Black Hills Professional Home Inspections LLC®

Black Hills Drone Services

Black Hills Thermal Imaging

Home Inspections
Property Solutions
Aerial Photography
Radon Testing
Custom Inspections
Light Industrial

8088 Bittersweet Road
Rapid City, South Dakota 57702
(605) 209-6766
Brad R Banks
SD 14919
mrbrbanks@gmail.com
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Thermal Imaging
Log Home Inspections
Commercial Inspections
Dispute Resolutions
Aerial Listing Videos
Over-Site Inspections

HOME INSPECTION

Amber Cottman
605-219-6573
6655 Greenfield Dr
Rapid City, SD 57703
ambercottman@yahoo.com

Age of Structure
2003 / New
2000 / Aprox SF

REPORT
11-1-23

During my inspection at **6655 Greenfield Dr** located in Rapid City SD I found many issues that need to be addressed. Further investigations would be needed to ensure that the windows & doors have been installed correctly and are not contributing to the water issues in the crawlspace, by removing the siding. The siding was not professionally installed and should be below the top of the foundation wall an inch or more to keep water out. I recommend getting estimates to have the siding professionally installed.

I also recommend having the furnace & all ductwork cleaned, serviced, and treated for mold due to the mold issues that you are having with your home. HRV's Heat Recovery Ventilators should be inspected by a professional HVAC Heating & Cooling company for operation. I also recommend having the HRV System cleaned, serviced, & treated for mold. Recommend getting estimates as needed.

Further investigations may be needed to locate water intrusion entry points. The foundation walls in the crawlspace are wet and adding to the humidity & water issues that you are having in the crawlspace. The crawlspace dirt floor is damp adding to the high humidity levels, no vapor barrier has been installed. A mold test has also been performed and shows high levels of mold spores in the crawlspace and in the living area upstairs. The moisture issues should be corrected as soon as possible to stop mold growth caused by water issues in the crawlspace. I highly recommend installing 4 crawlspace vents to ventilate the crawlspace to bring the humidity levels down, after everything is dried out, I also recommend that the crawlspace be a conditioned area by installing heat vents to the ductwork in the crawlspace. I also recommend installing a vapor barrier to the dirt floor (common practice). I highly recommend treating the entire crawlspace for mold including the dirt floor before reinstalling any vapor barriers.

The sump pit casing was not installed properly to help relieve the moisture that was noticed in the dirt floor, the dirt floor is muddy in areas. The sump pit should have holes drilled in the bottom of the plastic pit casing to let ground water into the pit and then removed by the sump pump. I also noticed that the sump pit was not installed at the lowest portion of the ground. (Recommended) No interior drain tile was noticed to be installed leading to the sump pit. The only drain tile noticed was a pipe leading to the outside perimeter of the home. The quality of the installation of the drain tile is unknown at this time. A sewer line scope could be used to determine the quality of the installation of the exterior drain tile. There should be no hills & valleys in the drain tile for good drainage, the drain tile should be installed with a sock with 1" clean gravel on top & the bottom of the piping. When you are installing Drain Tile, it is important to slope the Pipe 1/8" per linear foot. This means that every 8 feet there will be a drop of 1" in the pipe. This is vitally important for the heavier rains.

We are not responsible or will be held liable for any alterations, repairs, or any services or service providers that you have contacted to remedy any issues that you are having with your home. Further tradesmen for individual components & systems may be needed or recommended by the Inspector for further investigation and or bids to repair any such systems & their components listed or not listed in this report. Other items of concern may be noticed during any renovations, repairs, or investigations. Additional inspections may be needed during or after any repairs have been conducted with updated reporting. This report is for documentation purposes.

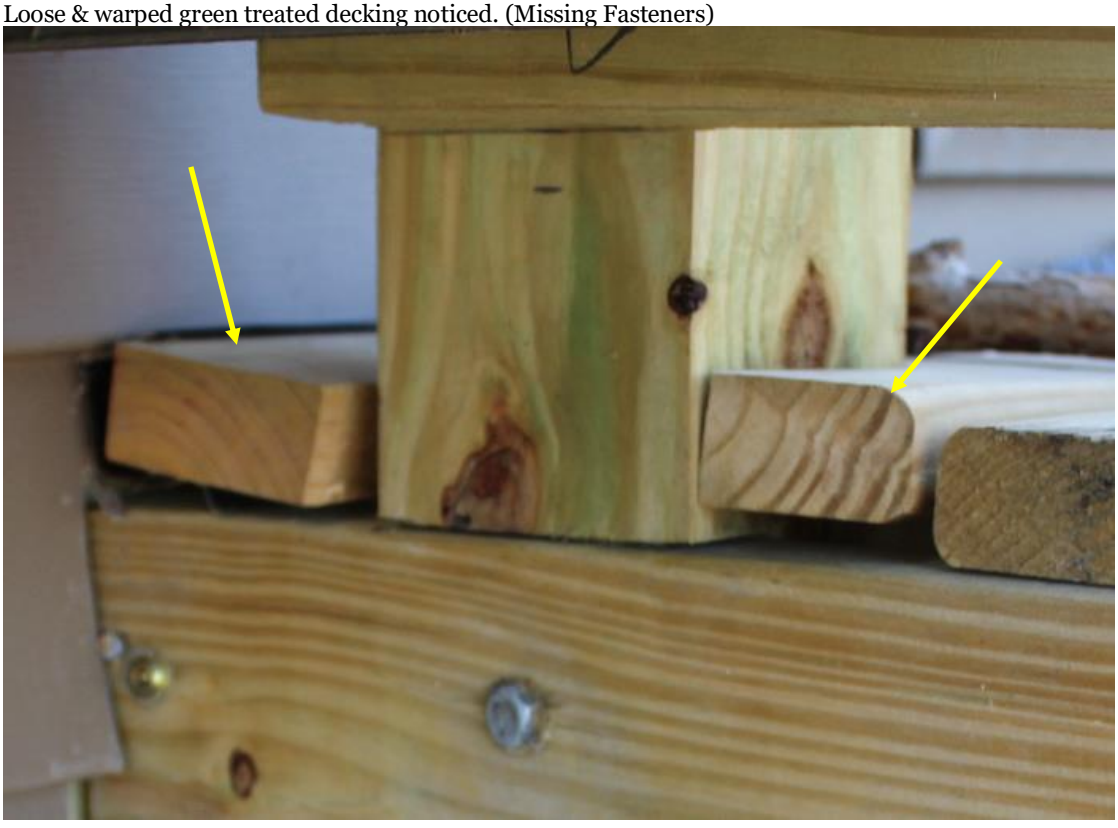
STAIRS & DECK AREAS:

The deck stairs are leaning forward, level as needed.

SAFETY ISSUE: The stairs should not be sloping downhill forcing you down the stairs.

Unprofessional hardware installation noticed.

Loose & warped green treated decking noticed. (Missing Fasteners)



The decks & stairs are constructed of green treated wood.

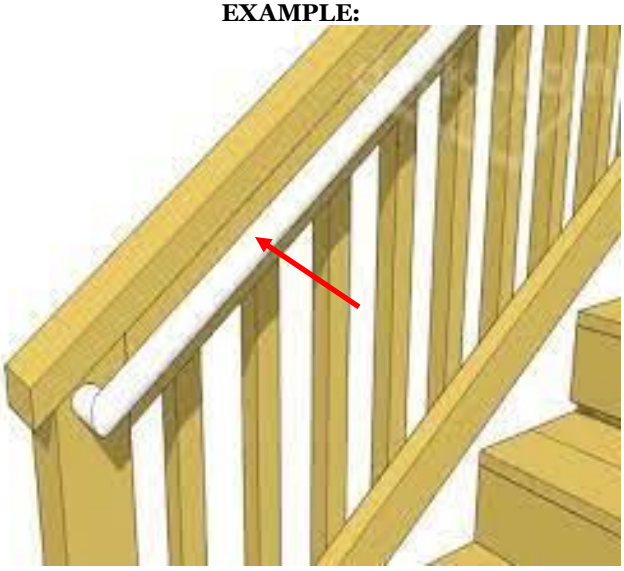
The support posts are resting in the dirt.

Support posts resting in the dirt will wick water into the posts and prematurely rot out the wood. Repair as needed.

Unfinished handrail installation noticed, the decks need to be repaired or replaced & stained as soon as possible.

Graspable handrails should be installed to the stairs as needed.

EXAMPLE:



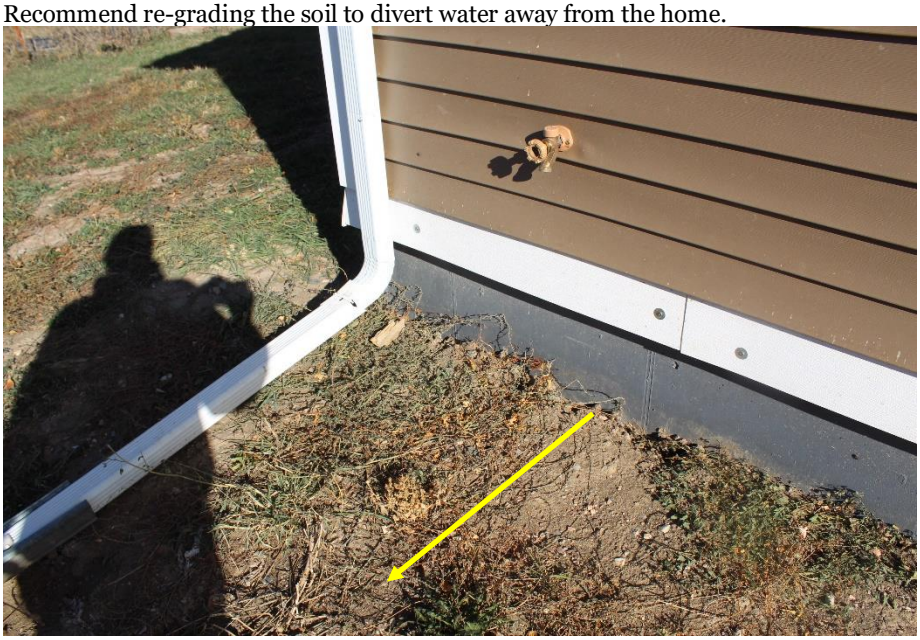
GROUNDS AREAS:

Negative grading noticed around the foundation.

Holes & voids noticed in the dirt next to the foundation.

Unpacked soil noticed next to the foundation. (Loose Fill) Low and sunken areas noticed around the home's foundation.

Recommend re-grading the soil to divert water away from the home.



