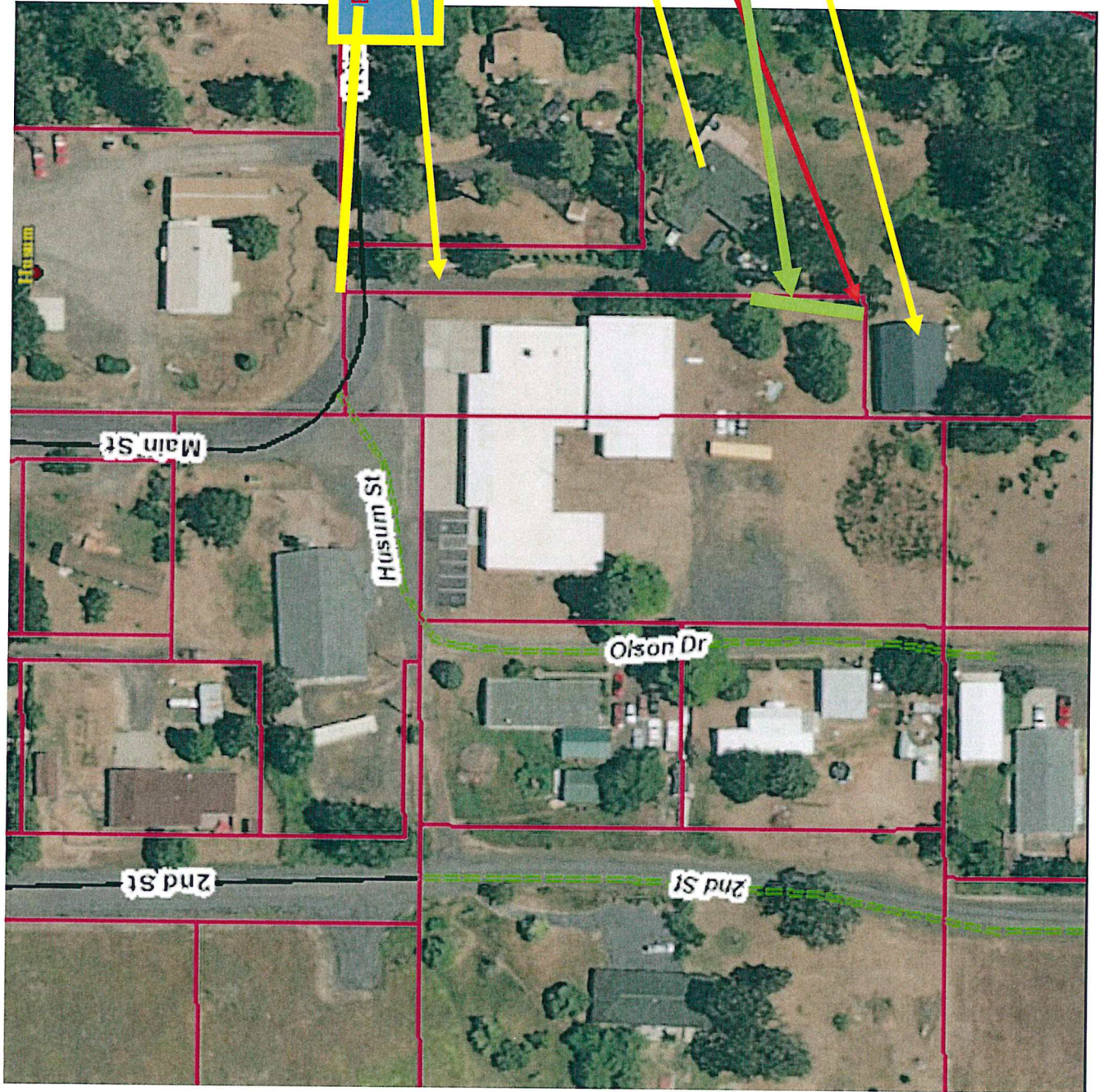


DISCUSSION ITEM SUBJECT	Security Fence
PRESENTER	mHc
PREVIOUS BOARD DISCUSSION	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> The Board has had a number of occasions to hear testimony regarding “findings” concerning property line issues at several locations on fire district property. All of these were discovered through the preliminary steps of obtaining a Klickitat County Conditional Use Permit. <input checked="" type="checkbox"/> K-3 Staff has had a number of conversations with the Bosquet family regarding the portion of their driveway that crosses over onto plotted Fire District property. <input checked="" type="checkbox"/> IN REVIEW, the Bosquet encroachment is quite different than that of the Olsen Drive encroachment. There are no existing “deeds” or road access agreements recorded or present on either Statutory Warranty deed for all three involved property plots sharing the East K-3 property line. It appears that the previous owners of the Bosquet property ‘perhaps’ estimated where the SE property corner when they constructed the large shop building. Subsequently there is a visible driving surface that crosses onto surveyed K-3 property approximately 48 feet before the SE K-3 survey monument. <input checked="" type="checkbox"/> At the Board meeting on the 11th, the Board discussed at great length the issue and had an open dialogue with the Bosquets regarding the Options available. <input checked="" type="checkbox"/> The Board unanimously approved Option #2 and instructed mHc to obtain the necessary documents and discussions to obtain closure on the issue. That Option was: <ul style="list-style-type: none"> <i>Option 2. The District could enter into a formal agreement under which the property owner agrees to waive any claims of adverse possession and to sign a quit claim deed for the 45 square foot encroachment area (that we could record to make a record of the release and waiver of any claim). In exchange for this the District could then assist with the cost of relocating the driveway off of the Districts property. The benefit of this approach is that it would give the District 100% ownership of the 45 square foot area. The disadvantage of this approach is that it would be a more cumbersome and expensive approach than the easement option.</i> <p><input checked="" type="checkbox"/> As a reminder, the Board has expressed their desire to be ‘good neighbors’ and so the issue at hand does not reflect on a negative attitude by the Board towards their neighbors.</p>

	<ul style="list-style-type: none"> ☒ The Bouquets requested additional time before implementation of Option #2 and subsequent screening and security fencing. The Board then extend the offer until January 9th, 2020.
<p style="text-align: center;">FOLLOW-UP STAFF INFORMATION</p>	<ul style="list-style-type: none"> ☒ This issue landed in legal counsel hands by choice of the Busquets and subsequently, as the Fire District incurred additional costs for the delay. ☒ The Fire District's legal counsel reached out several times to the neighbor's legal counsel and JUST TODAY, received the following reply: <p>From: Justin Leigh <justindleigh@gmail.com> Subject: Re: Bosquet + Husum Fire Dist. Date: January 8, 2020 at 9:24:41 AM PST To: Brian Snure <Brian@snurelaw.com></p> <p>Good morning Brian,</p> <p>I have spoken to my clients and, first and foremost, they would like the opportunity to sit down with your clients to amicably discuss this driveway situation, preferably without the presence of Mr. Merritt, whom they feel is unfairly biased against them. While they'd like to find a friendly way for everyone to coexist, they also understand your client's desire to move forward in a more conclusive way with the driveway matter. If there's no avoiding that, then my client would, at the very least, appreciate the ability (again, without Mr. Merritt) to perhaps take a step back and arrive at a fair, neighborly agreement. My clients, however, are unable to attend your meeting tomorrow afternoon. Perhaps we can arrange another time if your clients agree?</p> <p>Apart from that, from a more substantive point of view, my clients would like to work with your client to mitigate the cost of rerouting access to the shop. In addition to moving the actual driveway, my clients will need to remove (and replace) a tree, and move a well spigot. What amount of monetary or in-kind support would your client provide to make this happen? Additionally, if your client is willing to assist with the cost mitigation, would your client be willing to enter into a settlement agreement whereby, amongst other things, they agree NOT to build a fence on the property line?</p> <p>Please give me a call so we can further discuss this matter. My number is 312-343-8607.</p> <p>Best, Justin</p> <p style="text-align: center;">☒</p>

