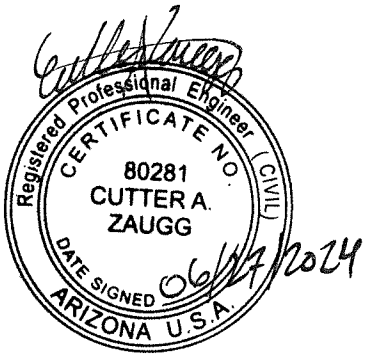
ALLEN

CONSULTING ENGINEERS, INC.

Sewer Report
for
26026 S. Ellsworth Road
Queen Creek, AZ 85142

(A.C.E. Job # 97839)



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SITE DESCRIPTION

The project is a proposed commercial site located at 26026 S. Ellsworth Road and is within a portion of the southeast quarter of Section 33, Township 2 South, Range 7 East, of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The site is approximately 4.188 net acres in size. Four 7,661 S.F. buildings are proposed for the site for a total area of 30,644 S.F.

EXISTING SEWER SYSTEM

There is an existing 15-inch sewer main in S. Ellsworth Road. The proposed development will tie into the existing 15-inch line via an 8" sewer main. The Town of Queen Creek is the sewer service provider for the site.

PROPOSED SEWER SYSTEM DESIGN

Design Criteria:

This design report will be based on calculating the maximum peak daily flows. Average Daily Flows and Peak Daily flow will be determined from Tables 5.1.1 of the Design and Construction Standards manual for Wastewater for The Town of Queen Creek 2013 & ADEQ Table 1. The minimum and maximum allowable flow velocities are 2 and 10 feet per second respectively. These velocities will be maintained in all pipes at peak design flows.

The design flow for the system was determined by multiplying the Average Daily Flow by a peaking factor of 3.0 for commercial sites.

Commercial, mixed use
Land area = 4.188 acres
Design Unit Load = 928 gpad
Average Daily Flow = 928 x 4.188 ac = 3,886 gpd
Peak Daily Flow = 3,886 x 3.0 = 11,659 gpd

Total design flow = **11,659 gpd**

RESULTS

The sewer design has been tabulated in Figure 1. The accumulative flow at the existing sewer manhole in Ellsworth Road is 11,659 gallons per day (gpd) at peak daily flows. Additionally, the proposed 8-inch sewer line will be below 20% of capacity during the maximum daily peak flows. Refer to Figure in the back of this report for design calculation and capacity results. The design tabulation indicates that the minimum and maximum velocities are within design parameters.

FIGURES

Land Area (acres)	Design Unit Load (gpad)	ADWF (GPD)	Peak Factor	PDF (GPD)	Cum. PDF (GPD)	Up-Stream Invert (ft)	Existing Grade Upstream (ft)	Upstream Cover	Down-Stream Invert (ft)	Existing Grade Down-Stream	Down-Stream Cover	Length (ft)	Slope (ft/ft)	Diam. (in.)	Capacity (MGD)	% Cap. (MGD)	Velocity (fps)
4.188	928	3886	3	11659	11659	1407.03	1424.2	17.17	1405.37	1420.65	15.28	473	0.0035	15	2.479	0.5%	3.1