Soil Grading Around Your Home:

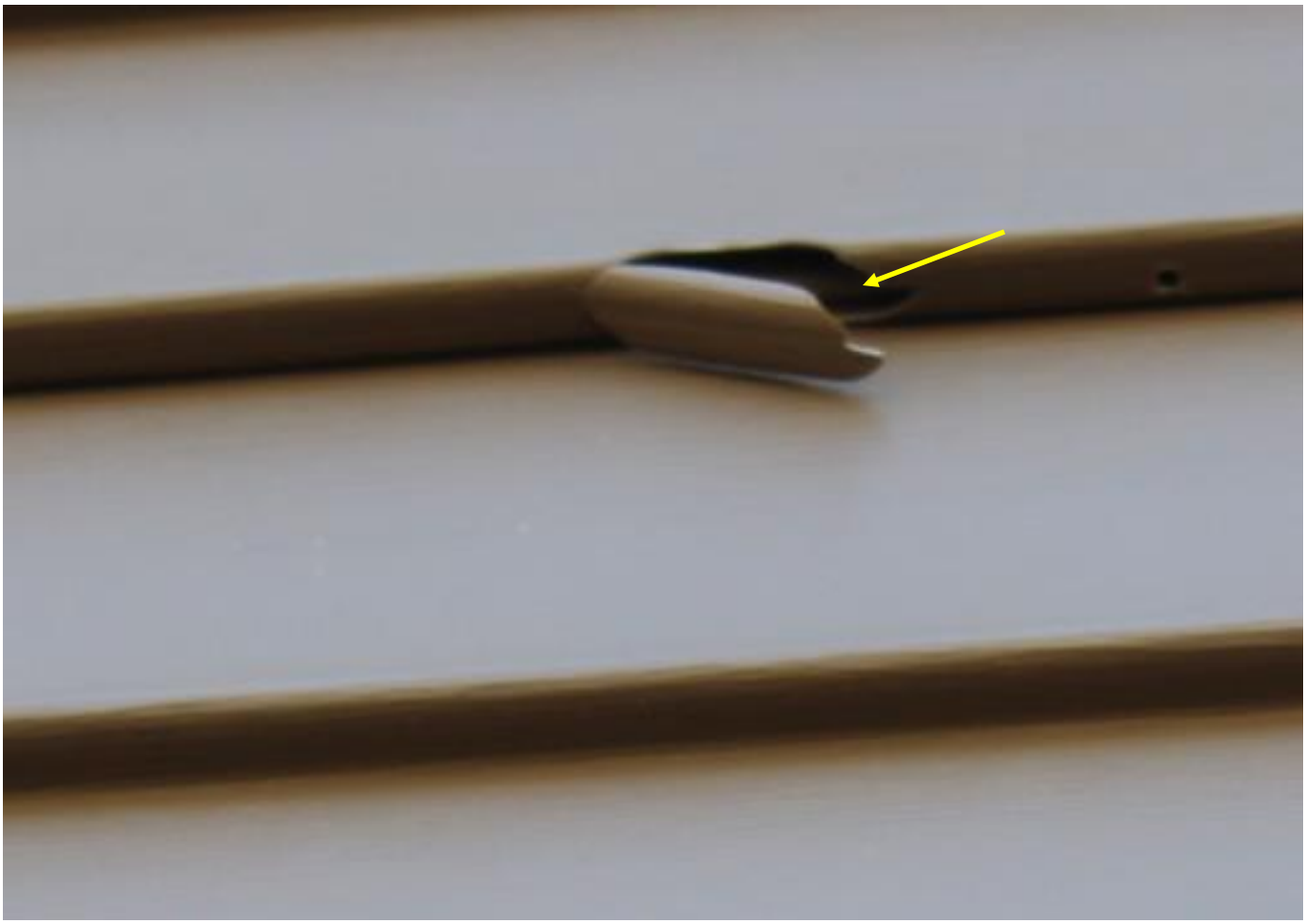
Ideally, the ground should drop **one inch** for every **one foot** that you move away from the house for the first **5-to-10** feet around your house. While this is not always possible, the ground should never be sloping towards your home's foundation.

SIDING AREAS:

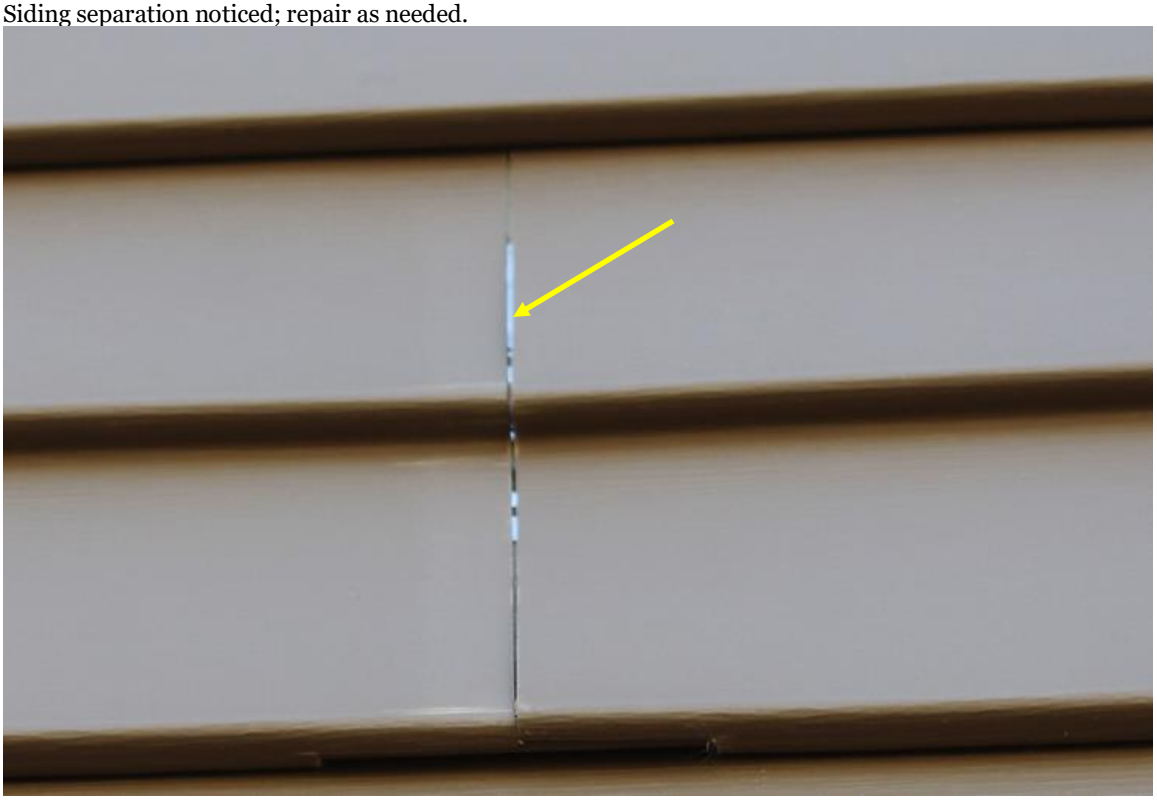
Unprofessional vinyl siding installation noticed.

Damaged siding noticed. Water entry points in the siding noticed.

Loose siding noticed; repair as needed.



Siding separation noticed; repair as needed.



No starter strip noticed for the first row of siding below the top of the foundation wall. Unprofessional installation noticed.

EXAMPLES:

A starter strip should be installed and hang at least an inch below the top of the foundation wall for the first row of siding. The starter strip serves as an anchor point for the rest of the siding and helps to ensure that the siding is properly aligned and secured. It also helps to keep water out of the wall and prevents damage to the siding. (COMON PRACTICE)

Water entry points behind the siding were noticed. I recommend getting estimates from a quality contractor to have the siding repaired or replaced as needed. Further investigations may be needed. I recommend contacting a structural engineer to determine if the home was placed on the foundation per engineered specifications.

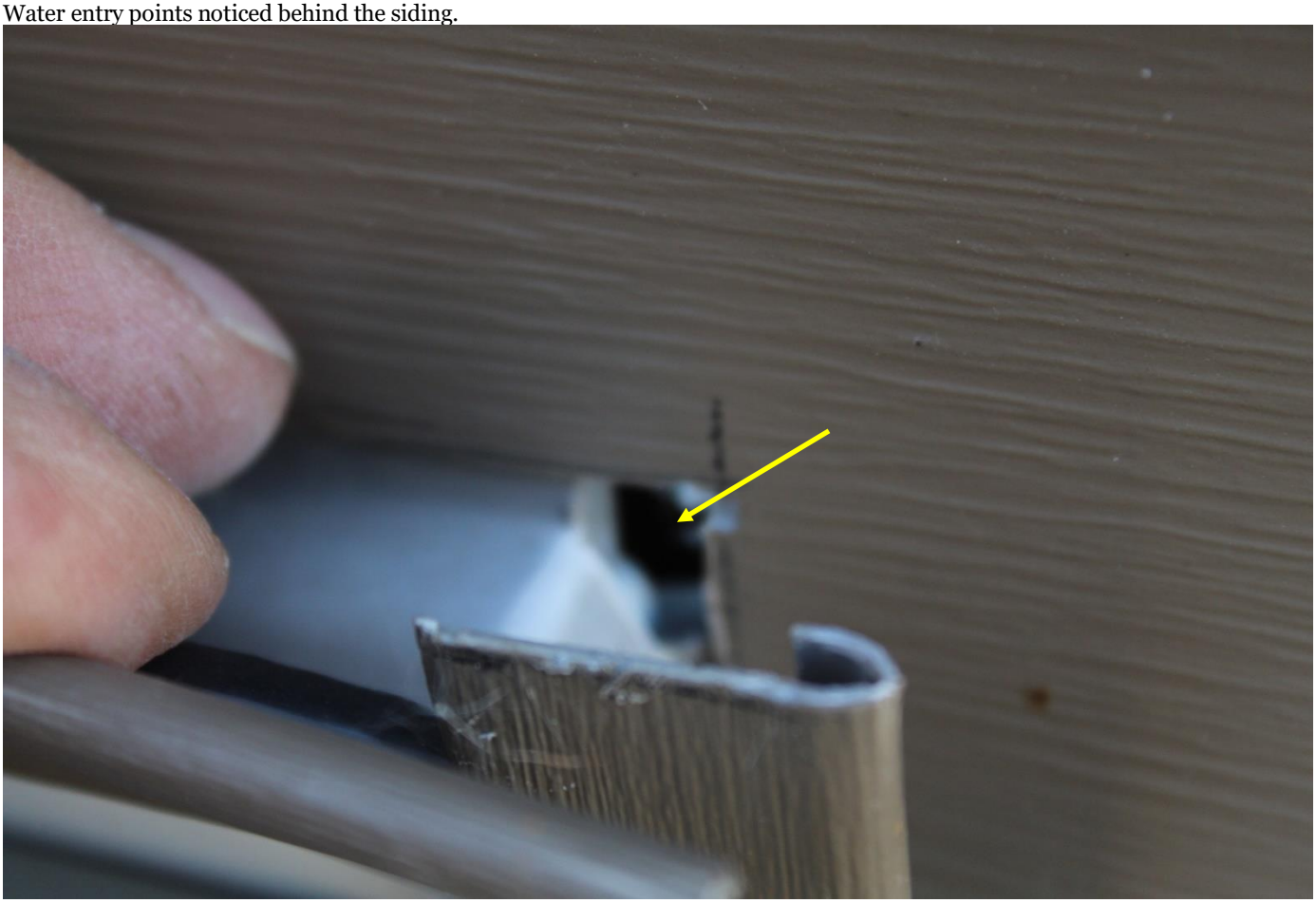
Unprofessional installation of the house wrap noticed.