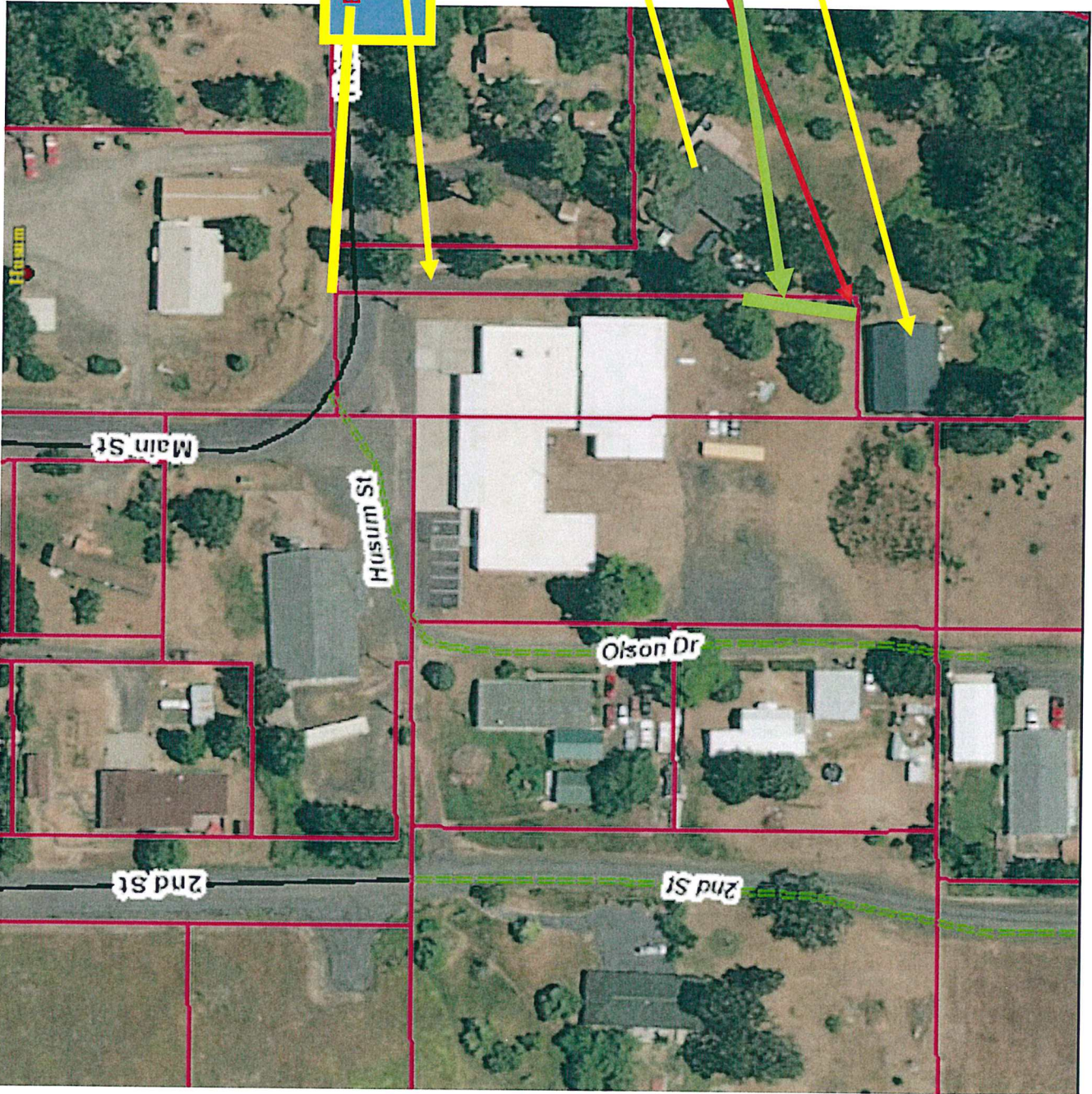
**STAFF
RECOMMENDATION**


- ✘ Staff simply submits that the proposal to being security and screening fence amenities were, from the beginning, a core improvement at the Station #31 site.
- ✘ Additionally, after all of the discussion, mHc would remind K-3 that the subject at hand is NOT the installation of a fence. The subject at hand is the encroachment onto public property and the appropriate and effective means to mitigate that in representing the public.




EAST K-3 property line corner stake
Bosquet Driveway

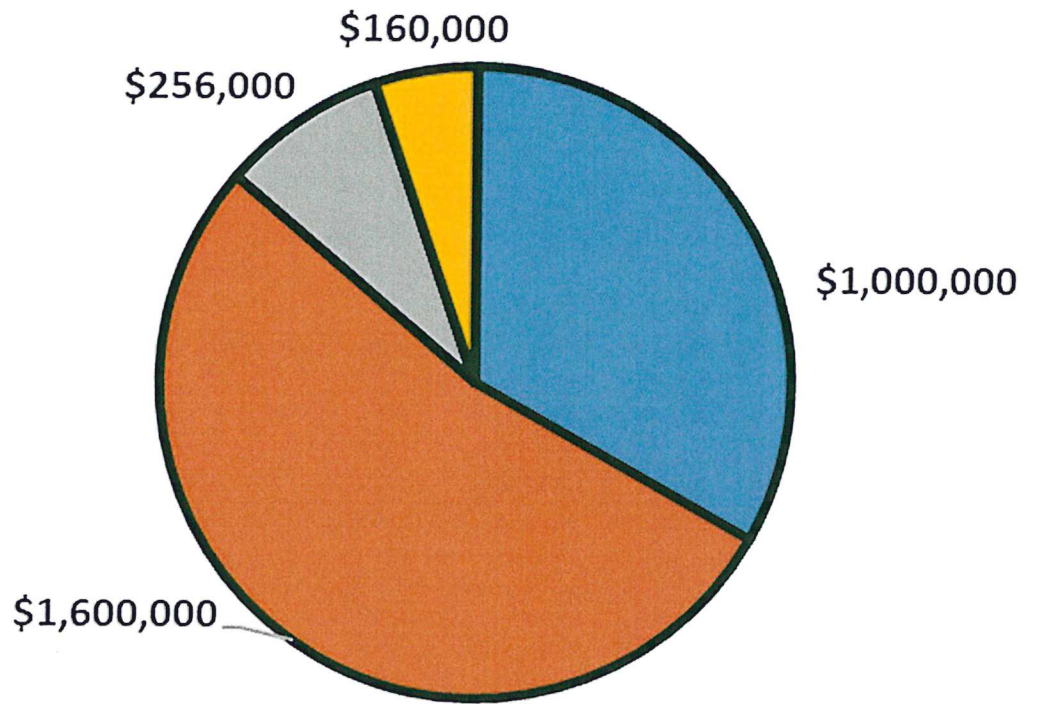
Bosquet Home
SE K-3 property corner
Bosquet Encroachment
Bosquet Shop



