

HARSTINE ISLAND ESTATES
WATER SYSTEM
STATUS REPORT
(April 27, 2013)

A. PRESENT CONDITIONS:

1. New Tank:

The 2013 inspection of the new Tank found it to be in excellent condition, Crystal-Clear stored water, no signs of corrosion;

2. New Booster Station:

The 2013 inspection found it to be in excellent condition;

3. System Delivery Pressure:

a. Gravity System:

Spot checks of the water pressure within the Gravity portion of the delivery piping system found that the State Required Minimum Pressure is being met;

b. Pressure System:

The newly relocated Booster Station maintains the Minimum State Required Pressure within this portion of the delivery piping system;

4. Water Quality:

a. Well & Tank:

The water quality within the Well and Tank are excellent;

b. Delivery Piping System:

(i) Recent Reports (Good):

There has been no Coliform Bacteria detected within any portion of the delivery piping system since the new Tank replaced the old decaying Redwood tanks, and no significant problem, break or other disruption has occurred within the delivery system.

(ii) POTENTIAL PROBLEM AREAS (No Recently Detected Coliform Bacteria):

The existing Delivery Piping System has 6 Dead-End pipes where Coliform Bacteria problems could develop, due to lack of circulation creating stagnate water conditions. Occasional manual flushing of these Dead-Ends has prevented a problem, SO FAR;

5. State Allowed Connections:

a. Currently (66):

At the present time, only 66-Connections are allowed to be served by the HIEA Water System, 1-Clubhouse/Pool connection and 65-SFR (Single Family Residence) connections;

- b. Original System Design (78):
The constructed original 1970's Design was approved by the State to supply 78-Connections, each connection delivering 1-ERU (Equivalent Residential Unit) of water.

However, over time, the allowed number of connections has been downgraded by the State, since supporting documentation became misplaced.

In the Fall of 2006 HIEA and Martig Engineering compiled and presented supporting records that allowed the State to upgrade the allowed number of connections to the Current 66-ERU's.

B. ADDITIONAL IMPROVEMENTS:

- 1. State Mandated Water Service Meters:
The State requires that all active service connections, delivering water from the Water System to a user, must be metered; using an individual meter for each individual connection.

Approximately 35 individual meter assemblies remain to be installed, at a Budget Estimated Cost of \$26,250.00.

- 2. Increase the State Approved Connections from 66 to 78:
The Attached "Existing System Map" shows the location of the service connections to be served by the HIEA water system, broken into four service area Zones.

In order to obtain the necessary State approval that will allow all of the potential 78-Connections to be connected, an updated Water System Map must be prepared. Additional Elevation Measurements are necessary in order to complete the new map.

In addition to the updated System Map, an Engineering Report must also be submitted that demonstrates the ability of the installed System to deliver water to all 78-Connections, while meeting all current State system requirements. These requirements include:

- a. Delivery of required Volume;
- b. Delivery of required Maximum Instantaneous Demand flow rate (MID); and
- c. Maintaining minimum required supply pressure within the Distribution Water Main Pipes.

The Budget Estimated Cost for preparing and presenting the updated System Map and associated Engineering Report is \$7,500.00.

3. Eliminate Potential Coliform Bacteria Contamination at Dead-End Pipes:
In order to reduce the "Potential" for Coliform Bacteria contamination at the location of Dead-End pipes, continuous circulation of fresh water must be maintained at each of the six Dead-End locations.

Either a new automated Blow-off (Flushing) Assembly must be installed at each Dead-End location or Pipe Looping must be installed to eliminate the Dead-End pipe situation altogether.

The Budget Estimated Cost for eliminating the stagnate water Coliform Bacteria producing condition at all six locations is \$21,000.

C. SUMMARY:

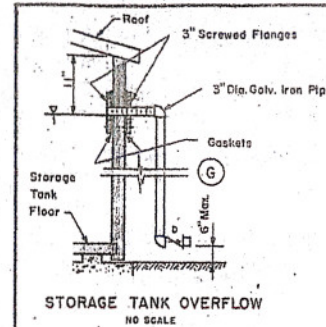
The new Water Tank, the newly relocated Booster Station, and the new Banner Telemetry Well Pump Control System have been in operation for 2.25-Years. They are in excellent condition and have been operating nicely (THANKS TO THE HIEA COMMUNITY'S VOLUNTEER OPERATORS) and Clearwater Utility Services, LLC.

The above discussed Additional Improvements to the HIEA Water System should be implemented within the near future. Once these improvements are in place, the 40-Year-Old HIEA Water System will be "Totally Up-Dated" and no new Capital Improvements should be necessary for many years.