The house wrap was rolled upward, any water getting behind the siding will leak along the whole top of the foundation wall and into the crawlspace and down the foundation wall. (Uncommon Practice)

Water entry points noticed under the siding.

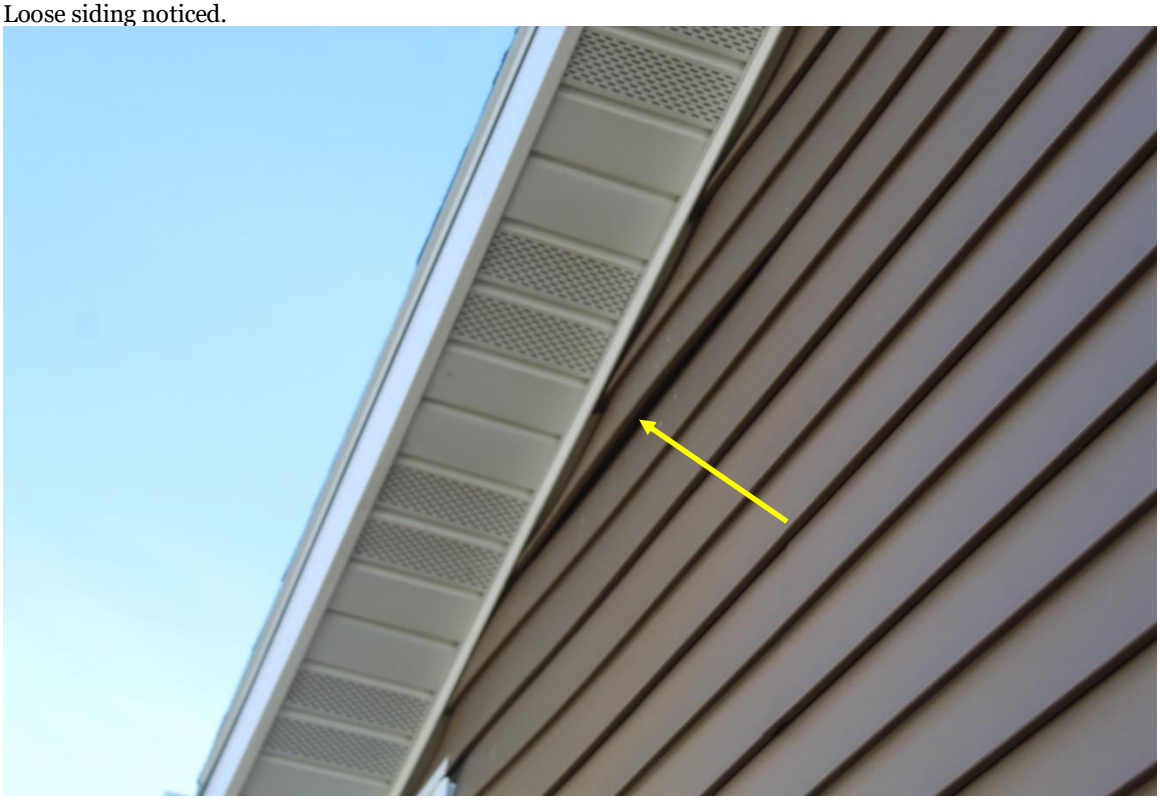
Top of foundation wall.

Water entry points noticed behind the siding.



Further investigation would be needed to evaluate the rest of the siding, windows & door installation.

Loose siding noticed.



ATTIC & ROOF:

Broken & loose wind braces noticed in the attic.

Replace attic screen as needed, recommend installing an attic hatch within the home for easy access.

The insulation in the attic is in good condition at his time.

The attic is being ventilated well, no condensation or moisture noticed in the attic at this time.

Low humidity levels noticed in the attic.

Damaged shingles noticed on the roof. Repair or replace the asphalt shingles as needed.

Frayed shingle edges noticed.

Damaged shingles noticed, I recommend getting estimates to have the shingles repaired or replaced as needed.

Clean gutters yearly for good water flow.

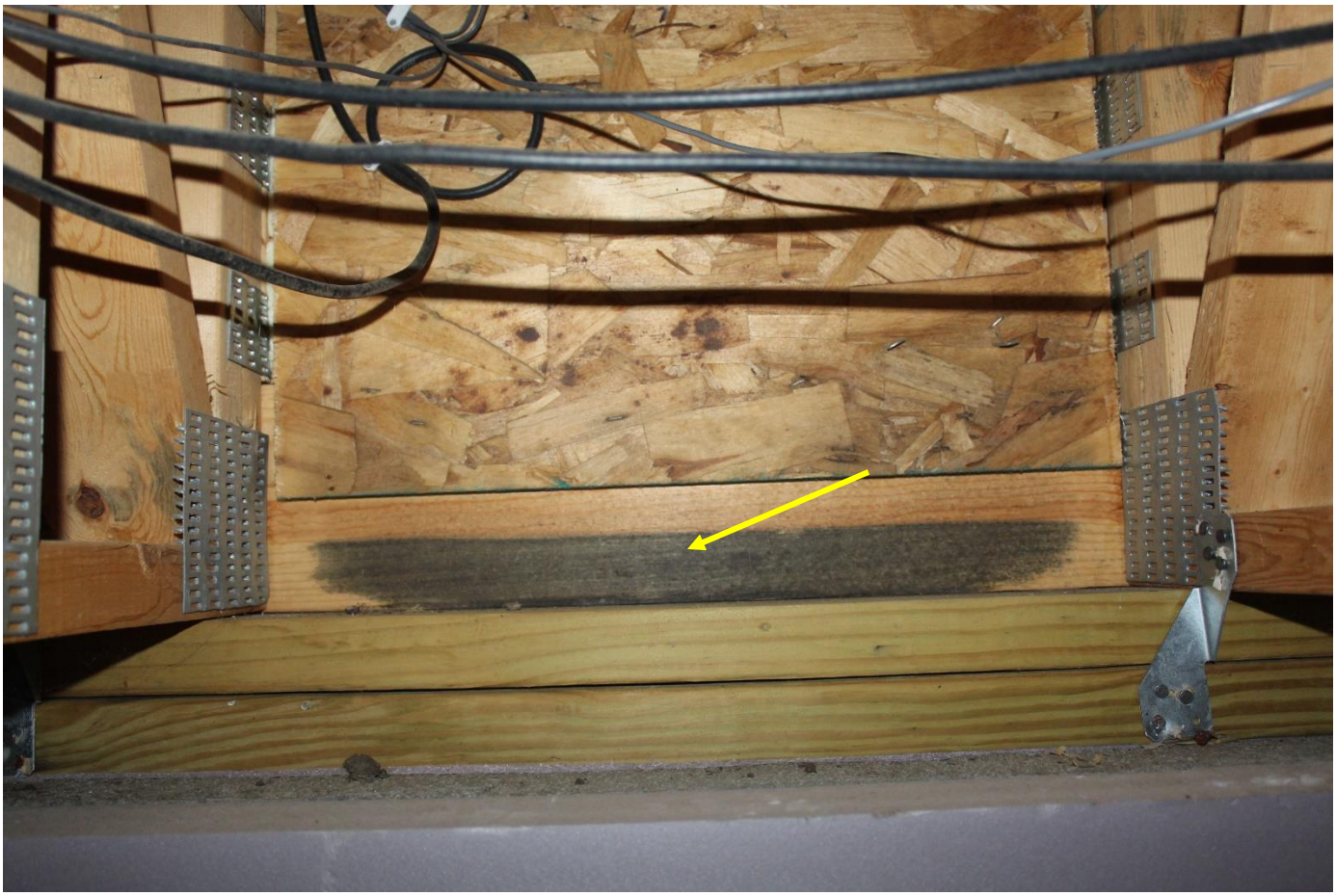
Loose and poorly installed fascia metal noticed.

Have the shingles further evaluated by a quality roofer, repair or replace the shingles as needed.

CRAWLSPACE AREAS:

High humidity levels noticed in the crawlspace. Rusty fasteners were also noticed.

Mold growth on the wood framing & sheathing noticed in several areas.

