

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-14532
Exam Date: 09/19/2023

1. Current Owner:
THE COVE AT STRONG CREEK HOA INC C/O ROBERT HANNA
PO BOX 3605 OLDTOWN ID 83822-3605

2. Accompanied by: Robert Hanna
Phone No: 509-217-7521
Address: PO BOX 28775 Spokane WA 99228
Relationship to permit Holder: HOA President

3. **SOURCE:**
GROUND WATER

Method of Determination: ArcMap and DRG layer.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap
2. Other water rights with the same point-of-diversion: NO Overlap

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER L4 (NE¼ SE¼), Sec. 29, Twp 56N, Rge 05W, B.M. BONNER County

Method of Determination: GPS; POD located at -116°58.8653, 48°10.2986 well D0058075.

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
56N	05W	29													1.7 L4				1.7

Total Acres: 1.7

PLACE OF USE: DOMESTIC

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
56N	05W	29													X L4				

Method of Determination: Beneficial use field examination & ArcMap aerial imagery.

- 3.
- X Delivery System Diagram Attached (required). Indicate all major components and distances between components.
Indicate weir size/pipe as applicable.
- X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be
1:24,000 or greater.
- X Aerial Photo Attached (required for irrigation of 10+ acres).
- X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Part No.	Pump Make	Pump Serial No. or Discharge Size
D0058075	CENTRIPRO	5	BF50 (80 Hz setting)	GOULDS	UNKOWN

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: I was unable to perform flow measurements due to inadequate pipe requirements. The main water line from well to pump house has a blowout valve but is located inline prior to the flowmeter installed on the system. The flow rate from blowout valve was too high to capture a 5-gal bucket test and the system doesn't incorporate storage and I was unable to run the pump at max capacity during the exam. A theoretic pump equation was computed during licensing review which derived a flow rate of 0.18 cfs based on the pump's capacity found at time of exam.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretic Pump Equation = 5 hp Goulds pump with matched CentriPro pump motor installed at a depth of 90 feet with operating pressure of 45 psi derives a flow rate of 81.5 gpm or **0.18 cfs** considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.7 \text{ af} \times 3.0 \text{ afa} = 5.1 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.05 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 21.2$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{5.1 \text{ af}}$$

2. Volume Calculations for Other Uses:

- Domestic annual volume = (8 homes x 0.6 af) + (1 stub-in x 0.6 af) = **5.4 af**
- Maximum diversion volume = 5.4 af (domestic) + 5.1 af (irrigation) = **10.5 af**

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 9/19/2023 with the applicant's representative, Robert Hanna – The Cove at Strong Creek HOA's president, showed a groundwater well providing domestic and irrigation water usage. At the POD, well D0058075 has a 5 hp Goulds pump & matched CentriPro pump motor installed diverting water directly to a small pump station that houses a velocity style flanged Recordall Model 170 flowmeter and a pressure tank. I was unable to perform flow measurements due to inadequate pipe requirements and a theoretic pump equation derived the diversion rate of **0.18 cfs** based on the 5 hp pump depth of 90 feet with 45 psi operating pressure.

Following the exam each beneficial use was validated with recommended diversion rates of 0.05 cfs for irrigation & 0.14 cfs for domestic which equal 0.19 cfs, but the applicant is limited to the maximum diversion rate of 0.18 cfs based on pump performance found at the time of exam. Following the exam, a phone conversation was held with a representative from the applicant's pump installation company, Inland Pump Company, which confirmed the 5 hp pump/motor was installed at 80 Hz.

Mr. Hanna provided water system schematics illustrating the development of the 2-inch main service lines, which branch from the pump house to serve 10 lots which includes a common area lot for minor irrigation. All but Replat Lot 5A & the HOA common area parcel have been developed for domestic use but a dedicated stub-in is present in Replat Lot 5A along with a frost-free hydrant and minor irrigation of fruit trees. The domestic POU was walked with Mr. Hanna, and I captured photographs and field maps sketches to illustrate the domestic use occurring on each lot for 9 service connections. ArcMap aerial imagery was used during licensing review to accurately trace out the domestic POU.

Of the eight parcels developed for domestic use, five have homes constructed, one has an RV being lived in while a tiny home is manufactured for delivery, and the remaining two have multiple RVs on each parcel. Mr. Hanna is uncertain how many individuals reside in each RV throughout the year. Based on the lack of information I'm recommending domestic use for 1 home per parcel to calculate annual volume recommendations for licensing, which equals 9 service connections x 0.6 af (in-home use only) = **5.4 af** considering department rounding standards.

The irrigation POU was illustrated through photographs and field maps during the exam. Arcmap aerial imagery was used along with Bonner County GIS tax parcel map software to validate and accurately trace out the irrigation acreage during licensing review. I'm recommending 1.7 acres toward licensing the irrigation beneficial use, which has an annual diversion volume of **5.1 af**. A few lots use pressurized sprinkler systems, but hose to portable sprinklers were found throughout the POU. The applicant pointed out that during the initial development a separate irrigation system had been plumbed but that was not in used for several years. I'm recommending only what I validated at time of field exam for current irrigation practices that date within the Permit's development period for license approval. The maximum diversion volume recommended for license approval equals the sum of two beneficial uses or **10.5 af**. I've removed condition 046 from the permit during licensing review. All other conditions from the permit shall be carried forward to licensing. There are no overlapping water right concerns toward licensing Permit 96-14532.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	04/01 to 10/31	0.05 CFS	5.1 AF
DOMESTIC	01/01 to 12/31	0.14 CFS	5.4 AF

