



Cranmer Engineering, Inc.

Integrated Engineering Services

December 6, 2024

Route 49 Partners LLC
Attention: Doug Lawler
P.O. Box 245
Loyalton, CA. 96118

RE: Meadow Edge Development domestic water well system operations

To Whom it may Concern:

The following report describes how the existing water system, and proposed water system will operate with the expansion of 50 additional units. The current water system has four existing wells which will now be required to meet the expanding development demand (50 additional units). In general, the system will operate in the same manner as it has operated previously with the additional units included.

A summary of the proposed system demands obtained from Balance Hydrologics is as follows: (See also November 7, 2024, report and Cranmer Engineering, Inc. April 1, 2024)

Average Day Demand (ADD) with irrigation:	37,920 gallons/day (26.3 gpm)
Maximum Day Demand (MDD) with irrigation:	73,101 gallons/day (50.8 gpm)
Peak Hour Demand (PHD);	3,959 gallons/hour (66.0 gpm)

The following is a summary of the existing well system production capacities from the Balance Hydrologics November 7, 2024, report:

Well No.	Location, a)	Well Capacities		Capacity with Max Well off line	
		gpm, b)	gpd	gpm	gpd
1	NE corner	17	24,480	17	24,480
2	NW corner	60	86,400	60	86,400
3	SE corner	61	87,840		-
4	SW corner	60	86,400	60	86,400
Total		198	285,120	137	197,280
Notes					
a) Location is relative to the existing system before added 50 units					
b) System capacities per Balance Hydrologics, November 7, 2014					
Letter report titled "Results of 8-hour pumping test at source					
Well #4, Meadow Edge Park, Plumas County, California					

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The existing well system, with the maximum well offline, has a capacity of 137 gpm, and thus is substantially greater than MDD and PHD. The existing wells capacity can meet the proposed project demands of 50.8 gpm.

In general, the operation of the four (4) well system, under proposed expansion project demands, will be the same as under the existing system demand conditions. The following describes the well head requirements, and operation of each well (see attached flow schematic) which is the same for each well except as noted for Well #3 which has a variable frequency drive (VFD) pump, and no pressure tank. For each well the operation is as follows:

- In general, each well has its own power connection, and control panel which turns on the pump when the pressure switch on the distribution line reaches 40 psi, and turns off the well pump when the pressure becomes 60 psi.
- Each well head contains the following:
 1. An electric supply panel and control panel
 2. Vent
 3. Future chlorine injection tap with valve for use if needed
 4. Sample tap with valve
 5. Hose bib
 6. Check valve
 7. Well shut off valve
 8. Water meter
 9. Pressure gage
 10. Pressure relief valve
 11. Pressure sensor switch, and
 12. A pressure tank on Wells 1, 2 and 4. Well #3 does not need a pressure tank as it has a variable frequency drive (VFD) pump.

Each well then discharges flow when demand is needed until the demand is met.

The new 50 unit section will have a distribution line connected near Well #4, and looped to connect to new Well #2. Valves should be placed on the new line at the general locations shown on the Flow Schematic to be able to isolate various portions of the new area for maintenance as needed.

In addition, a 10,000-gallon fire tank with a draft fire hydrant will be installed. The tank will be filled from a connection to the new distribution line, and kept full as needed by a tank sensor/float device. The tank connection line will include a backflow prevention device that includes reduced pressure connection or air gap to prevent the fire tank water from draining back into the distribution line.



Sincerely,

Cranmer Engineering, Inc.