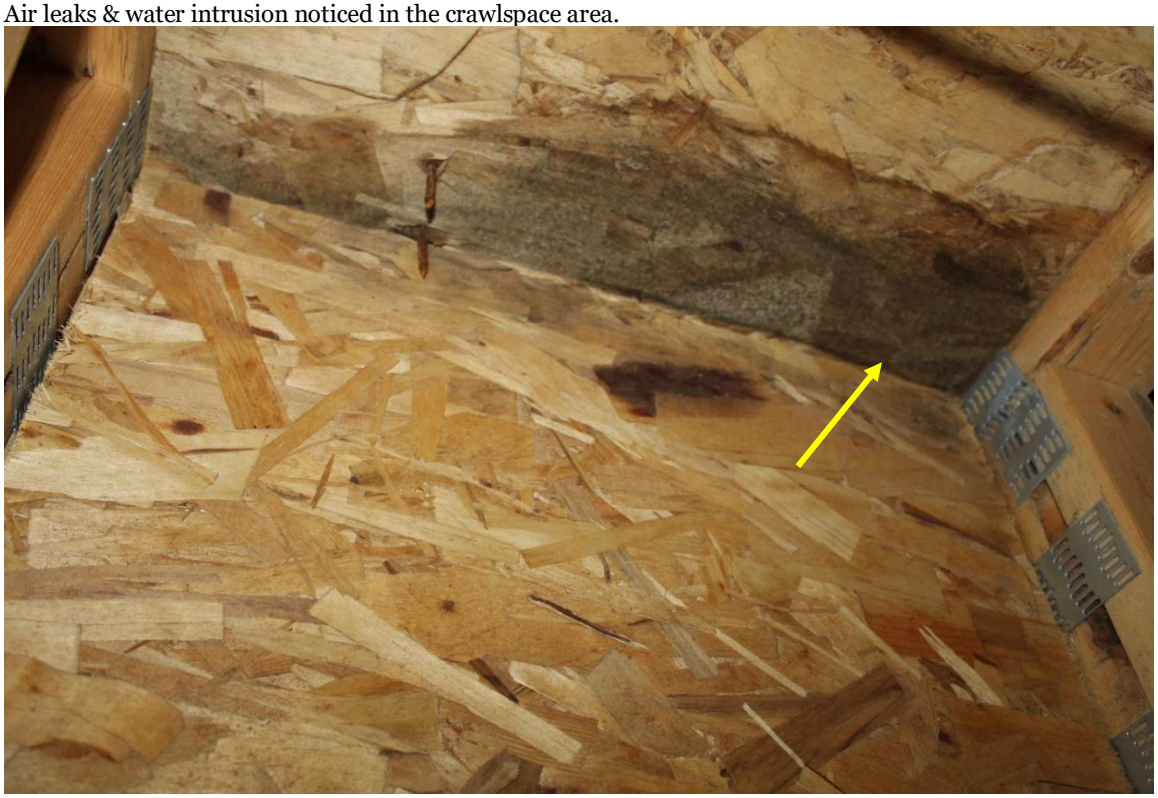


Water stains noticed on the wood framing.

I recommend having the siding repaired as needed to prevent further water damage to the wood framing within the crawlspace.

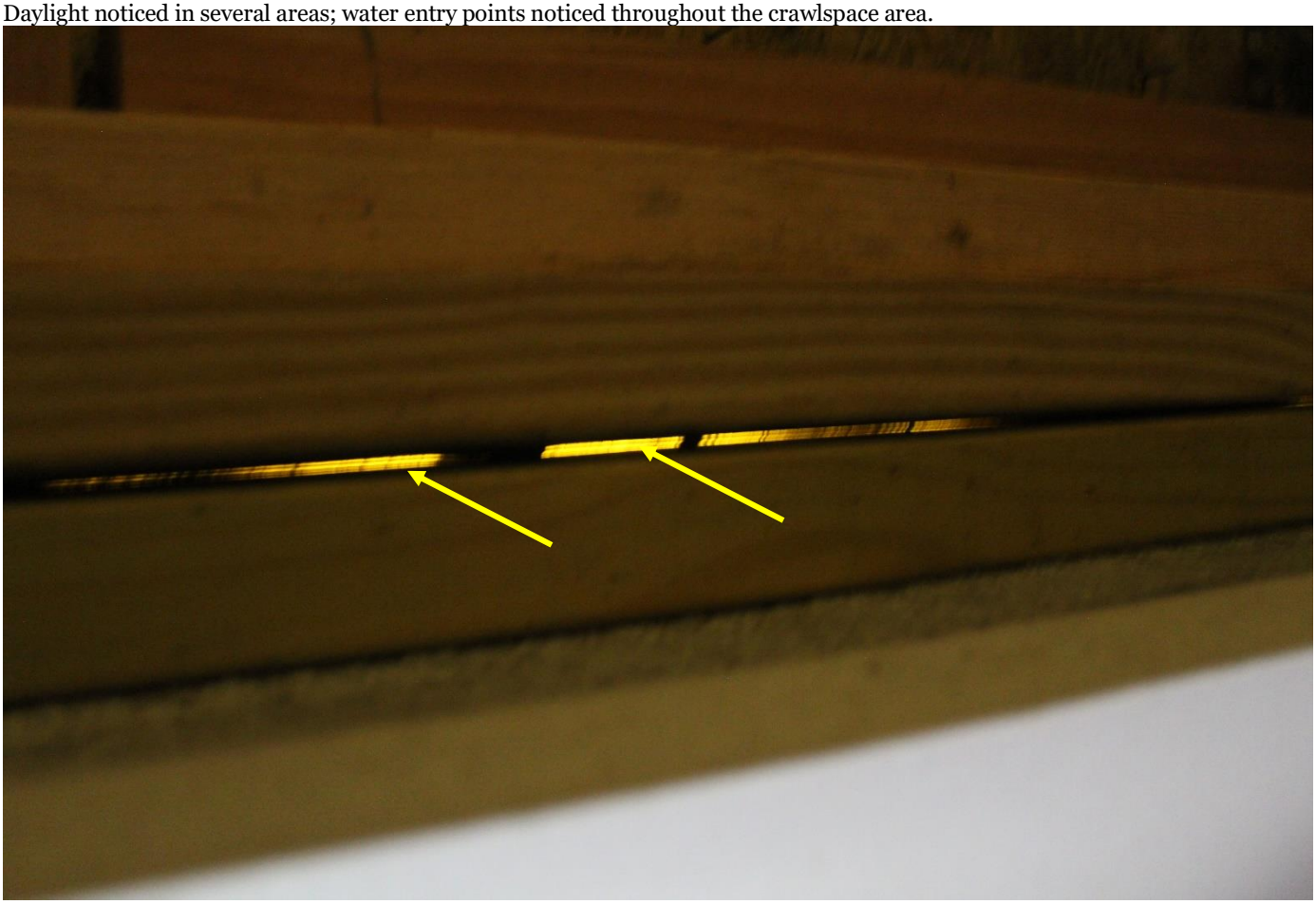
Water entry points noticed in the crawlspace due to unprofessional siding installation.

Air leaks & water intrusion noticed in the crawlspace area.



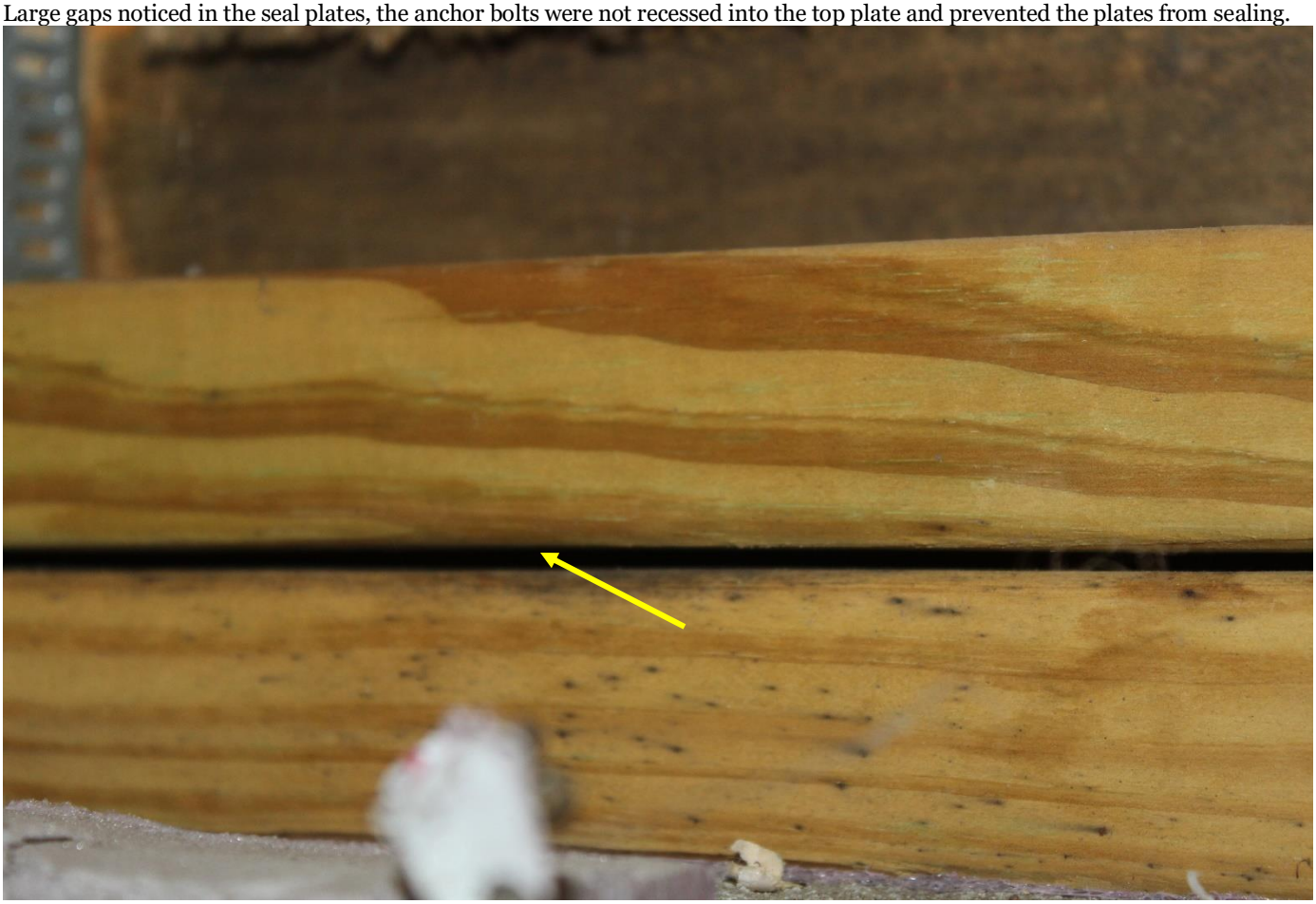
A large amount of spray foam was noticed trying to seal water entry points.

Daylight noticed in several areas; water entry points noticed throughout the crawlspace area.