Totals: 0.18 CFS 10.5 AF

2. Recommended Amendments

 Change P.D. as reflected above Add P.D. as reflected above X None

 Change P.U. as reflected above Add P.U. as reflected above X None

I. AUTHENTICATION

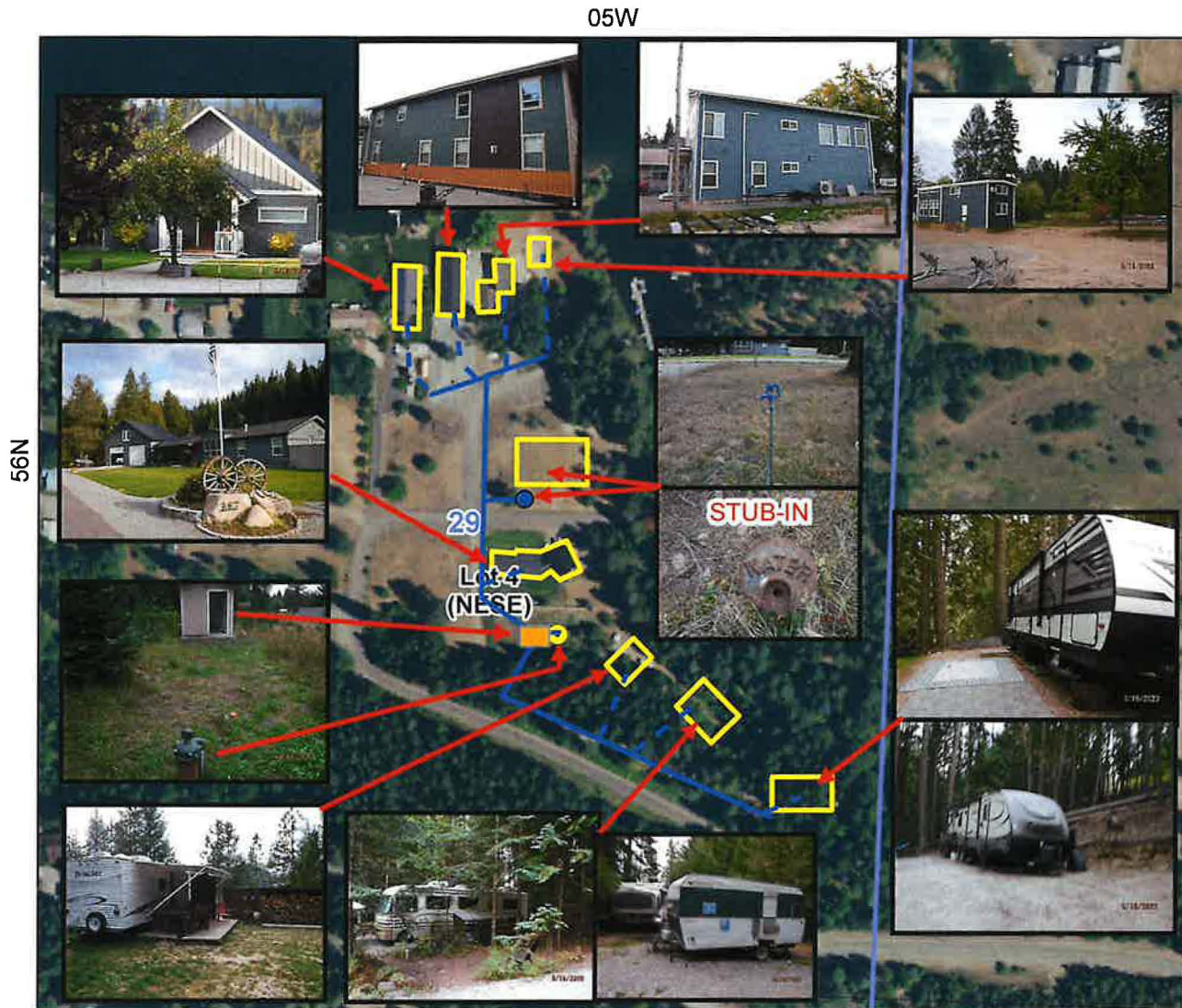
Luke Bates -

Field Examiner's Name [Signature] Date 12/12/2023

Reviewer Chris Bell Date _____

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-14532

This map depicts the DOMESTIC system diagram.



Reference APPENDIX A - FIELD EXAM MAP SUPPORT PAGE

- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters
- Point of Diversion



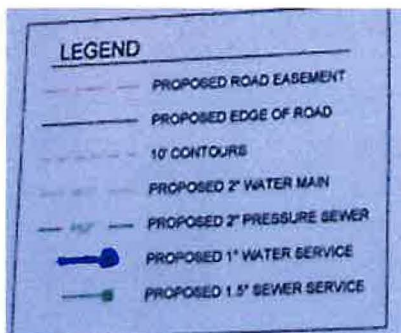
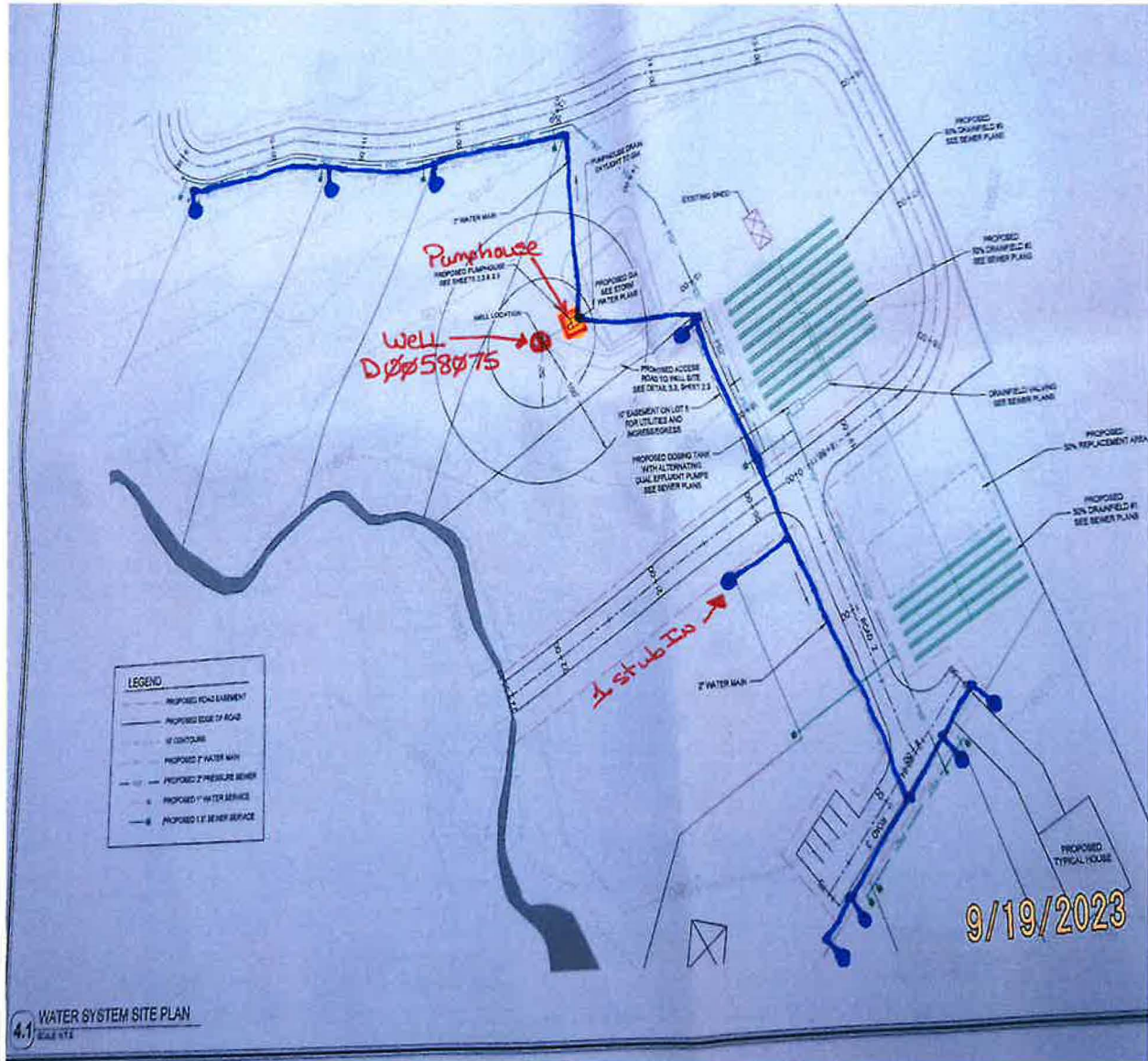
This map depicts the IRRIGATION system diagram.

