



PB 21-03
RECEIVED
APR 13 2021
PLANNING BOARD

WATER SYSTEM DESIGN MEMO

Cawley Crossing
Warren Township, Somerset County

April 8, 2021

PREPARED FOR:

The United Way
6 Forest Avenue
Paramus, NJ 07652

PREPARED BY:

Natural Systems Utilities
170 Township Line Road, Bld. C
Hillsborough, NJ 08844



NATURAL SYSTEMS UTILITIES
Eastern Region

170 Township Line Road, Building C, Hillsborough, NJ 08844

TEL: 908.359.5501

FAX: 908.359.8286

NSUWATER.COM

CONTENTS

1.0	PURPOSE AND SCOPE.....	2
2.0	SITE LOCATION	2
3.0	DESIGN WATER DEMANDS	2
4.0	WATER SUPPLY AND TREATMENT.....	3

1.0 PURPOSE AND SCOPE

Cawley Crossing is a proposed special needs housing development featuring three residential buildings and associated infrastructure, located in Warren Township, Somerset County, New Jersey. The proposed plan consists of a total of 36 bedrooms distributed among six residential buildings, plus one building for common use. Potable water will be provided by a stand-alone onsite. Water for fire suppression will be provided by a separate system and is beyond the scope of this report.

2.0 SITE LOCATION

The project site consists of one parcel identified as Block 83 Lot 4 totaling approximately 10 acres located in Warren Township in the CR-130/65 (Cluster Residential) zoning district. The north side of the site is bounded by Mountain Avenue and the south side of the site is bounded by US Route 78. The site abuts agricultural land to the west and residential / forested land to the east.

3.0 DESIGN WATER DEMANDS

Water demands for the Cawley Crossing development are 3,831 GPD as shown in Table 1. The demand is based upon criteria established in the Residential Site Improvement Standards N.J.A.C. 5:21-5.2.

**TABLE 1
DESIGN WATER DEMANDS**

Water Demand Component	Units	Demand/unit (gpd)*	Subtotal (gpd)
1-bedroom, Assisted Living	24	75	1800
1-bedroom, Independent Living	12	75	900
2-bedroom, Independent Living	0	150	0
Employee	7.75	75	581
Total (gpd)			3,831

*Assumes 75 gpd/person and one person per bedroom.

4.0 WATER SUPPLY AND TREATMENT

The proposed potable wells will be located in the northern portion of the site near the entrance. The control / treatment building will be located near the wells. In addition to 24 hour aquifer test data, a pollutant source inventory will be compiled as part of the state permitting process. Submersible pumps within each well will operate in an alternating fashion and deliver raw water to the control / treatment building. Each supply well will be outfitted with a check valve, bypass, blowoff, air relief, level indicator, pressure gage, sampling tap, and a totalizing flow meter.

It is assumed that raw water will only require ultraviolet disinfection prior to distribution. Additional treatment will be provided as necessary, based on final raw water quality analyses. A hydropneumatic tank system will provide storage and maintain the pressure within the system. A potable distribution system will deliver the water to each building. A PLC (Programmable Logic Controller) will monitor the system and control the well pumps and treatment system. The system will be connected to an emergency generator with an automatic transfer switch in case of a power outage.