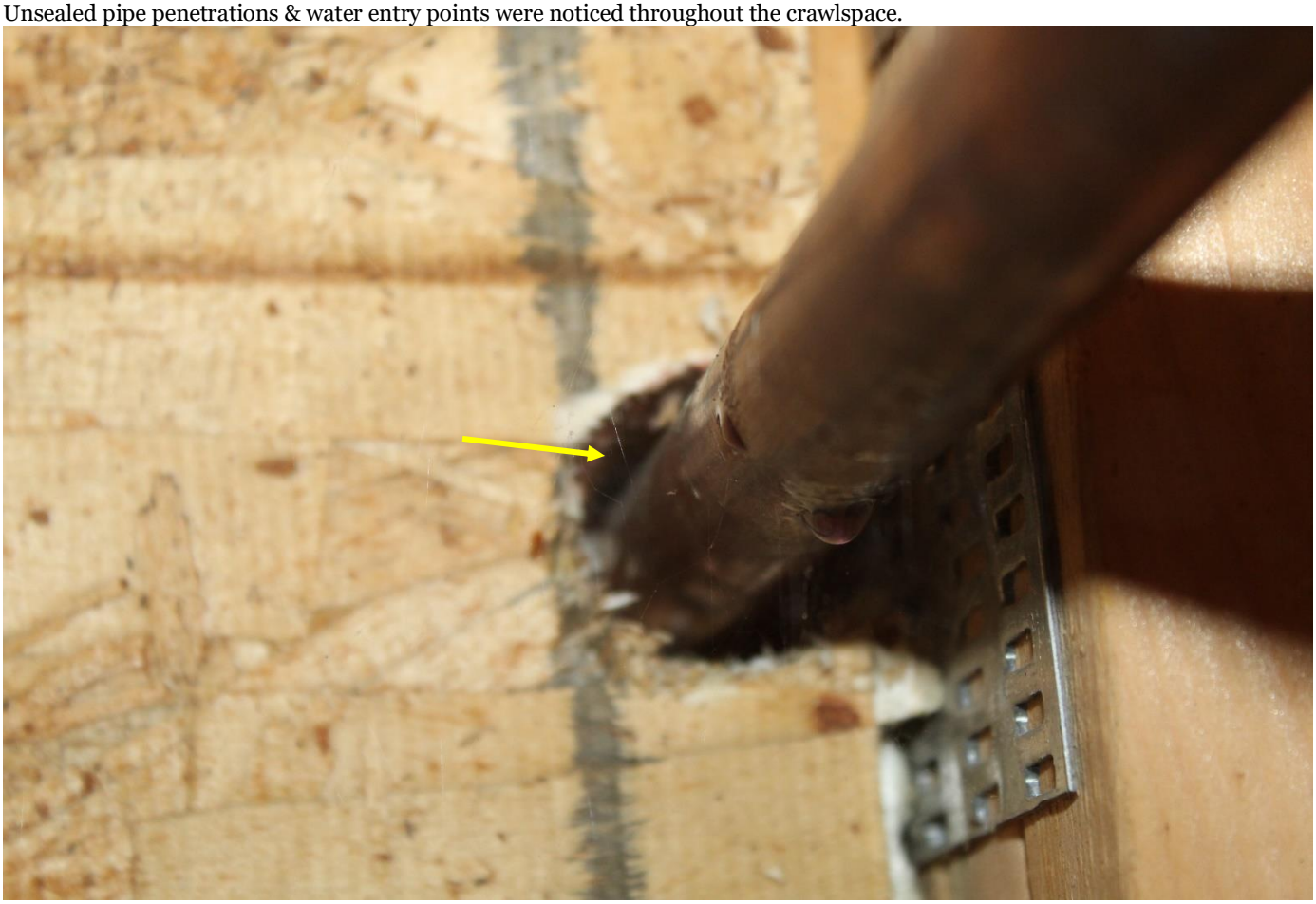


Poorly installed sill plates noticed.

Large gaps noticed in the seal plates, the anchor bolts were not recessed into the top plate and prevented the plates from sealing.



Unsealed pipe penetrations & water entry points were noticed throughout the crawlspace.



Daylight noticed around pipe penetrations.

Daylight noticed around pipe penetrations, recommend sealing all penetrations as needed to prevent water entering into the crawlspace.

Water damaged OSB wood sheathing noticed.

Water damaged wood sheathing noticed.

Waterlogged wood sheathing noticed. 100% moisture readings found.

Remove all vegetation and biodegradable plant life from the crawlspace as needed to prevent mold growth. (Birds Nest Noticed)

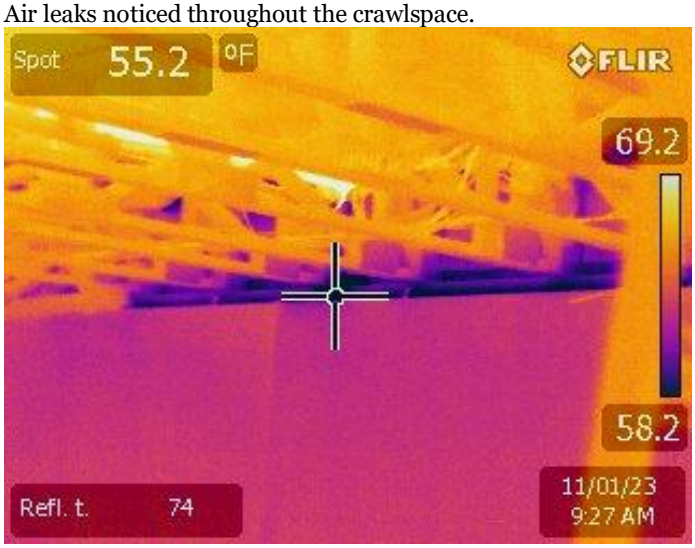
High moisture readings noticed on the wood sheathing in the crawlspace in several areas.

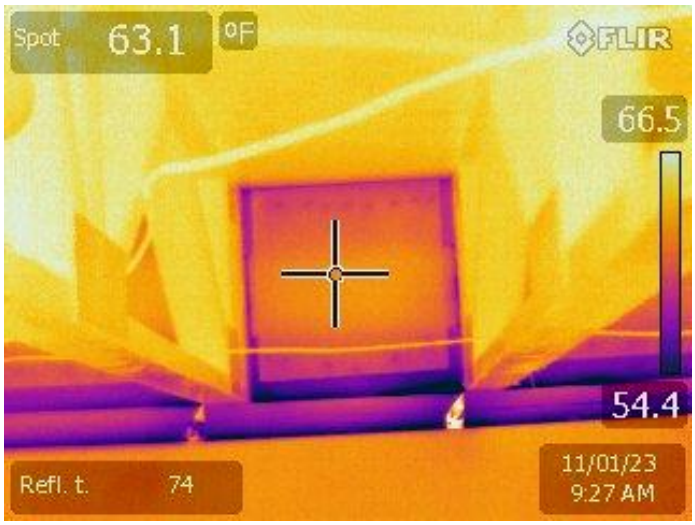
Water intrusion noticed in the crawlspace area. Soaked foundation walls noticed.

Water intrusion noticed on the foundation walls behind the insulation panels.

I recommend correcting the siding installation to prevent further water intrusion into the crawl space, and highly recommend installing ventilation in the crawl space as soon as possible to help relieve the moisture and condensation to prevent further mold issues. No ventilation was noticed in the crawl space. The plans called for heat vents to be installed to make the crawl space a conditioned area, no vents were noticed to be installed in the duct work at this time. High levels of moisture were noticed to be entering the crawlspace due to poorly installed siding, no venting, poor grading around the home and a lack of ventilation. I also noticed the exhaust from the heat recovery ventilator is not discharging condensation to the outside. All insulation panels should be removed help the concrete dry out, After the crawlspace has been dried out reinstall the insulation panels.

Air leaks noticed throughout the crawlspace.

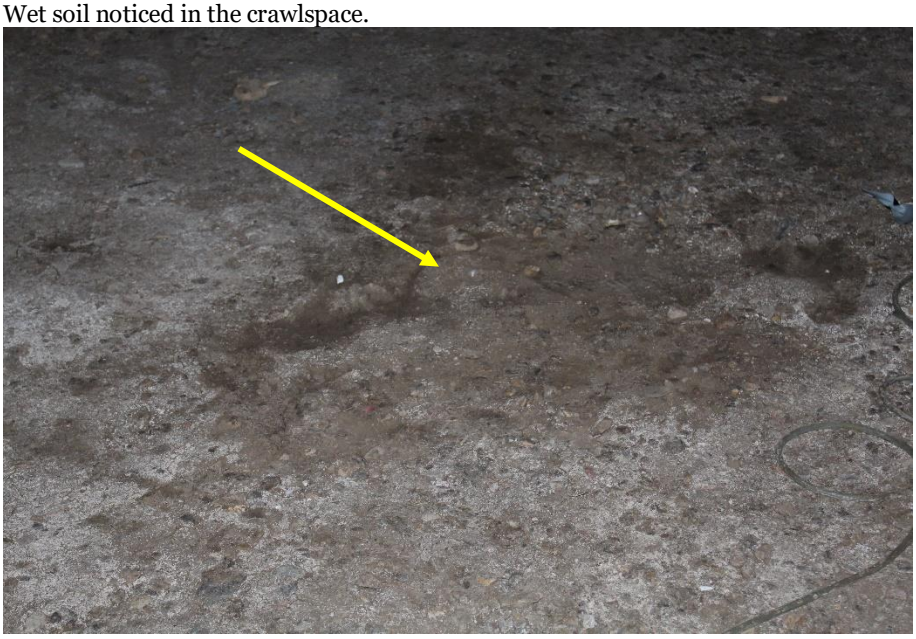




Muddy & wet dirt floor noticed in the crawlspace area. No vapor barrier noticed on the dirt floor in the crawl space.

Mustang Disaster has placed dehumidifiers & fans in the crawlspace to help relieve & remove some of the moisture within the crawlspace to help prevent further mold issues.

Wet soil noticed in the crawlspace.



I highly recommend installing a vapor barrier to the dirt floor in the crawl space after the moisture issues have been corrected and the area has been dried out. I do not recommend installing a vapor barrier until all water issues have been corrected and ventilation has been installed. You do not want to trap any moisture under the vapor barrier causing more mold issues. I also recommend treating the dirt floor and all wood areas for mold two or three times to kill all the mold within the crawlspace, I also recommend an air scrubber be set up in the crawl space to help remove mold spores from the air, and then do another air quality test after the crawl space has been dried out and treated for mold.

The sump pit was not fully installed into the ground to collect groundwater.

No holes were drilled into the bottom of the sump pit to let ground water into the pit.

Common Practices Used for Installing Sump Pit Basins & Drain Tile:

Contractors usually drill holes in the bottom of the sump basin and around the sides to allow excess ground water to enter and prevent the basin from floating up. Make sure the holes are smaller than the "solids handling rating" of the pump (generally 1/4 in. to 3/4 inch in size) Clean gravel should be then installed around and at the bottom of the sump basin to help filter out silt & dirt before entering the sump basin. A fine mesh should then be installed on top of the clean gravel to further prevent soil & silt from entering into the sump basin and sump pump. (Highly Recommended)

Drain tile should be installed at the base of the foundation footing with no hills or valleys in the piping, and a sock should be installed on the exterior drain tile pipe to prevent dirt & fine silt from entering the drain tile. About 3 to 6 inches of ½" to 1" clean gravel should be on top and bottom of the drain tile to filter dirt & fine silt from entering the drain tile pipe. When you are installing Drain Tile, it is important to slope the Pipe 1/8" per linear foot. This means that every 8 feet there will be a drop of 1" in the pipe. This is vitally important for the heavier rains. A sewer line scope could be used to determine the quality of the installation of the exterior drain tile. Further investigations may be needed to determine the drain tile installation.