Funding for the Additional Improvements is being sought using a USDA Loan. Preliminary application work has determined that HIEA is eligible to receive such a Loan. A Loan Amount up to \$100,000 would provide the funds to complete the Additional Improvements to the HIEA Water System and provide funding for some of the necessary improvements to the Community Pool facility.

A Total Budget Amount of \$60,000 (\$55,000 for implementing the above presented improvements and \$5,000 for the necessary Engineering assistance required to secure the Loan) is recommended to complete the HIEA Water System Improvements.

ZONE	POTENTIAL RESIDENCES	EXISTING RESIDENCES	WATER (only) AVAILABLE	NEW (requests) RESIDENCES
Central	15	15	0	0
Northerly	16 to 20	14	1	1
Southerly	16 (+pool)	14	1	1
Pressure	26	7	4	9
TOTALS	77	50	6	11

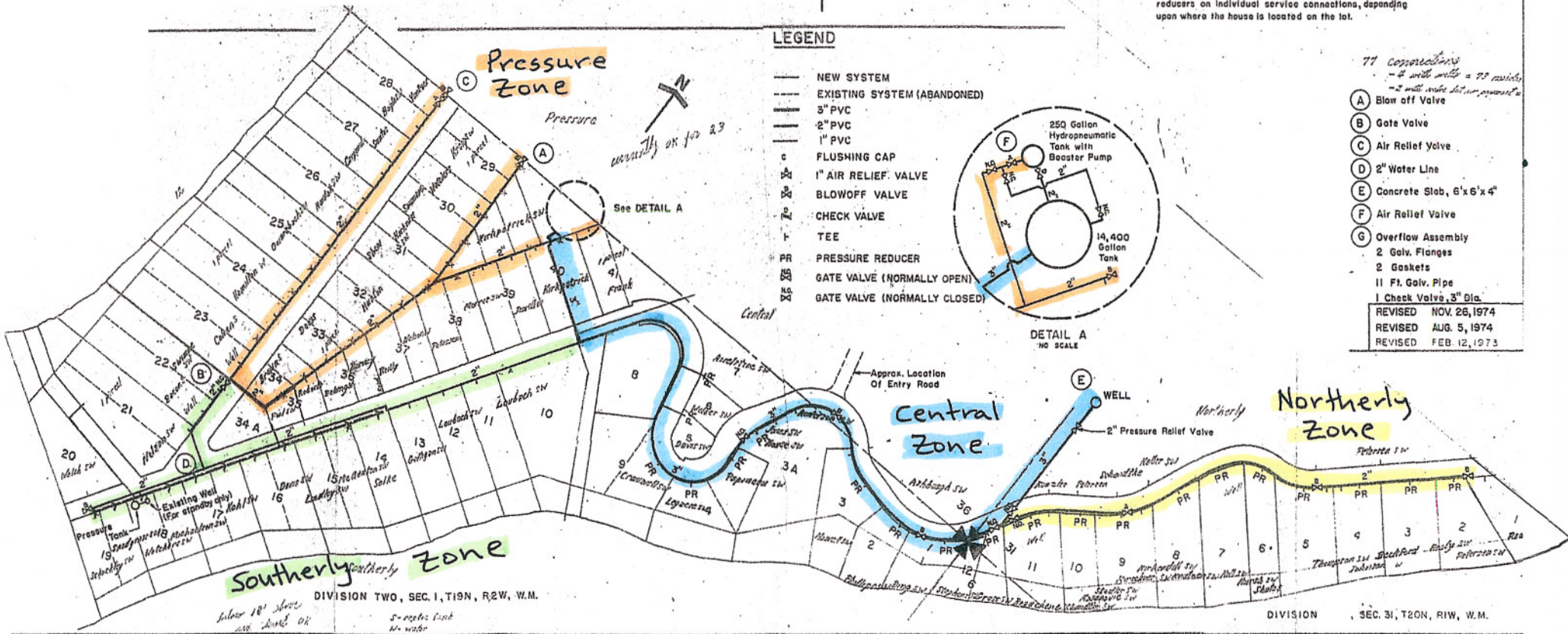


HARTSTINE ISLAND ESTATES Water Distribution System

ARVID GRANT AND ASSOCIATES
OLYMPIA, WASHINGTON

SCALE: 1" = 500'

NOTE: The PR symbol indicates the potential need for pressure reducers on individual service connections, depending upon where the house is located on the lot.



MAP #1: Existing System Map (4 Distribution Zones)