Reference APPENDIX A - FIELD EXAM MAP SUPPORT PAGE

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Attachment to Field Exam
96-14532

This schematic depicts the water system infrastructure.



Nine water service connections – 8 active & 1 stub-in.

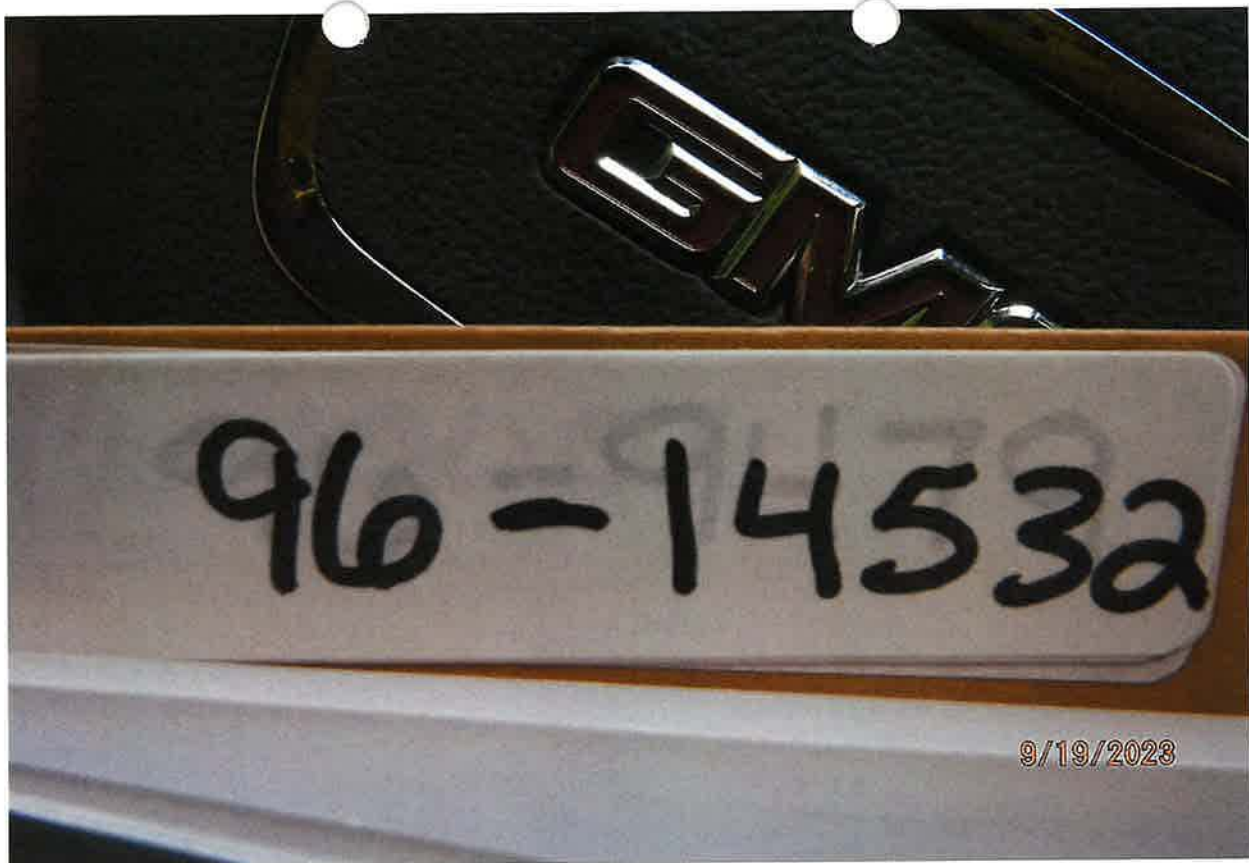
THEORETICAL PUMPING EQUATION(S) FOR WR# 96-14532

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 90 ft, and running at 45 psi.

PUMP EQUATION

WATER RIGHT No. 96-14532

D0058075	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q = HP*8.8*Eff/H	5	194.0816	0.8	90	45
Q = 0.182 cfs 81.5 gpm					