Ideally, your sump pump basin should be in the lowest-lying location in your basement so water will naturally flow there and is recommended that the sump basin be installed at a minimum of 24' inches and up to a depth of 36' inches. (Highly Recommended)

High water tables in Rapid Valley is a common problem. All homes with basements & crawlspaces in Rapid Valley should be constructed With interior & exterior drain tile to help remove water from around & under the home to prevent water damage to the home. (HIGHLY RECOMMENDED) I also recommend getting estimates to have the sump pit, and all drain tile professionally installed and have the foundation further investigated for water intrusion.

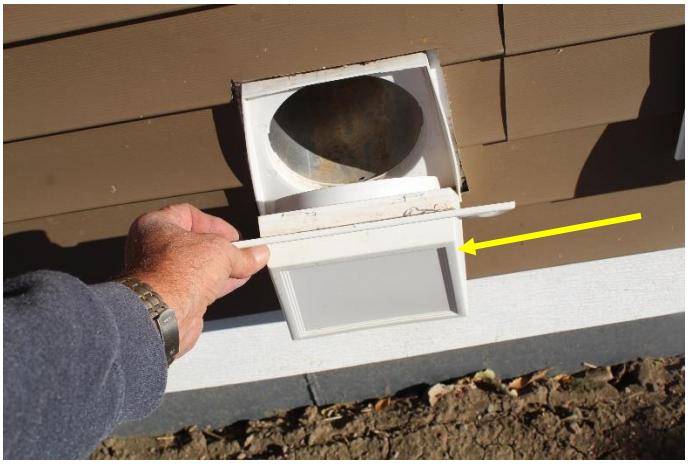
No interior drain tile was installed leading to the sump pit to help relive ground water from under the home as requested.

The sump pump drainpipe is discharging next to the foundation.

The sumpit should have been installed at the lowest point in the crawl space to be effective and was not.

The HRV exhaust pipe has been leaking water for quite some time, water damaged noticed to the wood around the exhaust pipe.

The exhaust pipe from the heat recovery ventilator is wrapped with insulation and is completely soaked with water contributing to the high moisture readings within the crawlspace. The insulation should be removed from around the ductwork and replaced to prevent further moisture damage & mold issues. The ductwork should be able to discharge the water to the outside without any obstructions causing the water to back up in the ductwork. The exterior hood appears to be preventing the water and water vapors from exiting the exhaust pipe causing water to back up in the pipe and back into the home.



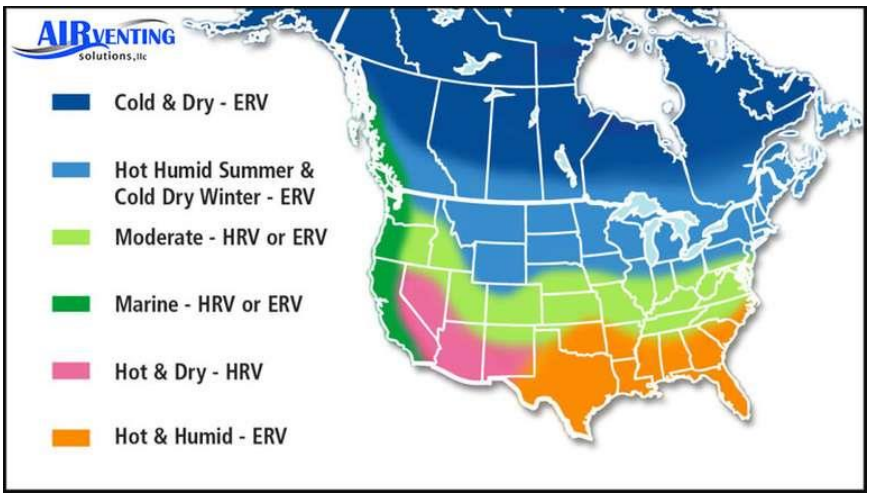
The whole HRV house heat recovery ventilation system works continuously to extract moist, stale air from wet rooms (kitchens, bathrooms, and utility rooms) and supply fresh, filtered air to habitable rooms (bedrooms, living rooms, and dining rooms). Up to 90% of the heat in the extract air is recovered by the heat exchanger in the unit and used to heat the incoming fresh air.

HRV systems also help prevent mold growth by exhausting excessive moisture that is created by showering, cooking, washing dishes, doing laundry, and engaging in other household activities. All molds produce allergens and irritants, and some molds also produce potentially toxic substances called mycotoxins. Indoor mold growth commonly causes health problems in occupants.
Immediate or delayed allergic reactions can be triggered by touching or breathing in mold or mold spores. These reactions include sneezing, a runny nose, red eyes, an asthma attack, and a weakened immune system. We do not provide medical advice and you may wish to seek medical care for any of these systems that you may be having.

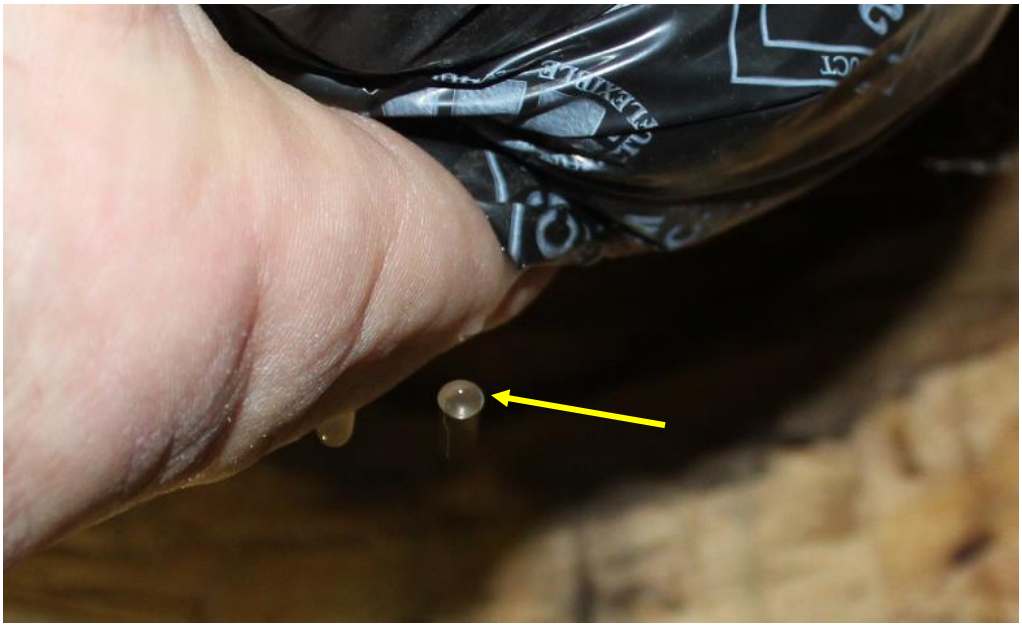
In homes with an HRV Heat recovery ventilation system allows fresh air to be distributed throughout the house. A properly installed, operated, and maintained HRV system exhausts indoor air pollutants and excess humidity to the outdoors while distributing fresh air throughout the house. Poorly installed systems will cause moisture issues with the home. I recommend getting estimates from a quality HVAC company to have the system further evaluated and correct any issues that the system may be having.

How a HRV system works:
https://www.youtube.com/watch?v=Cw_Rs8OoNoU&t=63s

http://cchrc.org/heat-recovery-ventilators/



Water soaked HRV exhaust pipe insulation was noticed during the inspection.



Here are the Air Sampling Results taken by Dusty Johnson; The spore count should not be higher than 150 to 200.

Eurofins J3 Resources, Inc.
3113 Red Bluff Road, Pasadena, TX 77503
713-290-0223 www.eurofinsus.com/Built

Client: Inspection Services LLC
C/O: Dusty Johnson
Re: 6633 Greenfield DR.

Date of Submittal: 10-27-2023
Date of Receipt: 10-27-2023
Date of Report: 10-30-2023

MoldSCORE™: Spore Trap Report

Location: 9078 Main Floor

Fungi Identified	Indoor sample spores/m3 <100 1K 10K >100K	Raw count	Spores/ m3	MoldSCORE‡ 100 200 300	Score
Generally able to grow indoors*					
Alternaria		7	470		252
Bipolaris/Drechslera group		ND	< 67		100
Chaetomium		ND	< 67		100
Cladosporium		1	270		100
Curvularia		ND	< 67		100
Epicoccum		1	67		107
Nigrospora		ND	< 67		100
Penicillium/Aspergillus types†		6	1,600		278
Stachybotrys		ND	< 67		100
Torula		ND	< 67		100
Seldom found growing indoors**					
Ascospores		ND	< 67		100
Basidiospores		ND	< 67		100
Rusts		2	130		151
Smuts, Periconia, Myxomycetes		1	67		113
Total			**2,600**	**Final MoldSCORE**	**278**

Location: 9081 Crawlspace

Fungi Identified	Indoor sample spores/m3 <100 1K 10K >100K	Raw count	Spores/ m3	MoldSCORE‡ 100 200 300	Score
Generally able to grow indoors*					
Alternaria		1	67		127
Bipolaris/Drechslera group		ND	< 67		100
Chaetomium		1	67		199
Cladosporium		2	530		100
Curvularia		ND	< 67		100
Nigrospora		ND	< 67		100
Penicillium/Aspergillus types†		109	29,000		300
Stachybotrys		ND	< 67		100
Torula		ND	< 67		100
Seldom found growing indoors**					
Ascospores		ND	< 67		100
Basidiospores		1	270		129
Rusts		ND	< 67		100
Smuts, Periconia, Myxomycetes		1	67		113
Total			**30,067**	**Final MoldSCORE**	**300**

EPA INFORMATION ON MOLD:
https://www.epa.gov/mold/brief-guide-mold-moisture-and-your-home

https://www.epa.gov/mold

South Dakota Department of Health:
https://doh.sd.gov/media/xl5puyfa/mold_diseases_fact_sheet.pdf

FULL AIR SAMPLING REPORT:
https://acrobat.adobe.com/id/urn:aaid:sc:US:076c4ede-b1e5-431f-9039-049d1a05d900

I recommend correcting all the water issues with the home and having the home treated for mold as needed. I also recommend having the ductwork & furnace cleaned and treated for mold as needed.