DISCUSSION ITEM SUBJECT	Station #31 Septic Eval
PRESENTER	mHc
PREVIOUS BOARD DISCUSSION	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> The Board and K-3 Staff nearly completed all of the initial and secondary engineering survey efforts <input checked="" type="checkbox"/> The Board has been recipients of said engineering reports plus a few verbal reports at Board meeting. <input checked="" type="checkbox"/> The remaining evaluation is the analysis and locating of the Station #31 septic system
FOLLOW-UP STAFF INFORMATION	<p> mHc has been working with the Klein and Associates Civil Engineer to develop important parameters for what the engineer feels is necessary to adequate LOCATE and EVALUATE the current state of the sanitary sewer system and drain field behind Station #31. Those items are reflected in the following Klein email</p> <p>Hi Bob,</p> <p>Here's some info Elizabeth put together. David from the [Klickitat] County Health Authority said we may want input from certified installers, depending on what issues come up during the inspection. His list of installers is attached. Also attached is Speedy Septic info sent by them to Elizabeth. There are two email chains (each are short) below for you to read. Basically, she came up with 2 options for inspectors – Speedy Septic and Bloomquist Septic Inspection. The County recognizes Washington State On-Site Sewage Association (WOSSA) accredited inspectors Level 1 and 2. Speedy Septic is DEQ certified (pertains to Oregon), but they are also on the certified installers list for Klickitat County – Elizabeth's feeling was that they likely would be recognized, even though their certification pertains more to Oregon. Anyways, read through the info below and let us know if you have any questions – also please let us know if you get someone on the books and what their schedule for inspection looks like.</p> <p>If you choose to search for other inspectors, here is the scope Elizabeth is looking for: I'd like to see this..</p> <ol style="list-style-type: none"> 1) Tank pumped 2) Tank and baffles inspected for condition/function/capacity/material 3) D-box located and inspected and assessed for condition/function, plus flagged or dimensioned so we can find it later.

	<p>4) Drainfield located and inspected for condition/function/size (including small test pits), plus flagged so we can find it later.</p> <p>5) Report with all of the above, photos of components, and recommendations Must be approved to work on septic's in Klickitat County or certified with WOSSA. To quote the County Sanitarian, "We recognize Washington On-Site Sewage Association (WOSSA) accredited inspectors Level 1 and 2  Klein and Associates has estimated that this inspection would run in the neighborhood of \$1,200.</p>
BOARD ACTION	<ol style="list-style-type: none"> 1. Does the Board agree that the inspection should be done by a certified inspector? 2. Does the Board want Staff to move forward with quotes from the two qualified septic companies?
BUDGET IMPACT	UNKNOWN

K-3 Capital Projects Funds



Construction projects
Equipment purchases
Professional fees
Sales tax

Real Estate Inspection FAQ/Pricing & Septic System Facts

Q: What is a buyer or seller of a home in Washington required to do regarding their septic system?

A: Whether or not an inspection and/or pumping is done is typically negotiated privately between the buyer and seller. There is not a statewide law requiring any septic inspection at time-of-transfer.

Q: What is the difference between a Certified Inspection and a Non-Certified Tank Only Inspection?

A: The Certified Inspection inspects every component a septic system can have (see Septic System Facts at the end of this document for explanations of different system types), and is performed by one of our Certified Technicians, using Certified Evaluation Report, the inspection form that includes an as-built of the system drawn to scale, any permit records found, photos of the system uncovered at the time of inspection, maintenance logs & instructions for care of the system – all mailed out in a booklet, post inspection (the report is emailed out prior, as detailed below). This inspection will also determine if the septic system is located entirely on the property, or if it is partially located on a neighboring property, what percentage of the drainfield is used up, whether the drainfield lines are collapsed or not, and if there are solids building up in the line between the septic tank and drainfield.

The Non-Certified Tank Only Inspection is a more basic inspection, only covering the septic and/or dosing tank(s), it includes a typed report emailed out (as detailed below), but it will not come with photos, the drawn-to-scale as built, the care instructions & the maintenance logs. It's important to note that this inspection option, while more affordable, does not include inspecting the secondary treatment unit(s) of the system – like a drainfield – and replacing those portions of the system are typically the most expensive & time consuming components to replace so ensuring that the system in question has been well cared for is essential if you're planning to choose the Tank Only option.

Q: How are the septic inspections scheduled? When will we see the results?

A: Speedy Septic schedules inspections Sunday-Thursday, and we email the report out on Fridays, by the end of the day. If you've chosen a Certified Inspection, we will also mail out a booklet within approx. 30-45** days that will contain a hard copy of the emailed report, any county records we can locate, photos taken during the inspection process, an as-built map of the system and septic care instructions with a maintenance log.

** The hard copy can be expedited to ship one week after the report is released for an additional \$25 fee.

Q: Who typically pays for the inspection? What payment methods do you accept?

A: We see all different ways of handling this. It depends on what was agreed to during negotiations between the buyer & seller. We can support splitting the bill, or having only one side or the other pay – whatever works best for everyone. We can accept cash, check or any major credit/debit card and we do require payment at the time of service, either with the technician on site, or, if no one will be present for the inspection, by calling the office with a credit/debit card before the inspection appointment time.

Q: Can Speedy Septic be paid from escrow?

A: Unfortunately, we are not set up to take payment out of escrow at this time.

Q: What if the home is vacant? Do you need access to the home to inspect a septic system?

A: Typically, the answer is no. Unless there is a pump system that has a control panel located inside the home, then we would require access to test that panel for the inspection. However, we do need water and power turned on at the home and it is helpful to have someone who can run water in the home to test flow to the system, but it isn't required.

Q: We are ready to get on your schedule. What's the next step?

A: We would set up a tentative appointment and take some basic info. for the appt. and then email you an agreement that we need to have the person paying for the inspection portion to complete and sign and then the seller of the home (if different) will also need to fill out & sign their portions of the agreement. We will need to have this completed & signed agreement back into our office by 3pm the business day prior to the inspection date to confirm the appointment & keep it on our schedule. Unfortunately, due to late cancellations/no shows and the preparations needed to ensure a complete inspection, we will have to remove the appointment from our schedule if this agreement is not completed and sent in on time.

Q: Can the technician give an idea about the system's condition while performing the inspection?

A: Unfortunately, the technicians are on site to perform an evaluation and they are directed to record their findings on site, then those results are transferred into the report format and emailed out by the deadline noted above. They are not permitted to give any condition information on site. There could be an exemption of this guideline if you are having a Tank Only Inspection and the technician on site determines there may be issues with the secondary treatment unit(s) and needs to recommend a more complete inspection.

Q: What if you find repairs are needed to the system?

A: We are a full-service septic provider. We can handle any septic repairs or installations that the system may need. Typically, we will send a proposal out with the report so that you can have that quote and information as soon as possible.

Q: Who do you send the results to when you email them?

A: We practice strict confidentiality. The report is only sent to the person who paid for the inspection portion of the services. However, there is a place on the agreement where additional people can be authorized to receive the results.

SEPTIC INSPECTION PRICING

Certified Full System Inspection includes:

Inspecting *all* system components, including:

septic tank, dosing tank, pump system(s), sandfilter/ATT system (Alternative Treatment Technology) components

Pumping Costs

Minimum pumping charge - \$375

This includes pumping up to 500 gallons. If the tank is larger than 500 gallons or holding more than 500 gallons, there is an additional .38 cents per gallon charge for any overage.