BENEFICIAL USE FIELD EXAM DATE 9/19/2023



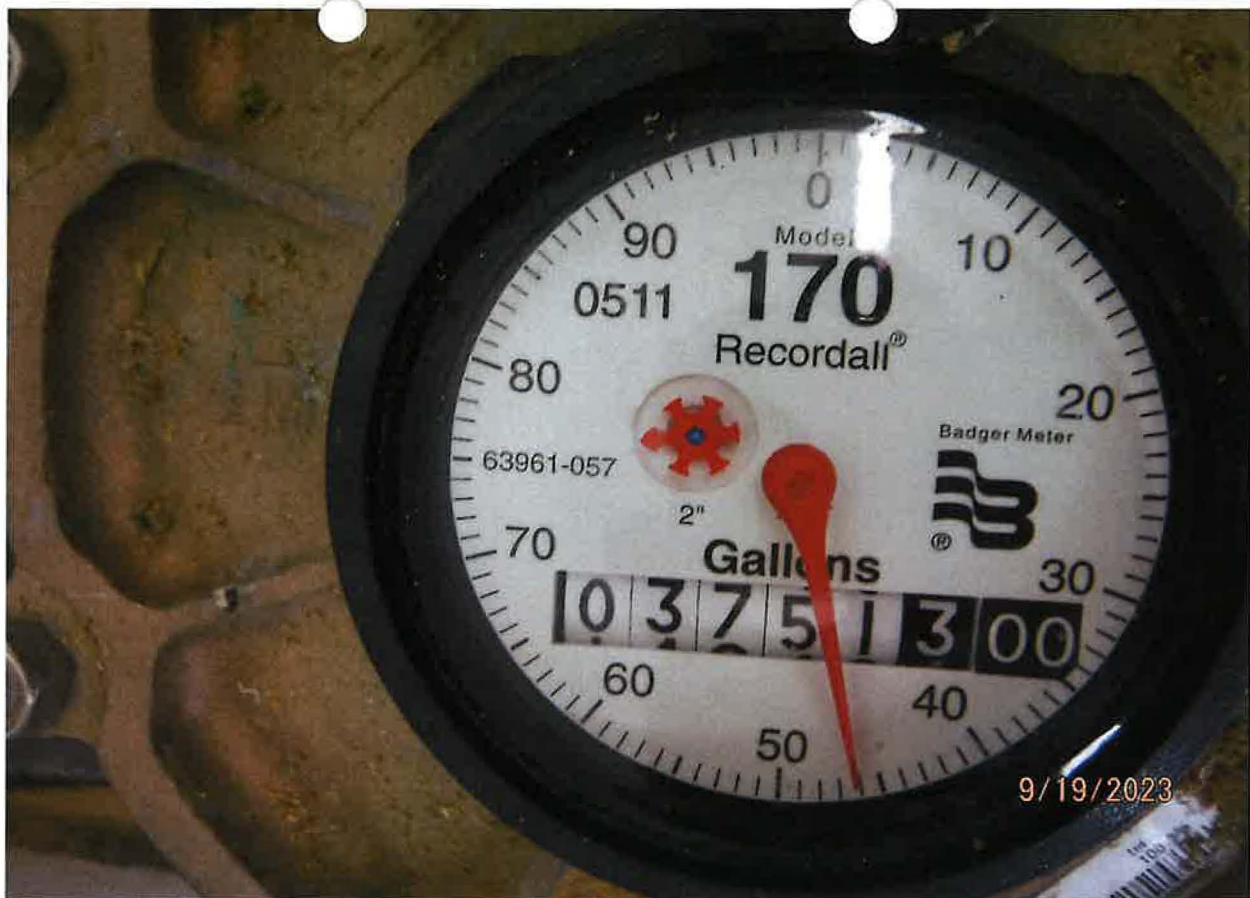
POD – GROUNDWATER WELL D0058075 (NO D-TAG VISIBLE ON UPPER 12' OF CASING)



WELL HEAD CO-LOCATED WITH SMALL PUMP STATION



INFLOW MAIN SERVICE LINE FROM WELL (ROUTES DIRECT TO BLOWOUT VALVE PRIOR TO FLOW METER)