High moisture readings were taken & noticed within the crawlspace.

High Moisture Readings in A Crawlspace:
https://atmox.com/2021/05/10/crawl-space-wood-moisture/

Dusty Johnson from Black Hills Inspection Services & Black Hills Professional Home Inspections LLC inspected the crawlspace on November 1st 2023 at or around 9:00 am and we found several concerns regarding moisture intrusion into the crawlspace. All moisture issues should be addressed and repaired, and have the crawlspace treated for mold. We highly recommend having vents be installed within the crawlspace as soon as possible to help dry out the crawlspace.

RADON TESTING RESULTS:

Air Chek
NRPP Lab ID: 101138 AL
November 01, 2023

Radon Measurement Technician
Inspection Services Llc
Dusty Johnson
4500 Resevoir Rd
Rapid City, SD 57703
605-484-8664

Device Information
Pro Chek Activated Charcoal
Serial#: 7402576
Analyzed by: Air Chek

Initial Radon Test Information

Dates of Test: 2023-10-26 @ 11:00 am to 2023-10-28 @ 1:00 pm

Property Address	Test Number	Analysis Date	Result
1st Floor 6633 Greenfield Dr Rapid City, SD 57703-9655	7402576	2023-11-01	9.3 ± 0.7 pCi/l

Interpreting your Test Result

The US EPA action level for indoor radon is 4.0 pCi/L. The EPA recommendation for test results in this range (8 to 100 pCi/L) is to conduct a short-term follow-up measurement within the next few weeks. A long-term measurement is NOT recommended because additional exposure at these levels could pose an increased health risk. If, however this is a follow-up (confirming) test, it is recommended that you take remedial action to reduce these radon levels.

- **No tampering was observed during the radon test.**

The subject home described has been tested for the presence of radon gas according to US EPA short-term testing protocols. The test and analysis have been performed to comply with EPA's *Home Buyer's and Seller's Guide to Radon*. This report represents the average radon concentration at the time of sampling and at the specific location in the building. However, it must be noted that radon concentrations will vary from day to day and from season to season.

EPA's GUIDLINE TO RADON:
https://www.epa.gov/radon/what-epas-action-level-radon-and-what-does-it-mean

Radon Levels should not be above **4.0** in a home, the levels of Radon that were detected are at 9.3 The home should be mitigated for Radon removal.

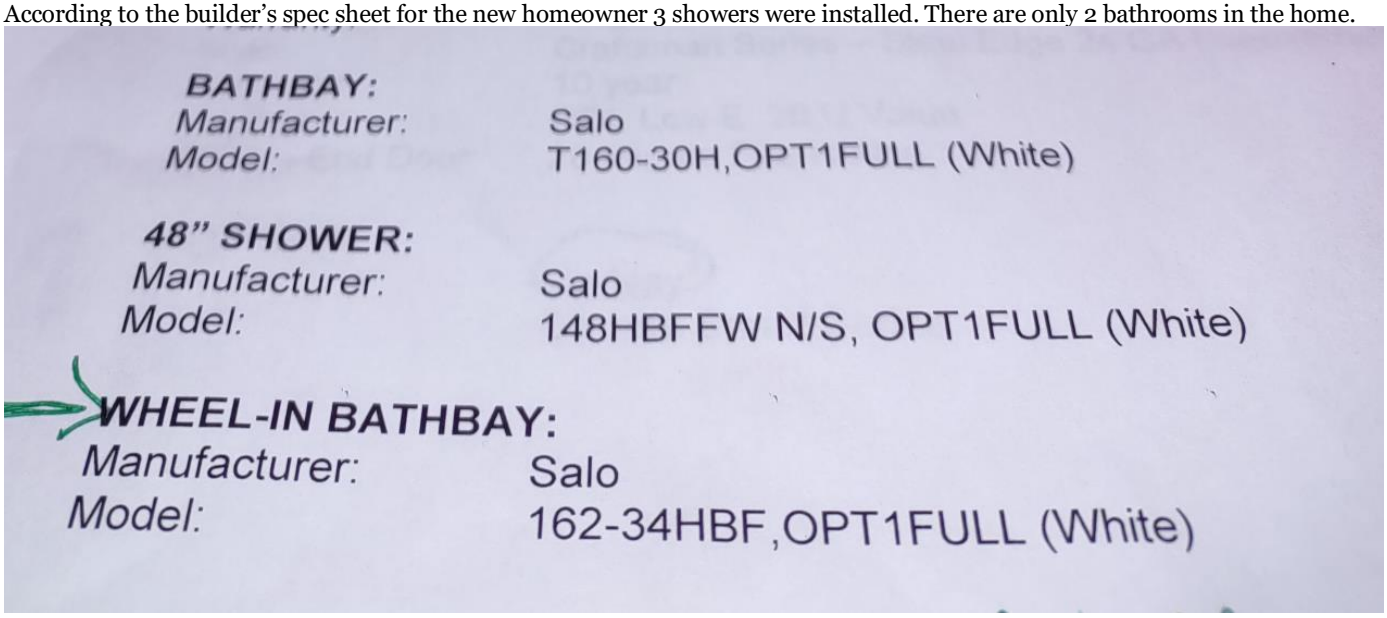
Before installing a vapor barrier in the crawlspace, I highly recommend installing a radon fan to the interior drain tile pipe and or sump pit and then install the vapor barrier.

South Dakota Department of Agriculture & Natural Resources:
https://danr.sd.gov/Environment/AirQuality/Radon/default.aspx

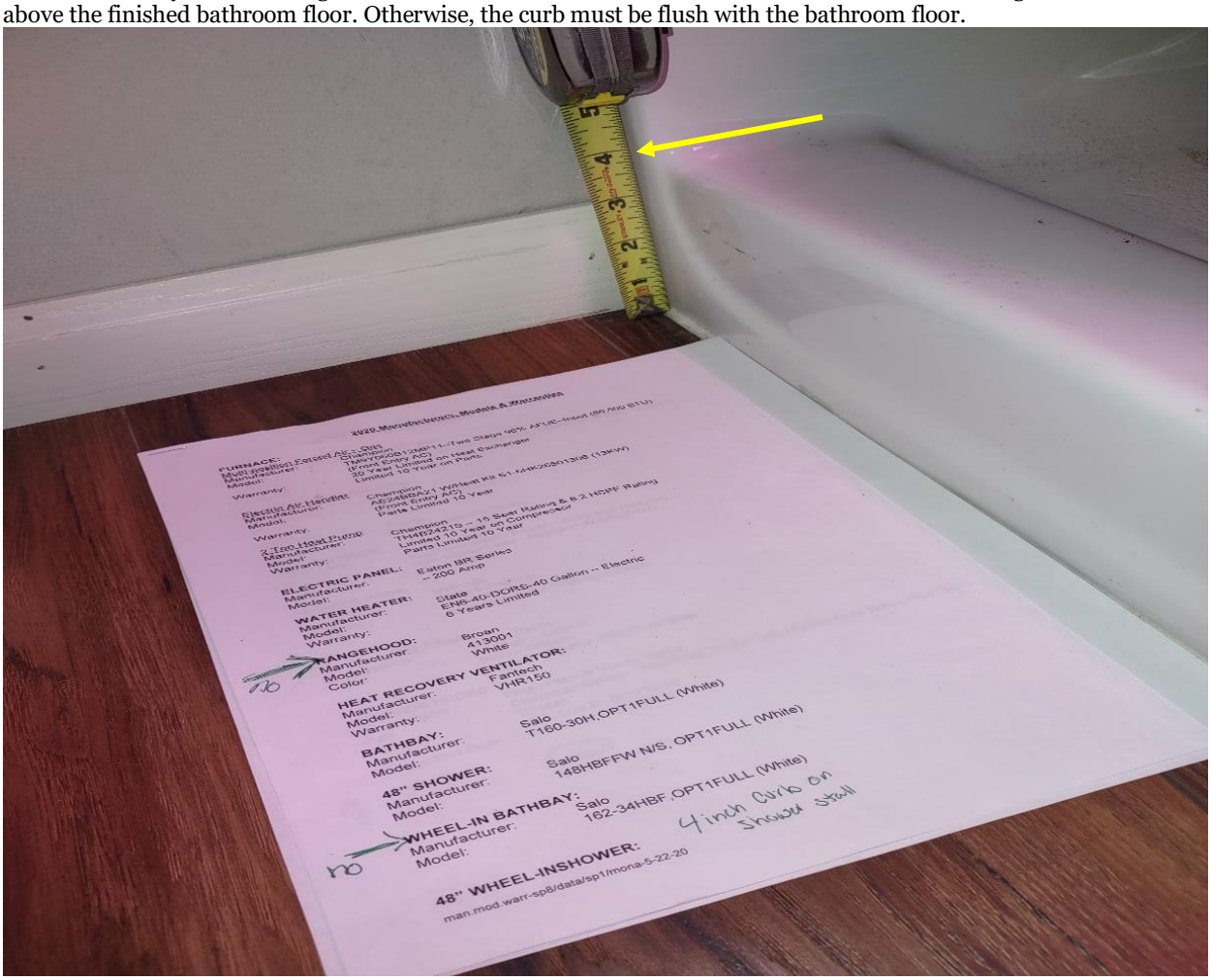
IRC CODE for Vapor Barriers / Dirt Floor
https://codes.iccsafe.org/s/IRC2018P4/chapter-11-re-energy-efficiency/IRC2018P4-Ch11-SecN1102.2.11

PLUMBING AREAS:

According to the builder's spec sheet for the new homeowner 3 showers were installed. There are only 2 bathrooms in the home.



The shower that is listed to be installed does not match the model number according to the manufacture's specs. The shower that was installed has a 4" curb and is not ADA approved. An ADA compliant shower will meet certain design criteria that makes the shower accessible for anyone, including those who use a wheelchair. These criteria include: a threshold height that is no more than ½" high above the finished bathroom floor. Otherwise, the curb must be flush with the bathroom floor.