Thomas E. Leland, RCE 14320
Chief Engineer

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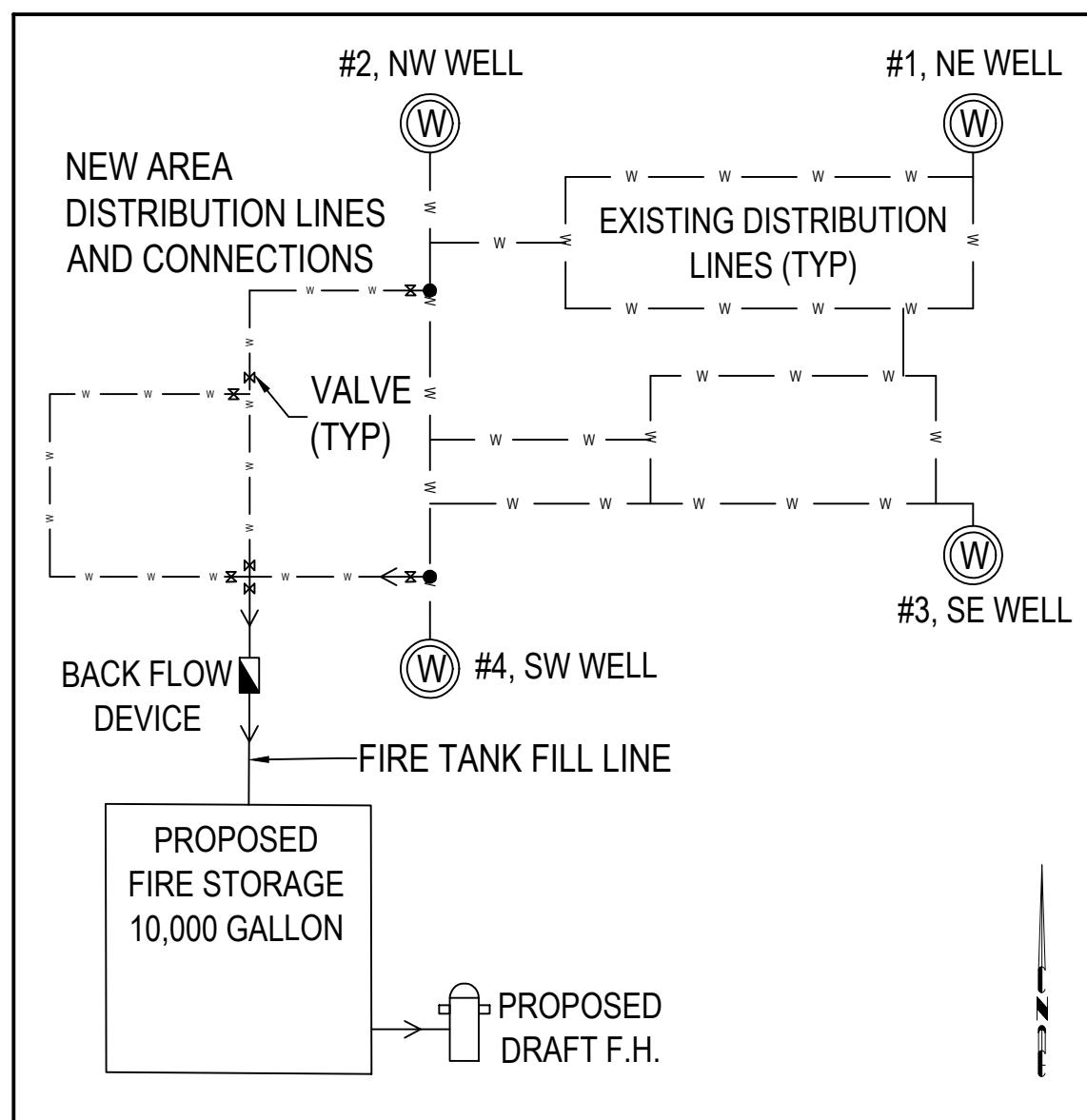
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FLOW SCHEMATIC