RECORDALL MODEL 170 VOLUMETRIC FLOWMETER INSTALLED ON SYSTEM



45 PSI OPERATING PRESSURE MAINTAINED IN STEADY STATE

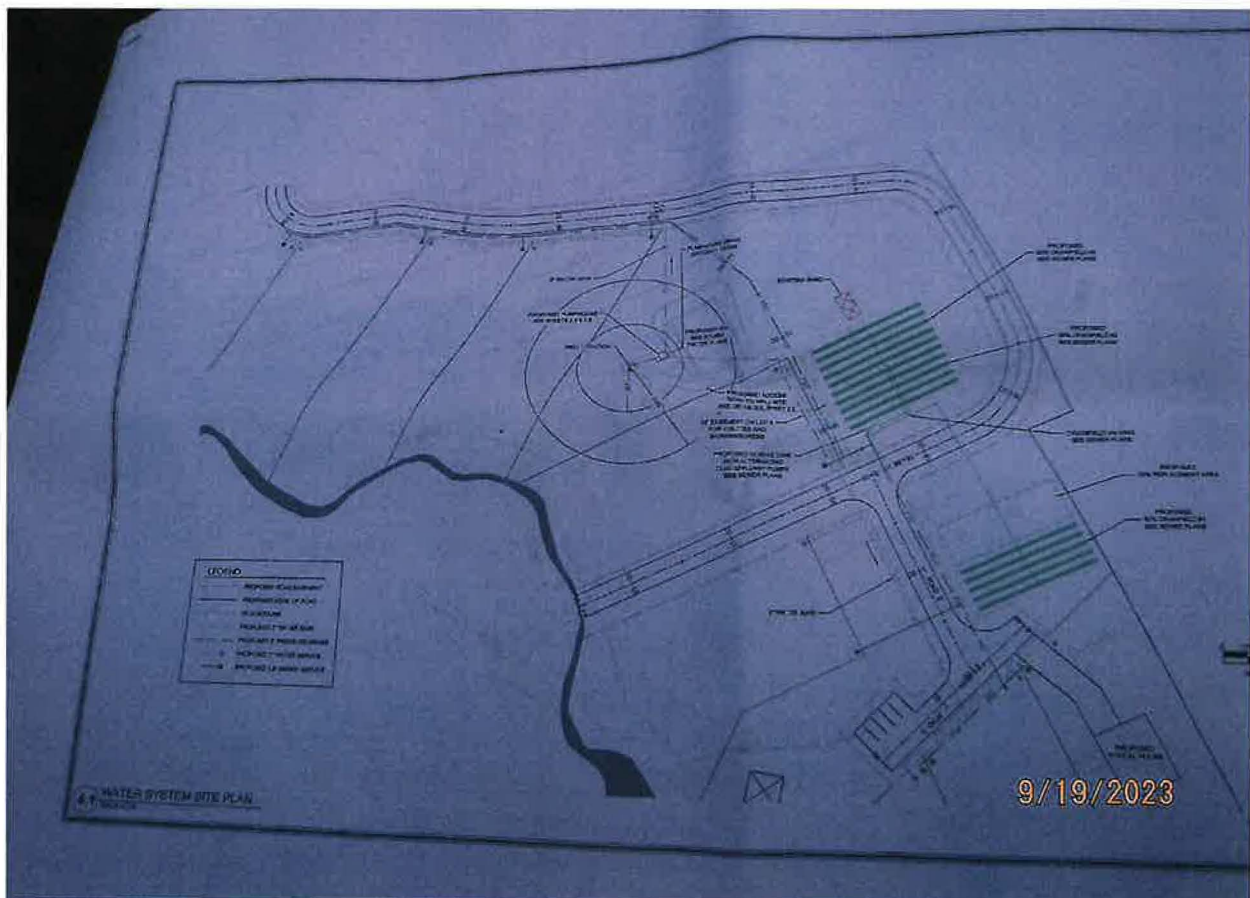


GOULDS PUMP WITH CENTRIPRO PUMP MOTOR INSTALLED IN WELL – BF50 5 HP MOTOR SET TO 80 Hz

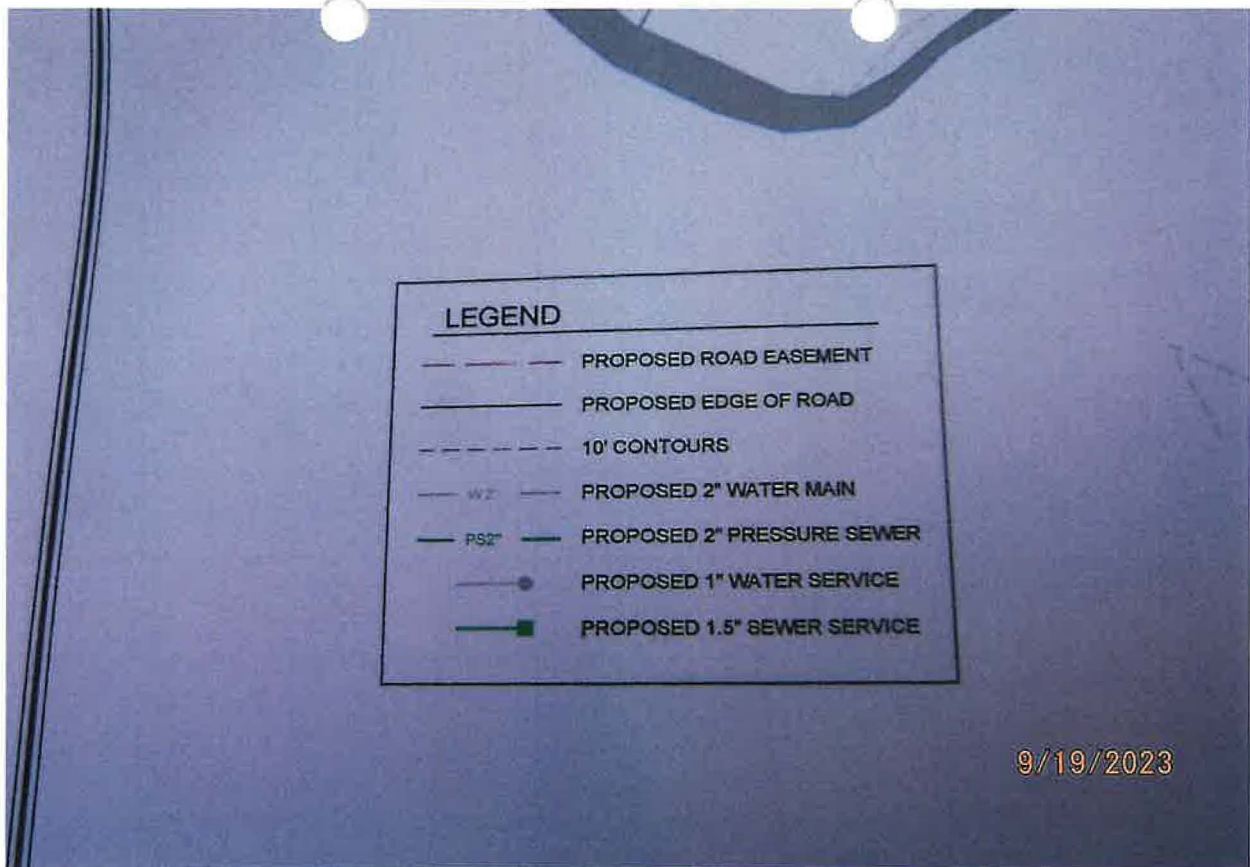




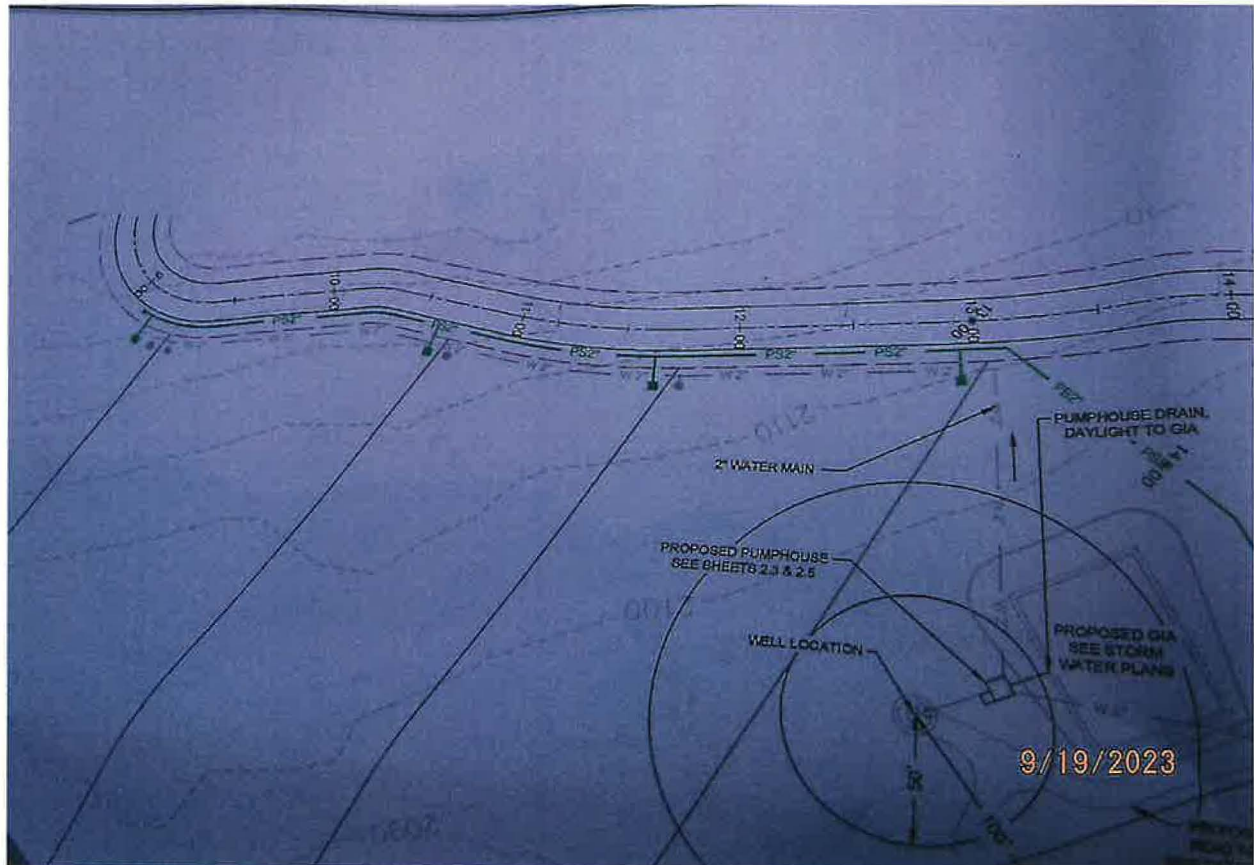
ONE 62 GAL PRESSURE TANK INSTALLED FOR DISTRIBUTION OF WATER TO NINE(9) HOMES USE