**** If the septic or dosing tank has not been pumped regularly and the solids content tests at over 40% there will be an additional \$185 flat fee. The test will be performed prior to pumping the tank.**

Locating & Uncovering the System Components

\$195/hr., One Hour Minimum

This includes locating & uncovering the full system with a locating device and flagging, measuring and mapping out the system components.

Certified Full System Inspection & Report

\$395 Flat Fee

This includes testing and evaluating all the system components, converting the field notes onto the Certified Inspection form, on-site photography labeled and formatted, drawing of the system as-built to scale, researching the system & pulling any records located, creating a booklet containing all the above, along with a maintenance log and care tips.

Non-Certified Tank Only Inspection includes:

Inspecting septic tank and/or dosing tank(s)

Pumping Costs

Minimum pumping charge - \$375

This includes pumping up to 500 gallons. If the tank is larger than 500 gallons or holding more than 500 gallons, there is an additional .38 cents per gallon charge for any overage.

**** If the septic or dosing tank has not been pumped regularly and the solids content tests at over 40% there will be an additional \$185 flat fee. The test will be performed prior to pumping the tank.**

Locating & Uncovering the System Components

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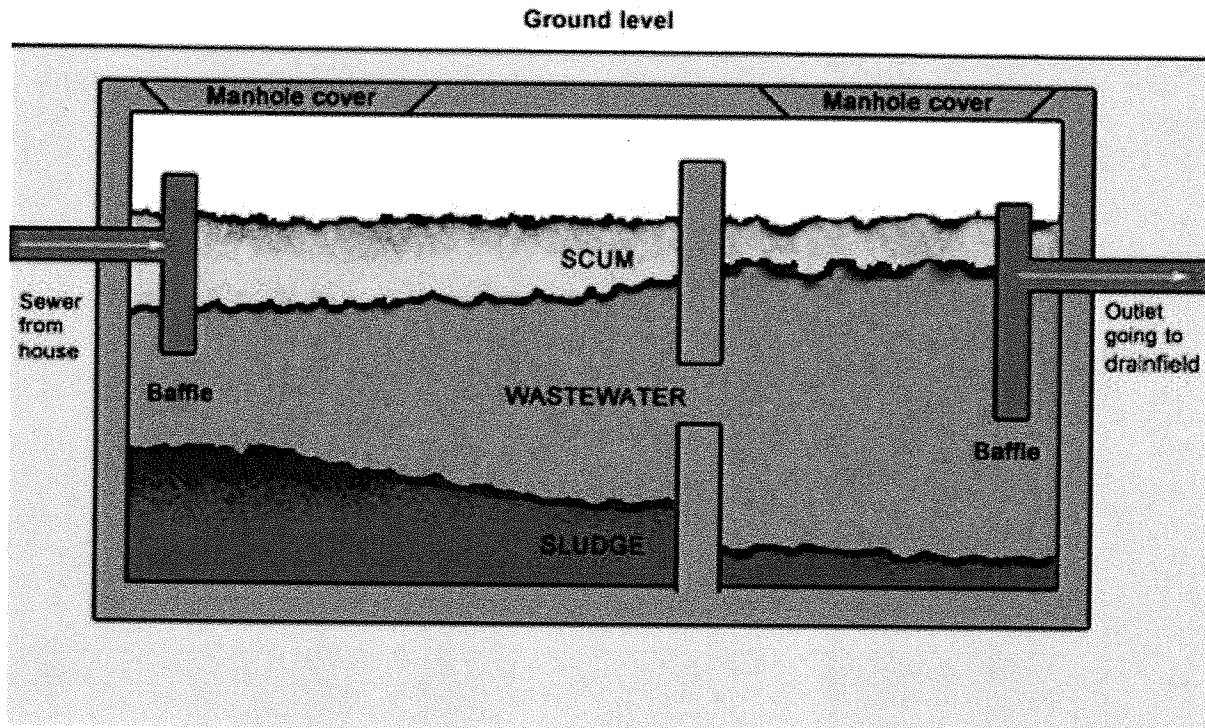
Non-Certified Inspection & Report

\$250 Flat Fee

This includes testing and evaluating the septic tank and/or dosing tank(s), converting the field notes onto the report form.

General Septic System Facts & Information

SEPTIC TANKS & THEIR OPERATION



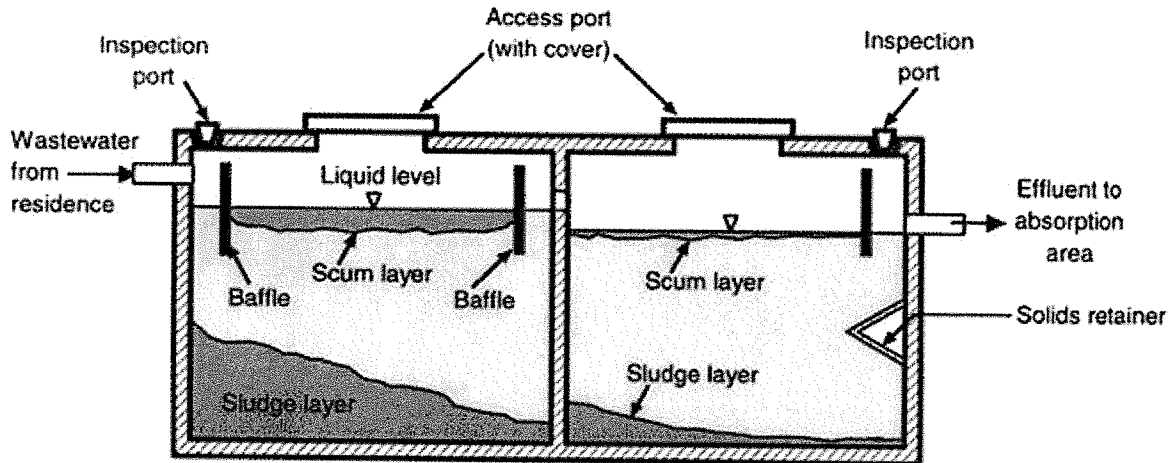
This is a standard, gravity-fed, single compartment septic tank.

The scum layer contains the grease, fat & other non-water soluble things that go down the house's drains/toilets.

The wastewater layer (also known as the effluent layer) contains the treated water that has cleared and can safely leave the septic tank to the next step in the septic system.

The sludge layer at the bottom (also referred to as the solids layer) contains all the solid material that is not supposed to leave the tank or enter any other system components – and is the material that needs to be pumped out on a regular basis.

As you can see, septic tanks are designed to leave some room at the top, in case of a blockage or a large amount of effluent water comes into the tank, to prevent backing up out of the tank lids, or into the home. A septic tank's capacity, which could be anything from 500 gallons, 1000 gallons or 1500 gallons and up, depending on the number of bedrooms in the home, is how many gallons the tank can hold up to its normal operating level – meaning just above the invert of the inlet and outlet baffles. The amount of liquid a tank can hold, however, is usually several hundred gallons over its stated operating capacity.

