

FIRE FLOW CALCULATIONS

Avida

Date: August 2016

Floor Areas:**ALF:**

1 st Floor:	52,750	SF
2 nd Floor:	45,454	SF
3 rd Floor:	39,505	SF
TOTAL:	137,709	SF

ILF:

1 st Floor:	81,621	SF
2 nd Floor:	72,816	SF
3 rd Floor:	79,232	
4 th Floor:	79,232	SF
TOTAL:	312,901	SF

Club House:

1 st Floor:	3,508	SF
2 nd Floor:	2,206	SF
TOTAL:	5,714	SF

Largest Total Floor Area: 312,901 SF = Fire Flow Area

Per NFPA Table 18.4.5.1.2 Minimum Required Fire Flow

Fire Flow Area > 191,400 SF Fire Flow= 8,000 GPM

Per NFPA Section 18.4.5.2.1, reduce Fire Flow by 75% for structures with automatic sprinklers

Required Fire Flow = 2,000 GPM**Average Daily Domestic Flow = 27.86 GPM****Required Capacity = 2,028 GPM****System Capacity:**

Using Hazen-Williams Equation,

Demand

<u>Q (gpm)</u>	<u>Q (mgd)</u>	<u>C</u>	<u>Pipe Dia (in)</u>	<u>Pipe dia (ft)</u>	<u>Pipe Loop Length (ft)</u>
2,028	2.920	120	12	1	3,486

<u>S (ft/ft)</u>	<u>Head loss (ft)</u>	<u>Head loss (psi)</u>
0.010915	38.0	16.5

Supply Pressure: 50 psi

Residual Pressure: 33.5 psi**Results of Fire Flow Test: 2,293 GPM @ 20 psi****Test Date: 21-Jul-16**

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