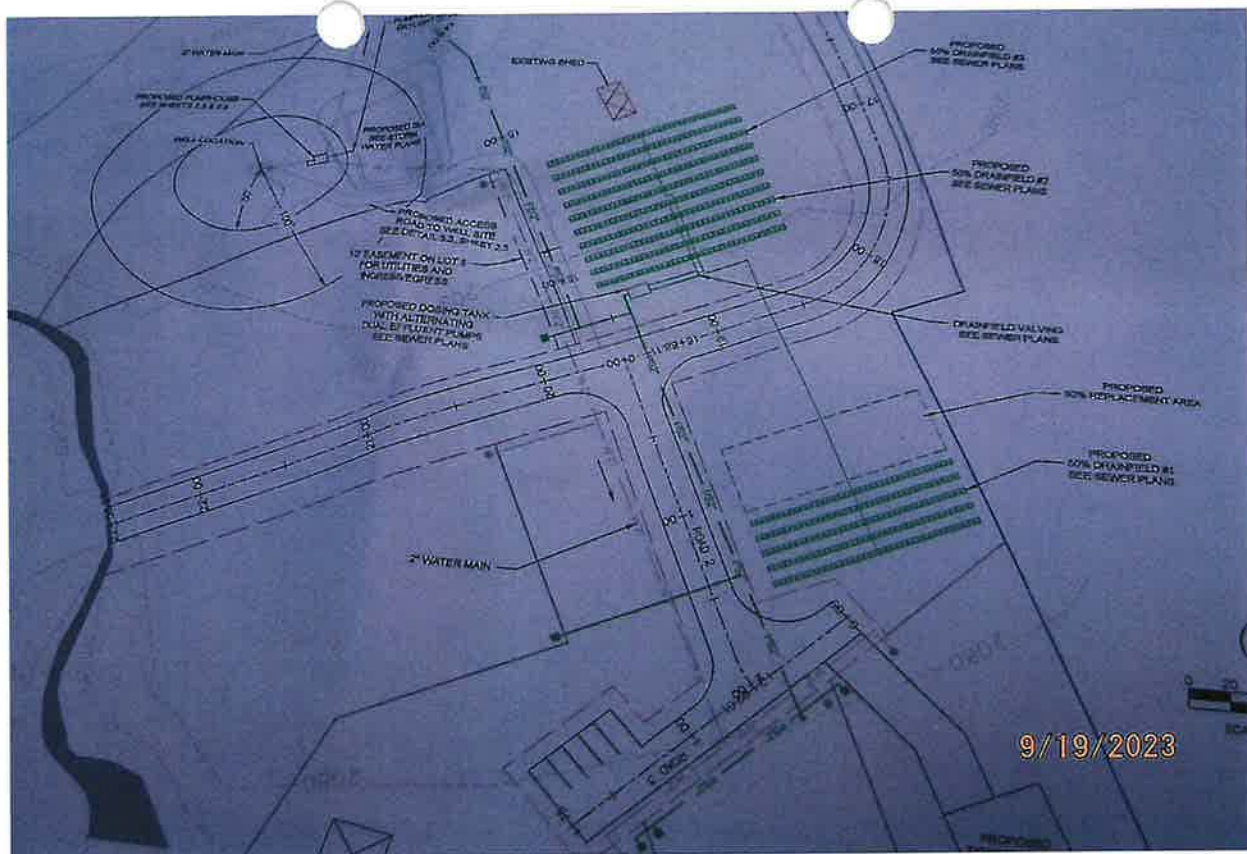
WATER SYSTEM SCHEMATIC MAP



WATER SYSTEM SCHEMATIC MAP – GRAY LINE WITH ROUND POINT ASSOCIATE WITH WATER SYSTEM



WELL & PUMP HOUSE ACCURATE TO SCHEMATIC



WATER LINE AND STUB-IN LOCATIONS ACCURATE TO BUILT-OUT OF SYSTEM





DOMESTIC POU & IRRIGATION POU – Lot 1, The Cove at Strong Creek Sub. RP02854000010A



IRRIGATION POU – ROAD SIDE VIEW, ADDITIONAL IRRIGATION PRESENT ALONG LAKEFRONT FOR LOT 1



DOMESTIC POU & IRRIGATION POU – Lot 2, The Cove at Strong Creek Sub. RP028540000020A





DOMESTIC POU & IRRIGATION POU – Lot 3, The Cove at Strong Creek Sub. RP028540000030A





DOMESTIC POU & IRRIGATION POU – Lot 4, The Cove at Strong Creek Sub. RP028540000040A





DOMESTIC POU – STUB-IN – Lot 5A Replat, The Cove at Strong Creek Sub. RP0285400005A0A