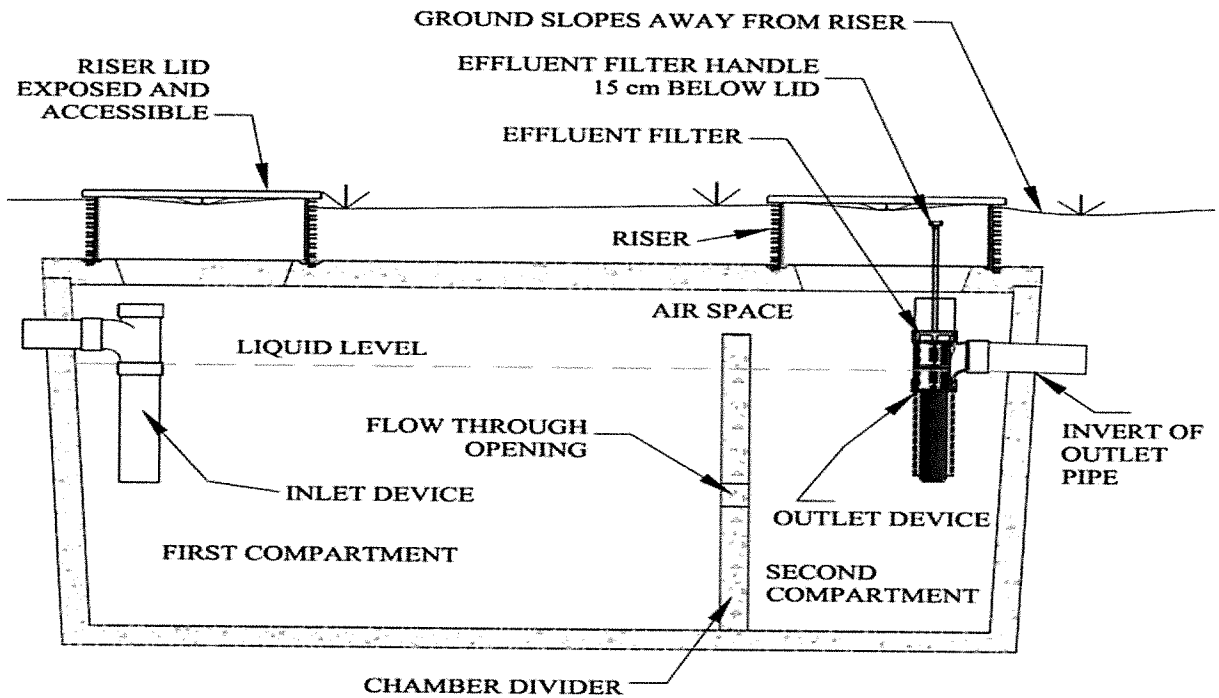


This is a standard, gravity-fed, two-compartment septic tank.

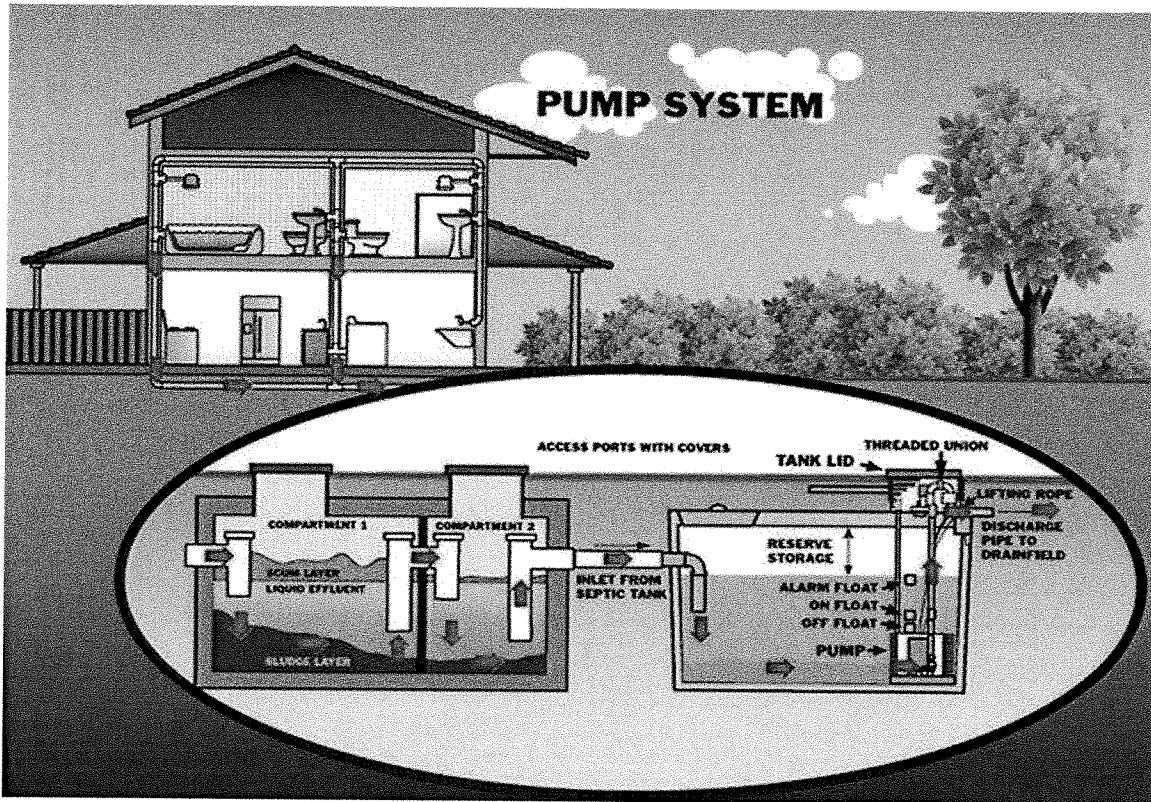
In the first compartment, all the processing of the sewage is occurring and only the clear effluent or wastewater layer should leave and go into the second compartment, where it then goes out to the next system component.

When pumping the two-compartment septic tank, both sides should be pumped to allow for a complete visual inspection of the tank and the baffles.

CONTINUED



This is a gravity-fed, two-compartment septic tank with an effluent filter. In the first compartment, all the processing of the sewage is occurring and only the clear effluent or wastewater layer should leave and go into the second compartment, which contains the effluent filter, which helps to ensure no solids leave the tank and enter the secondary treatment units, where they can cause a serious and expensive problem. These filters are often placed on a system that gets a lot of use, or one that has a fragile drainfield that we are trying to prolong the life of. This effluent filter should be cleaned at least once a year, maybe more, depending on how much usage the system gets.



This is a septic tank and dosing tank system, where the septic tank is a two-compartment tank and the dosing tank houses a pump system.

In the first compartment, all the processing of the sewage is occurring and only the clear effluent or wastewater layer should leave and go into the second compartment, which contains the effluent filter, which helps to ensure no solids leave the tank and enter the dosing tank, where they can cause a serious and expensive problem.

The pump system contains different floats, attached to a float tree. These floats tell the pump when to turn on and pump down, when to shut off and when to sound the alarm to warn you the tank is about to overflow or if the liquid levels are too low, which can burn out the pump.

A pump system is used when the secondary treatment units are uphill from the septic tank, meaning naturally occurring gravity will not allow the effluent water leaving the tanks to get where they need to go, so the pump pushes the effluent along down the line.

There is an electrical panel attached to a system like this, and ideally its located close to the system on a pole, or in an outbuilding, but sometimes they are located inside the home or garage.

The pump system needs to be inspected and cleaned at least once a year, unless the usage is heavier than normal, and after a new family moves in, there may need to be some adjustments made to the float set up & operations panel so that it's programmed to understand the new flow levels it will be processing and not set off the alarms.