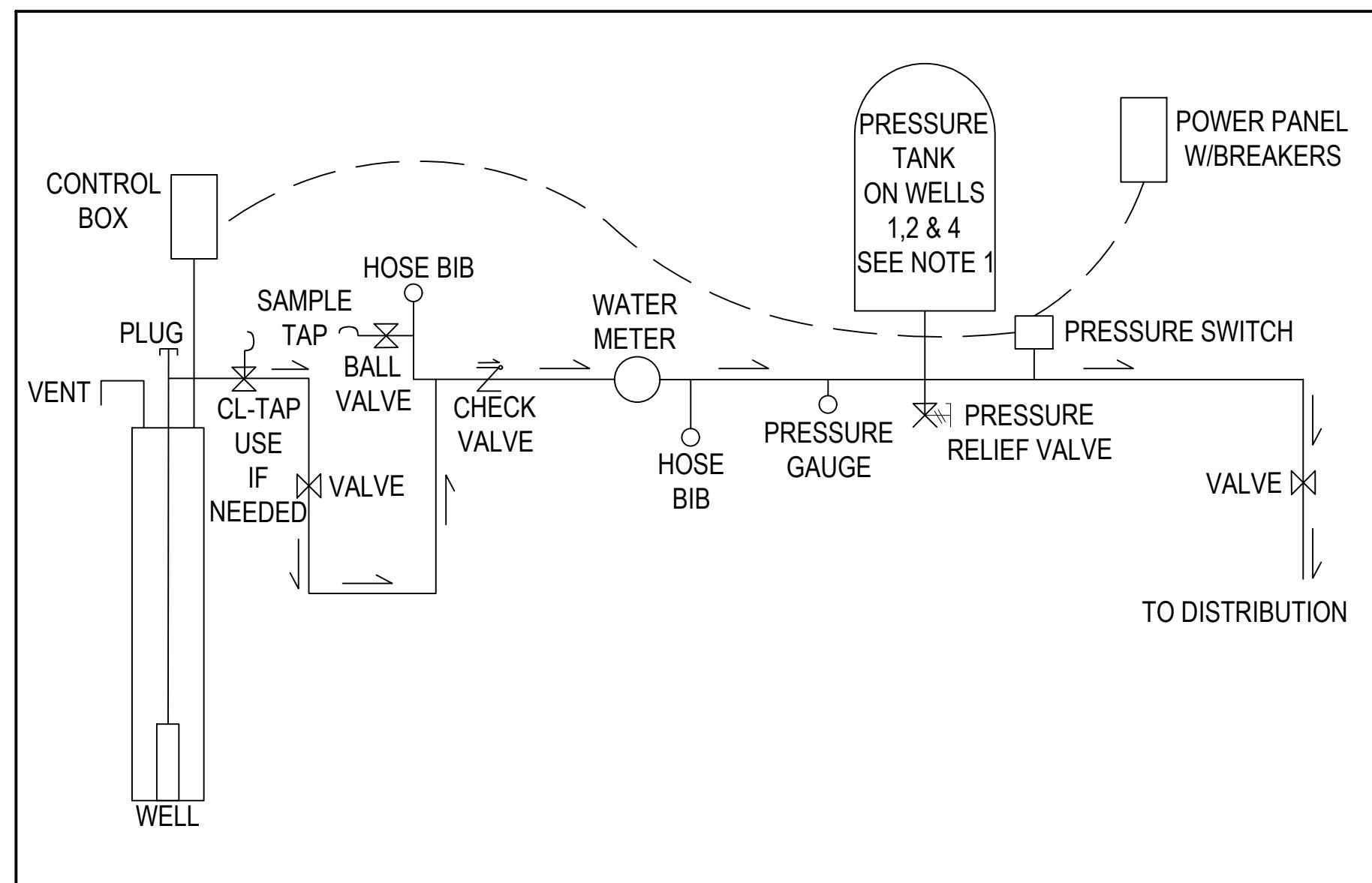
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WELL ORIENTATION

SCALE: N.T.S.



TYPICAL FLOW SCHEMATIC AT EACH WELL

SCALE: N.T.S.

NOTES

1. WELL #3 HAS A VFD WELL PUMP & DOES NOT NEED A PRESSURE TANK.



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GRASS VALLEY, CA 95945

ROUTE 49 WATER SYSTEM SCHEMATIC

DATE: 12-2024

JOB NO.: 22-117

FIGURE 1

SCALE: NTS