STUB-IN LOCATED WITHIN A COUPLE FEET OF THE FROST FREE-HYDRANT (ACCURATE TO SCHEMATIC DRAWING FOR WATER SYSTEM BUILT OUT)



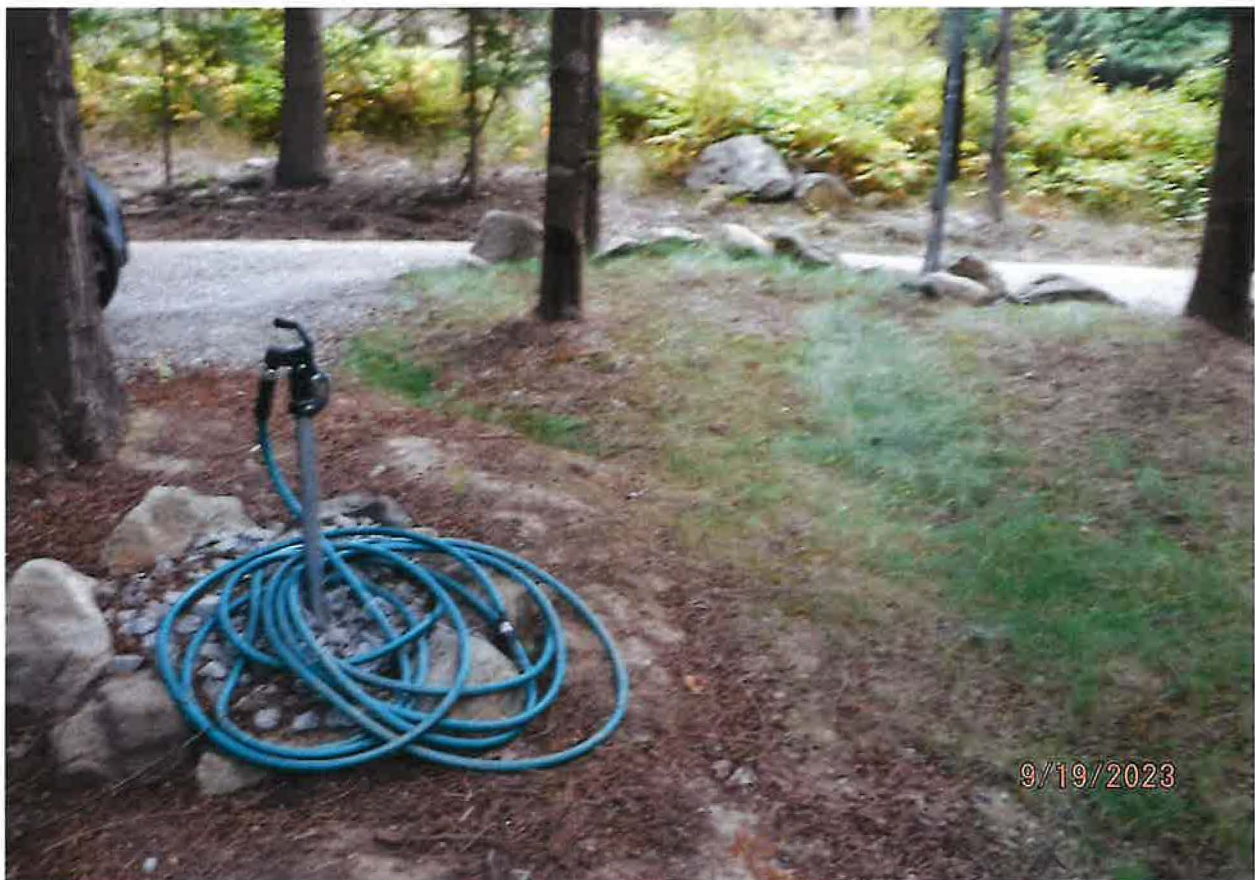
IRRIGATION POU – Lot 5, The Cove at Strong Creek Sub. RP02854000005A0A – FRUIT TREES WATERED ON ON PARCEL BY PRESSURIZED IRRIGATION SYSTEM FROM HYDRANT.



DOMESTIC POU & IRRIGATION POU – Lot 6, The Cove at Strong Creek Sub. RP028540000060A – FENCED IN BACK YARD AND SIDE YARD BEHIND SHOP ALSO IRRIGATED (REF AERIAL IMAGERY)



DOMESTIC POU & IRRIGATION POU – Lot 7, The Cove at Strong Creek Sub. RP028540000070A – TINY HOME IN PROCESS REPLACING RV ON SITE (PAD BEING BUILT FOR CABIN AT TIME OF EXAM)