***There are other types and combinations of tanks on the market today and in years past which are still installed. Tanks have been made from steel, concrete and plastic. There are varying reasons for using each type, and an inspection can inform you more on what those reasons are.

TYPICAL PUMPING SCHEDULE, BASED ON HOUSEHOLD & SEPTIC TANK SIZE:

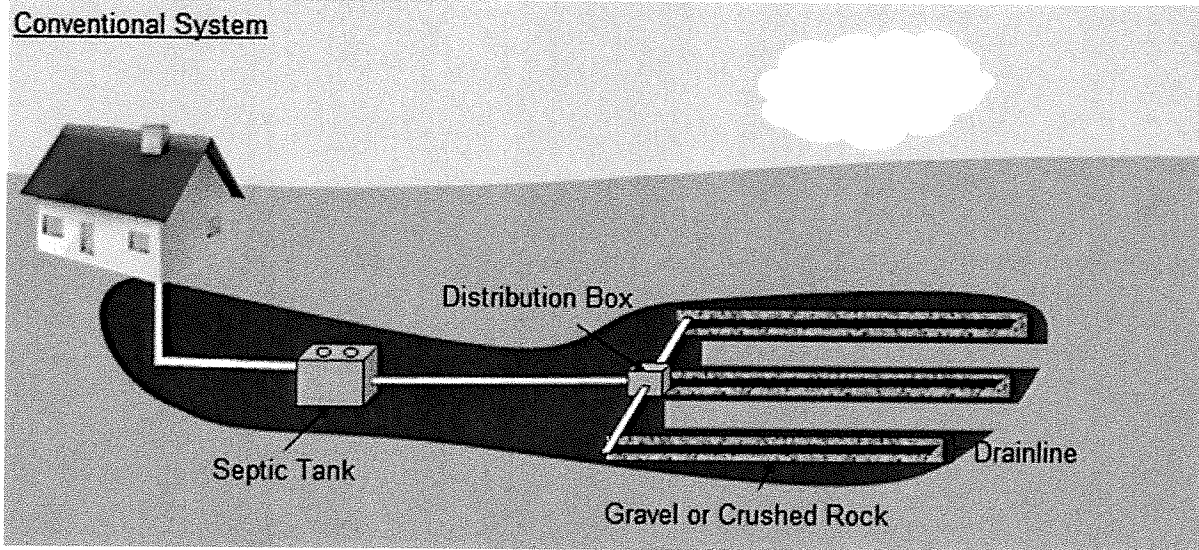
Table I. Septic Tank Pumping Frequency in Years										
Tank-Gallons	Household size - Number of Occupants									
	1	2	3	4	5	6	7	8	9	10
500*	5.8	2.6	1.5	1.0	0.7	0.4	0.3	0.2	0.1	-
750*	9.1	4.2	2.6	1.8	1.3	1.0	0.7	0.6	0.4	0.3
900	11.0	5.2	3.3	2.3	1.7	1.3	1.0	0.8	0.7	0.5
1000	12.4	5.9	3.7	2.6	2.0	1.5	1.2	1.0	0.8	0.7
1250	15.6	7.5	4.8	3.4	2.6	2.0	1.7	1.4	1.2	1.0
1500	18.9	9.1	5.9	4.2	3.3	2.6	2.1	1.8	1.5	1.3
1750	22.1	10.7	6.9	5.0	3.9	3.1	2.6	2.2	1.9	1.6
2000	25.4	12.4	8.0	5.9	4.5	3.7	3.1	2.6	2.2	2.0
2250	28.6	14.0	9.1	6.7	5.2	4.2	3.5	3.0	2.6	2.3
2500	30.9	15.6	10.2	7.5	5.9	4.8	4.0	3.5	3.0	2.6

When a septic tank is installed, the size of the tank installed is dependent on the number of legal bedrooms the builder planned to have in the house. Typically, a 2-4-bedroom home will have a 1000-gallon tank, unless the tank is a septic/dosing tank, or there is an at-home business or a mother in law apartment was put on the property etc. and then you'll see a 1500-gallon septic tank or larger.

SECONDARY TREATMENT UNITS

Gravity-Fed & Pressurized Drainfields

Conventional System



Most septic systems have the type of drainfield pictured above. It does not have a pump or any electrical components - instead the clear effluent flows using gravity only from the outlet side of the septic tank, to one or more distribution boxes.

There are also drainfields where there isn't enough gravity for the effluent to reach the lines, and in those cases, there will be a pump system installed to help push the effluent along.

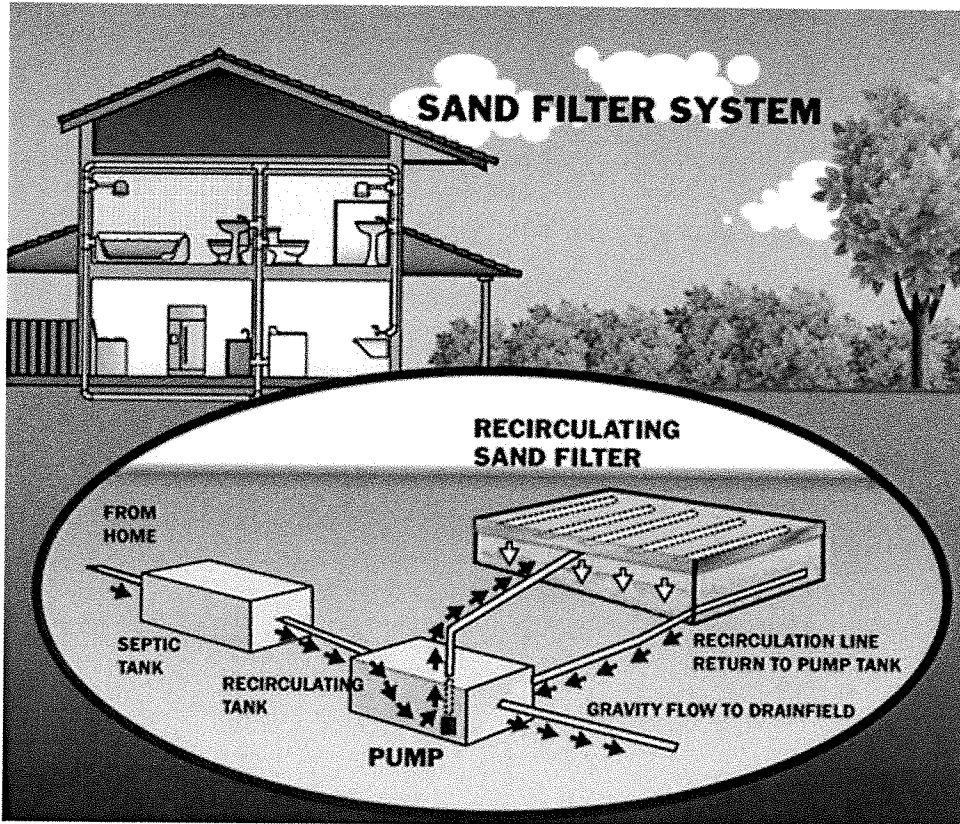
There are two types of drainfield distribution systems, one is an equal distribution system, where the effluent is distributed equally amongst all drainfield lines at the same time. The second type is a serial system, where the effluent fills up one line at a time, only moving over to the next line when the line before it is considered "full". Some drainfields have one distribution box, others have as many as seven or eight, it depends on the size of the lot and the design of the system.

