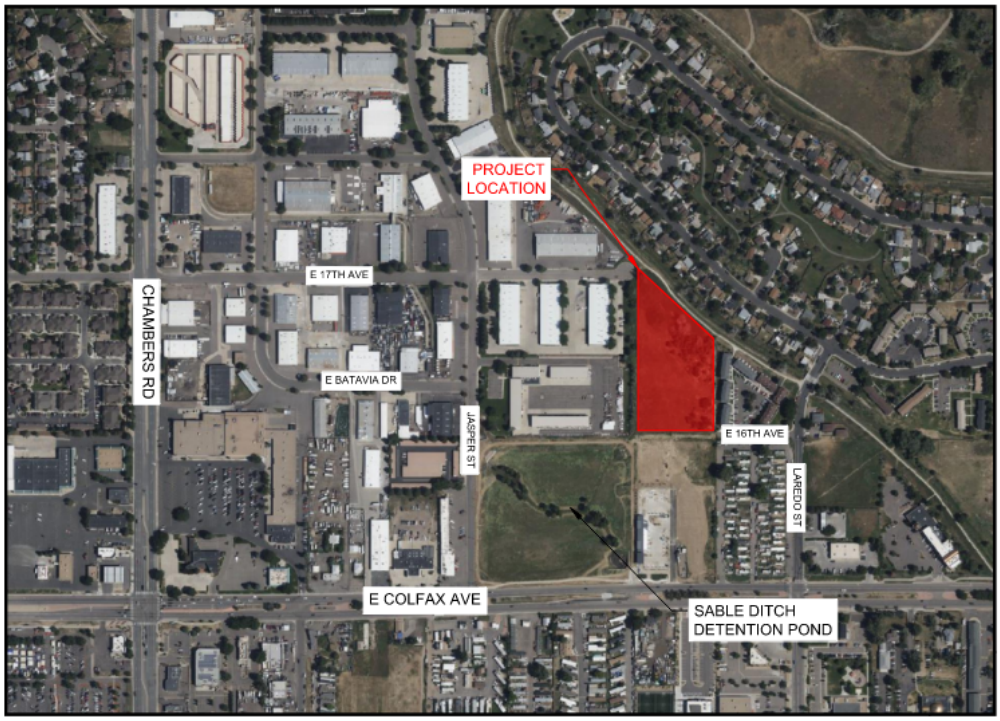
www.f-w.com

May 10, 2024

City of Aurora
15151 E. Alameda Pkwy.
Aurora, CO 80012

Re: Highline Village 4 - Utility Conformance Letter

The intent of this letter is to provide utility demands for the proposed Highline Village 4 project to demonstrate conformance with the existing utility infrastructure in East 16th Avenue. The project consists of a 130-unit, 35,000 square-foot multi-family residential building, private drives, surface parking lots and landscaping on a 3.74-acre lot. The project includes two main access points on East 16th Avenue and one emergency access point on East 17th Avenue.



VICINITY MAP
NTS

Existing Site Conditions

There are two existing 8" water mains adjacent to the project site; one to the south within the East 16th Avenue ROW, and one along the west property line.

There is an existing 10" sanitary sewer main to the south of the project site within the East 16th Avenue ROW.

Developed Conditions

The proposed project will create a looped water main extension with two connection points to the existing 8" water mains. One water connection point will be near the southeast corner of the site and will connect to the existing 8" water main in East 16th Avenue. The other water connection point will be in the northwest portion of the site and will connect to the existing 8" water line along the west property line.

There will be a 10" sanitary sewer service exiting the proposed building. The connection point will be in the southwestern corner of the building. It will extend to the south to connect with the existing 10" sanitary sewer main within the East 16th Avenue ROW.

Water Demand

According to the Aurora Water, Sanitary Sewer & Storm Drainage Infrastructure Standards & Specifications, the average day water demand for residential zoning should assume 2.77 people per unit and 101 gallons per day per capita. The maximum hour demand was calculated by taking the average day, dividing by 24 hours, then multiplying by a peaking factor of 4.5. The maximum day demand was calculated by taking the average day demand a multiplying by a peaking factor of 2.8. The maximum day plus fire flow demand was calculated by taking the average day and multiplying it by a peaking factor of 2.8, then adding the 2-hour fire flow of 1,500 gpm (180,000 gallons). The following table summarizes the results for the 130-unit residential building.

Calculated Water Demands for 130-unit Residential:

Average Day (gpd)	Max Hour (gph)	Max Day (gpd)	Max Day Velocity (ft/s)	Max Day Headloss (ft)	Max Day + Fire Flow (gal)
36,370	6,819	101,836	1.73	0.12	281,836

(4" Class 52 Ductile Iron Pipe, Length = 33 feet, Roughness Coefficient C = 130)

Sanitary Sewer Demand

According to the Aurora Water, Sanitary Sewer & Storm Drainage Infrastructure Standards & Specifications, the average day sanitary sewer demand for residential zoning should assume 2.77 people per unit and 68 gallons per day per capita. The infiltration was calculated as 10% of the average day. The maximum day demand was calculated by taking the average day demand a multiplying by a peaking factor of 4. No peaking factor was used for infiltration when calculating the maximum day plus infiltration. The following table summarizes the results for the 130-unit residential building.

Calculated Sanitary Sewer Demands for 130-unit Residential:

Average Day (gpd)	Average Day + 10% Infiltration (gpd)	Max Day (gpd)	Max Day + 10% Infiltration (gpd)
24,487	26,935	97,947	100,396

In conclusion, the utilities for this project are in conformance with the City of Aurora Water, Sanitary Sewer & Storm Drainage Infrastructure Standards and Specifications. Please do not hesitate to reach out with any questions or concerns at dlutz@f-w.com or 970-232-1218.

Sincerely,

FARNSWORTH GROUP, INC.

Derek Lutz, PE
Project Engineer