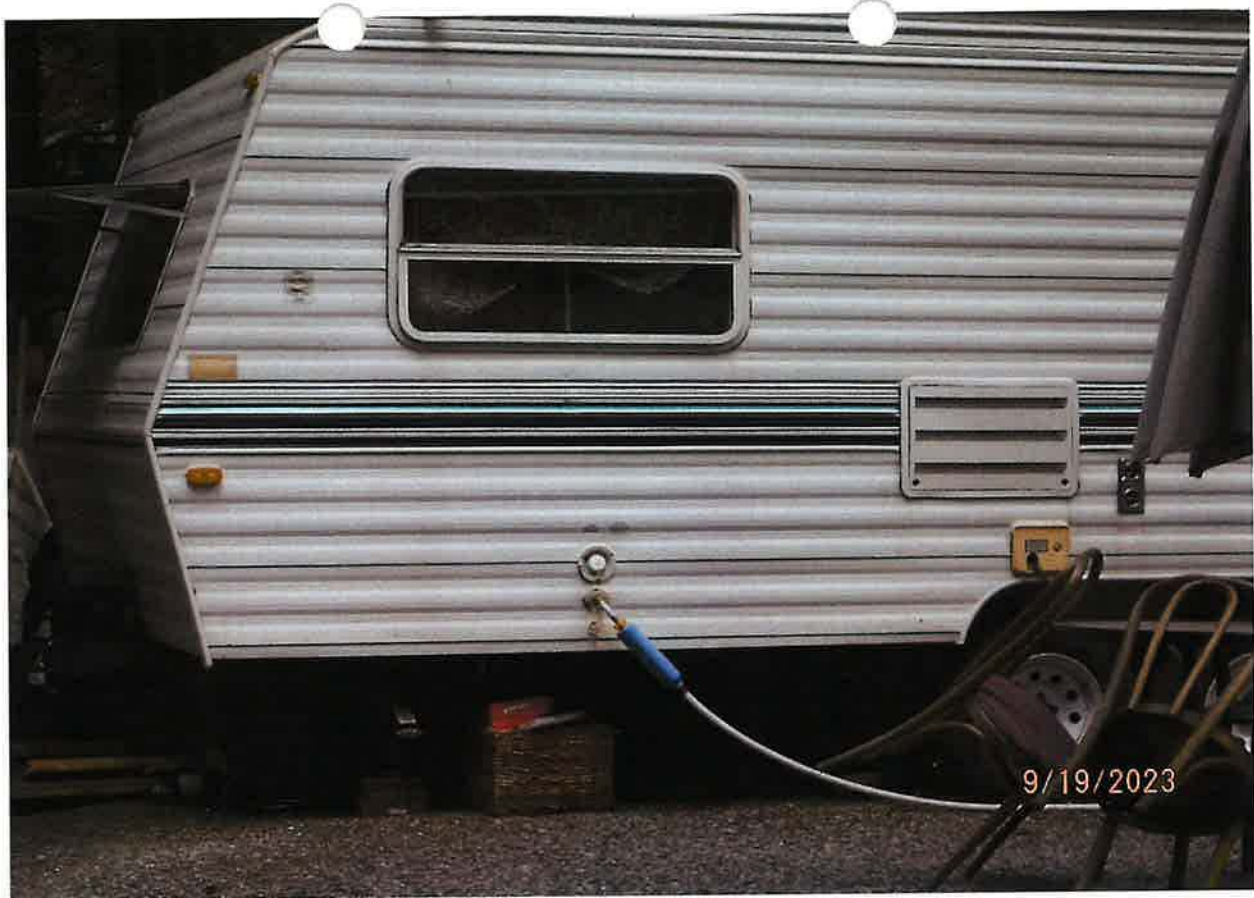


TWO FROST FREE HYDRANTS WITH HOSE & SPRINKLERS LOCATED ON LOT 7 – SMALL AREA IRRIGATION BY PORTABLE SPRINKLER



DOMESTIC POU – Lot 8, The Cove at Strong Creek Sub. RP028540000080A – RVs CONNECTED TO SYSTEM VIA FROST FREE HYDRANT – SEWER CONNECTIONS TO UNITS ACTIVE





DOMESTIC POU – Lot 8, The Cove at Strong Creek Sub. RP02854000080A



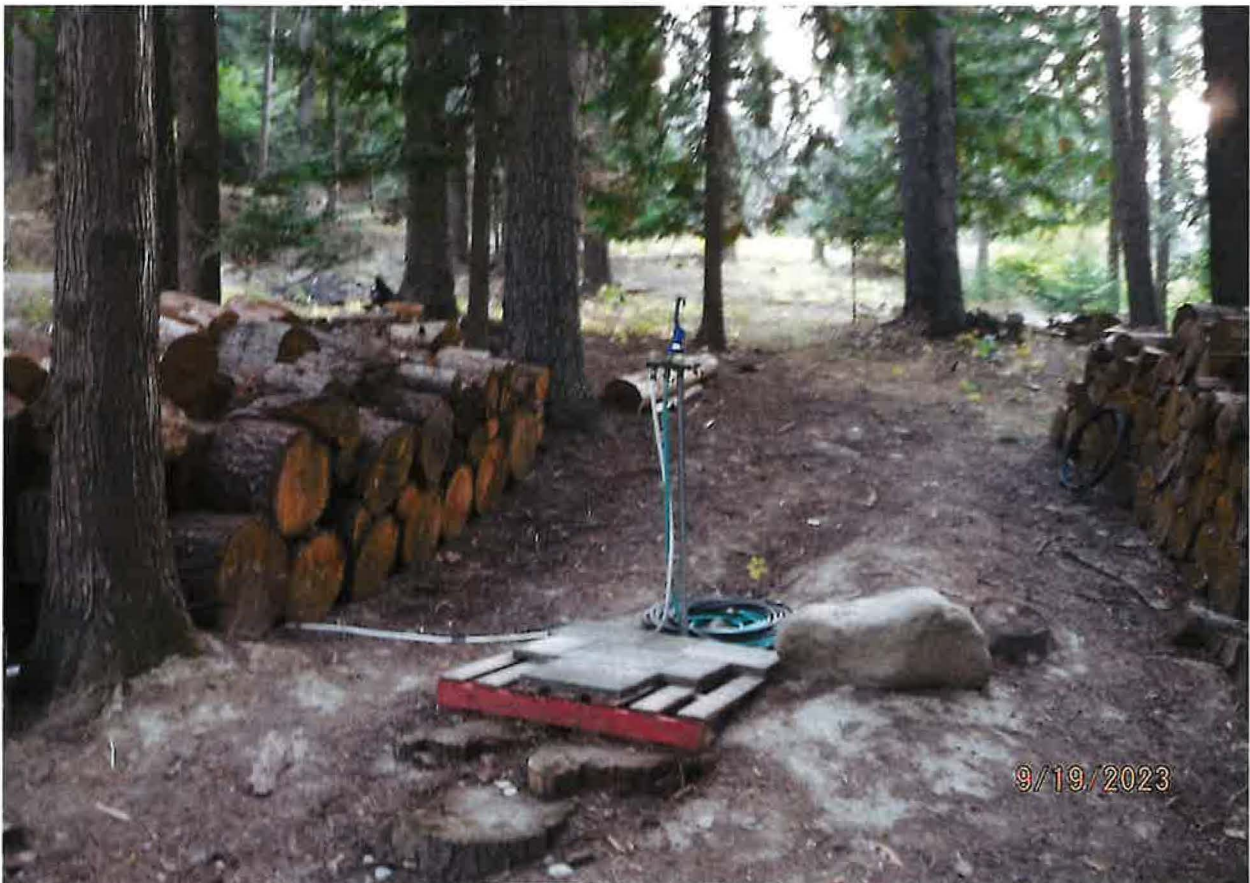


DOMESTIC POU & IRRIGATION POU – Lot 8, The Cove at Strong Creek Sub. RP028540000080A – Two RVs and small irrigation area





DOMESTIC POU & IRRIGATION POU – Lot 8, The Cove at Strong Creek Sub. RP028540000080A – Two RVs and small irrigation area



HOSE CONNECTION FROM FROST FREE HYDRANT (NOTE 2EA HOSE BIBS ACTIVE FOR EACH RV)