The best way to determine the health of these drainfield lines, is to look inside the distribution boxes and see if there is any septage (otherwise referred to as "solids") inside - only clear effluent should be entering these boxes & lines. Other common issues found in distribution boxes and drainfield lines are tree roots penetrating them and causing clogs or general structural breakdown or vehicles/farm equipment or livestock grazing on top and crushing them.

Nothing should ever be built or grown over the top of the drainfield area, only grass.

The other common name for a drainfield is a leachfield, and the other common name for a distribution box is junction box.

Sandfilter System

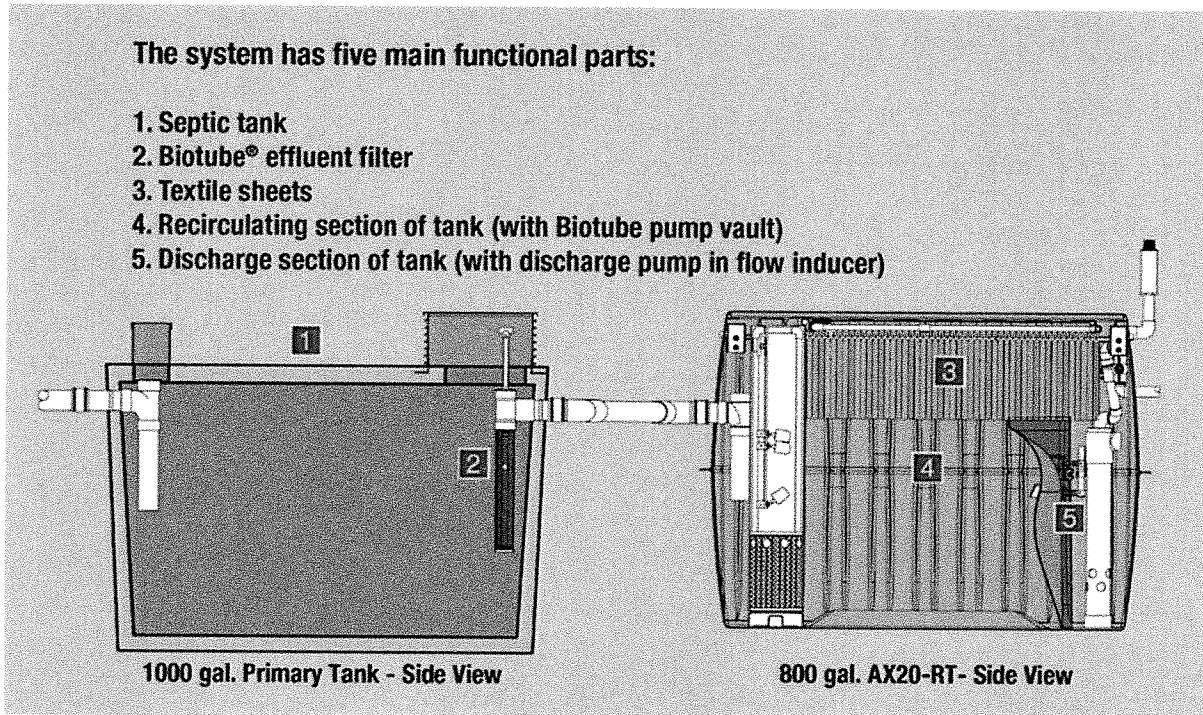


A sandfilter is one type of an Alternative Treatment Unit. These additional units are installed when either the lot is too small for a full sized drainfield, or the soil conditions are not ideal. These can be above ground, or they can be bottomless sandfilters below ground level. They allow for additional treatment of the effluent before it drains through the soil and into the groundwater, or occasionally the sandfilter will come before a small drainfield.

There should be nothing grown or placed on top of a sandfilter except grass and livestock should not be allowed to graze on top and vehicles should not drive over them due to the risk of the lines being crushed.

A sandfilter should be maintained annually, by using a high-pressure water jetter to clear out the orifices in the unit to ensure the effluent can move freely where it needs to for proper treatment. It's important to note that if the sandfilter was installed after 2015, it's required to have an O & M Certified Technician maintain it annually, and a contract for this maintenance is required by DEQ.

Advantex Treatment Unit



Pictured here is one common brand of an ATU or ATT, an Advantex AX-20 RT. These are now installed more often than a sandfilter, since they require less area to be used on the property and they clean the effluent much better. They are also less prone to failure overall. These ATU's are installed after the septic tank or the dosing tank and treat the effluent using either UV lights or additional filtration systems, then discharge the effluent to the drainfield. DEQ requires maintenance contracts when they are installed and should be maintained by an O & M Certified Technician every 6 months.

MEMO

MHC ASSOCIATES

Emergency Services Consulting



DATE:	November 25, 2019
TO:	Board of Commissioners
FROM:	R. Merritt

Attached you will find a revamped version of the Brown Roof report. It has been organized for you so that you can better follow the findings and the recommendations. Also, there are additional comments to consider which have been added as “mHc Recommendations”.

The most important policy questions actually lies with more the “process” of how these roof improvements are accomplished. Typically, these would simply be wrapped up in a general construction bid with additional fees added on for design and P&O. Because of the simplicity of some of the solutions, it may bear well for the Fire District (cost wise) to execute these improvements independently. Some of them, like the apparatus door motors [because of the lower cost] could simply be farmed out to notable, commercial roofing companies that have been recommended by our Engineering firm. If the Board desires a little more thorough process, the Project Staff could draw up specifications and obtain quotes from several firms.

It is obvious that Station #32 may have to wait out another winter until the expansion construction is executed in order to ‘tie in’ and upgrade the older roof system(s) with the new one installed on the new apparatus bay area.

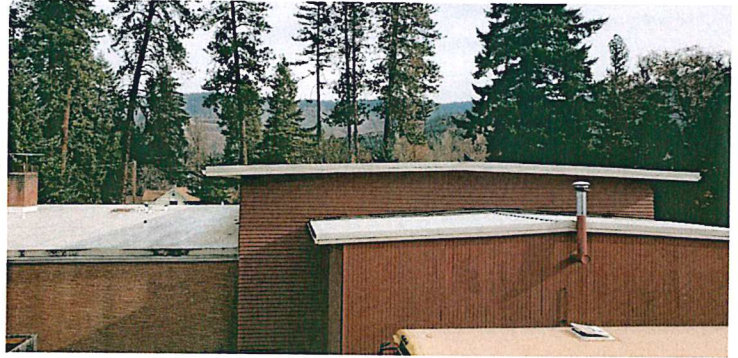
In either manner, mHc suggests that [at a minimum] we have our friendly Task Force architects (Heindels) take a look at our suggestions and see if they agree with our direction or, perhaps, have other suggestions.



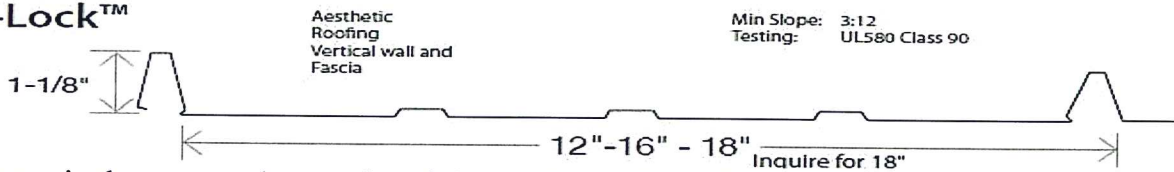
STATION #31 (Husum)

OBSERVATION

- * Generally, the PVC roof is in pretty decent shape.
- * The metal roof in the front that ties-into the PVC roof has issues, but it is uncertain if it will cause leaks or not. *The panels were not "turned up" at the top end, under the ridge, and that could allow water to blow under and get under the panels, resulting in the possibility of leaks.*
- * **The metal roofs on the building sections to the south are not the correct style of panel for the pitch.** Also, they should have done the edges differently if they wanted to avoid some of the issues with installing this material on too low of a pitch.
- * So here is the pitch of the building, which come out to ½ inch in 12 inches...
- * The panel on this is the same style as this one...



Easy-Lock™



- * As you can see in the notes at the top, the minimum slope is 3:12. So the most likely issue with this would be when there are ice dams or heavy snow/slush.
- * Also, they just hung the metal past the drip edge but did not use the "hook eave" termination. This can allow water to wick back into the edge.
- * Also, that made them have to put fasteners down on the bottom of the panel, and due to the mild slope, water ponds right there. When the fastener wears out, it will be able to leak here. Again, with a hook-eave trim and detail, they would not have needed the fastener and the water would not be able to wick so easily. Here is their metal hanging over. Notice the water drops en-route to wicking back toward the edge

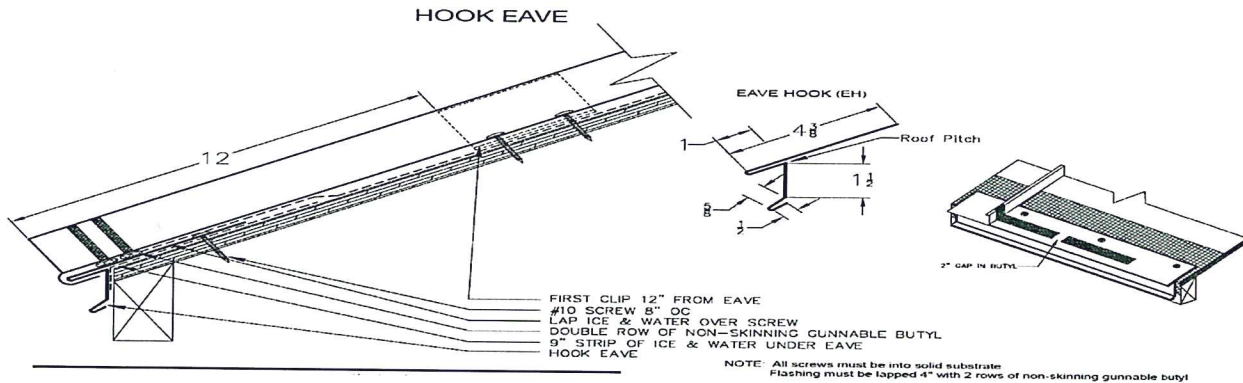


flashing with a clear path back into the roof...Here you can see where water ponds at the edge due to low pitch (see discolored spots.) Notice they put screws in or near the ponds.



- * Notice that there is no need to put fasteners at the edge like on your panels. Here is a detail of a hook eave trim...

TAYLOR METAL PRODUCTS **Hook Eave**



- * The white PVC roof area which makes up the bulk of the structure should be inspected once a year.

RECOMMENDATION



- * **OPTION #1:** Replace entire roof to exceed life of debt
- * Approximate cost: \$87,000 for reroofing the 1/2 inch in 12 inches areas with a more appropriate roof system
- * **OPTION #2:**
 1. Have the sheet metal flashing replaced/repaired/re-installed to proper design
 2. Install heat cable in valley areas to combat ice dams when improper pitch exists
- * You might keep a yearly budget of \$3,500.00 for inspections and maintenance of all the roofs. It may not take that, but it is good to keep the options open if more work is needed than expected.



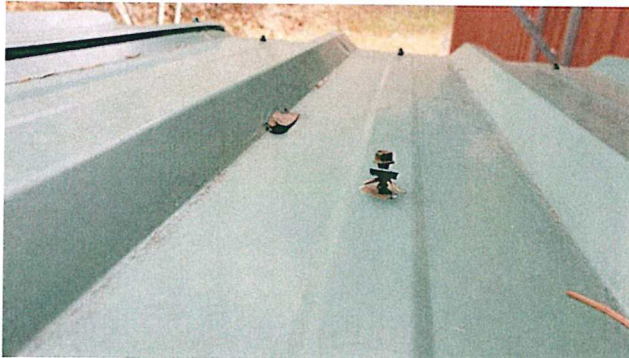
"We recommend"

- * Option #2 as a minimum; use professional COMMERCIAL roof and sheet metal company to insure correct and 'long-life' solutions.
- * Roof and gutter heating cables have come a long way in size, style and durability. This would be a very simple and inexpensive solution to *prevent* historical ice dams. Recommend that they be commercial grade and commercially installed by experienced commercial roof company
- * Option #1 should be noted in the Ancillary Table in case the budget allows for extra improvements.

STATION #32 (Cherry Lane)

OBSERVATION

- * The original roof is married (poorly) to the newer addition roofs and the panel profiles **do not match**.
- * Additionally, this kind of transition usually has a pitch change flashing which this does not.
- * The original section (aluminum color) is just metal over the wood purlins.
- * The other roof areas [*which were evidently added later*] have a solid plywood deck.
- * Some **metal siding** should be replaced above roof areas also, since it is dented and the new roof should have a new sidewall flashing that works with the new roof system...
- * The roof is having fastener issues such as this...



Also, the fasteners were installed incorrectly as they were to be mounted in the 'valleys' and not on the ridges as shown.

- * This patch was done with metal that does not match profile...



RECOMMENDATION



[BROWN ROOFING]

“We recommend”

- * The upper areas have 1” x 6” T&G decking added to create a solid deck, and then the new addition have plywood decking as part of the design.
- * The type of metal roof that should be used here should be a concealed fastener style, and that cannot be installed over the 2” x 6” purlins due to fastener/clip issues.
- * Approximate cost: \$75,000



“We recommend”

- * The roofing improvements for Station #32 should be considered **at the time of the BASELINE expansion project.**
- * Considerations should be made to **REPLACE** the **entire roof structure** as the current roof condition and patchwork do not match and the entire roof structure will certainly NOT extend beyond the life of the bond debt. This will also improve stability and insulating factors.

STATION #33 (Snowden)

OBSERVATION

- * This roof is older than it looks
- * This roof is also an “Ag panel”, or in other words, a face fastened panel
- * Fasteners are backing out
- * Some paint issues resulting in rust, plus rusting fasteners



RECOMMENDATION



“We recommend”

- * **OPTION #1:** Replace entire roof to exceed life of debt
- * Approximate cost: \$25,000
- * **OPTION #2:** Have the screws replaced with longer and larger diameter screws
- * Approximate cost: \$3,500 – **ADD** Epoxy Paint: \$1,200



“We recommend”

- * The roofing improvements for Station #33 should be considered in real time (now). Ceiling already shows multiple ‘leak stain’ spots and water damage that may damage structure.
- * Option #2 may very well take the Station #33 roof out beyond the life of the debt if the fasteners are of good quality and installed by professional installed as well as surface preparation and application of epoxy paint.
- * This project ***does not need to be included*** in the BASELINE PROJECT BID but done independently by the Fire District.