This is the shower that should have been installed according to the builder's spec sheet. (Not Installed)

Description

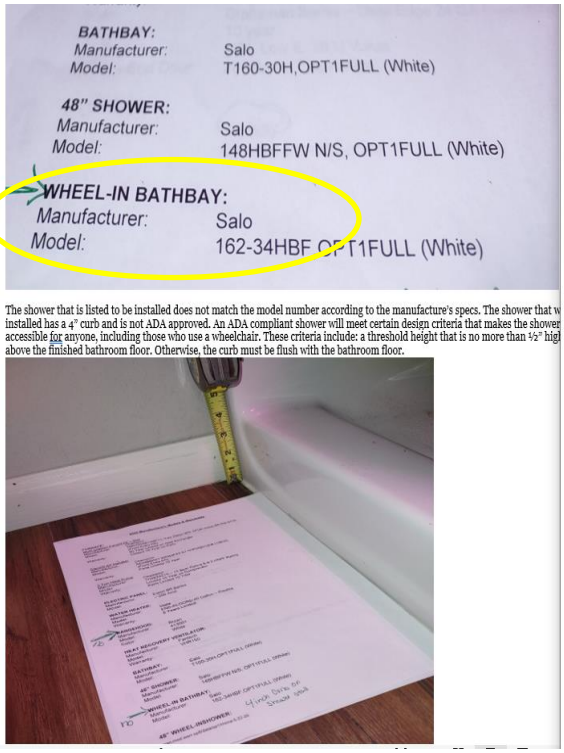
MODEL 162HBF

Outside Dimensions: 62″ wide x 39″ deep x 78 7/8″ high

Features:

- One-Piece Fiberglass Composite Unit
- Smooth-Wall Gel Coat Finish
- 3/4″ Overall Threshold
- 3 1/4″ Center Drain
- ADA Compliant
- Barrier-Free When Properly Installed
- Textured Non-Skid Floor
- Wood Reinforced Floor Structure
- Wood Reinforced For Seat and Grab Bar Installation

Options:



All Ba

Description

MODEL 162HBF

Outside Dimensions: 62″ wide x 39″ deep x 78 7/8″ high

Features:

- One-Piece Fiberglass Composite Unit
- Smooth-Wall Gel Coat Finish
- 3/4″ Overall Threshold
- 3 1/4″ Center Drain
- ADA Compliant
- Barrier-Free When Properly Installed
- Textured Non-Skid Floor
- Wood Reinforced Floor Structure
- Wood Reinforced For Seat and Grab Bar Installation

Options:

- LH or RH Plumbing Available
- Enhanced Reinforcement Options Available
- Factory Installed Grab Bar Options Available

The tub shower unit Model#**T160-30H** that was installed does match the spec sheet that was provided to the homeowner.

Model #**148 HBFFW** is nonexistent on the manufacturer's website.

Inspection Report

Under Ground	Rough In	Final
		X

State Plumbing Commission
217 W. Missouri Ave.
%1320 E Sioux Ave Pierre,
South Dakota 57501
605-773-3429

0498
CERTIFICATE # 62251

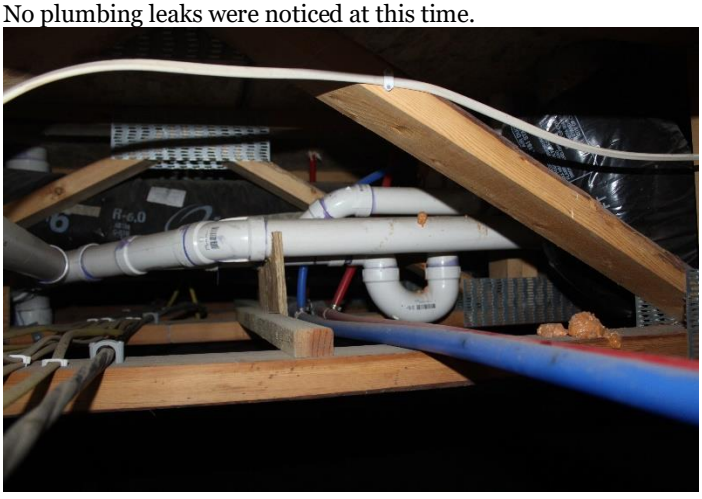
Date: 1-11-23
Owner:
Contractor: LPH MECH
Street Address: 6633 GREENFIELD
City: RAPID CITY County: PENN
Building Type: SING FAM

Requested: Yes / No
Complaint: Yes - No
Citation Issued: Yes - No
Pictures Taken: Yes - No
Inspector: D. ASTON

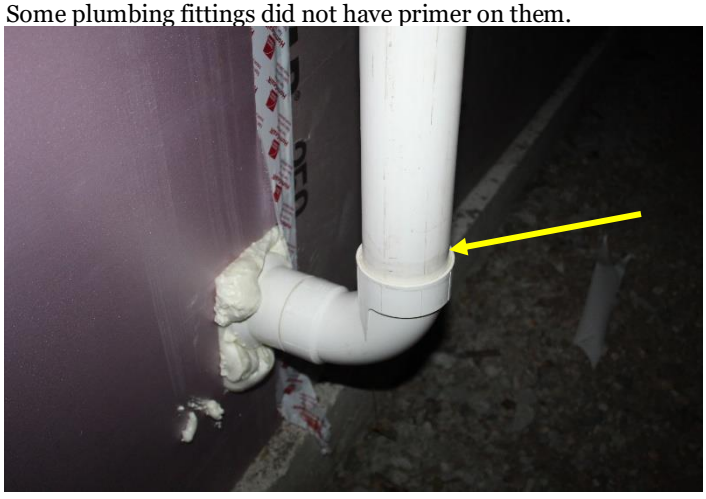
Discrepancies:

(Signature/Title)

No plumbing leaks were noticed at this time.

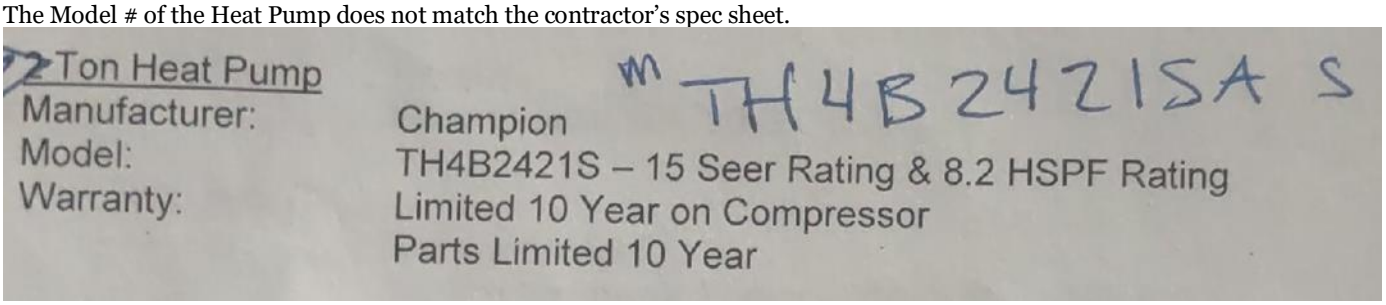


Some plumbing fittings did not have primer on them.

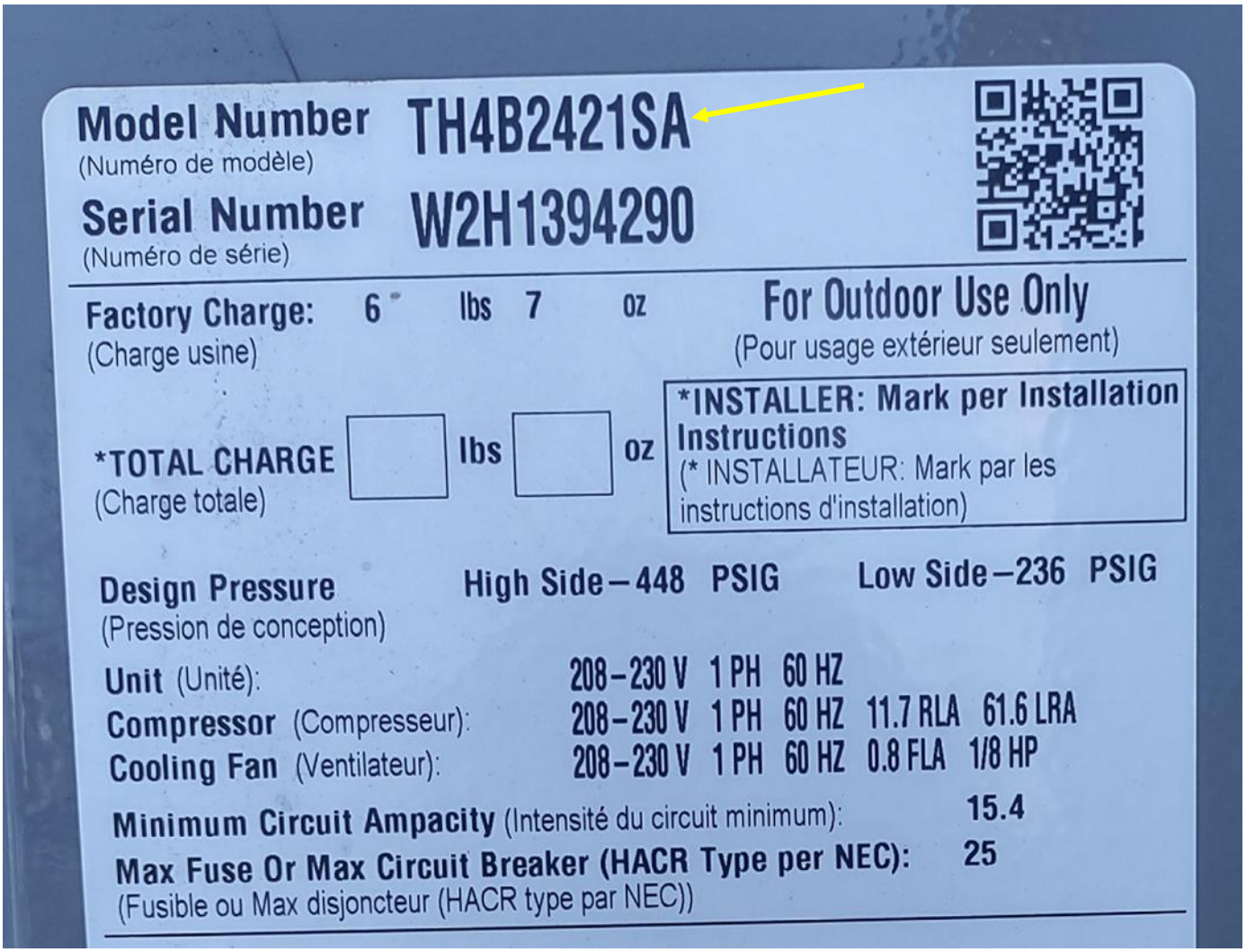


HVAC / HEATING & COOLING AREAS:

The Model # of the Heat Pump does not match the contractor's spec sheet.



These two Heat Pump model numbers are comparable according to the manufacturer.



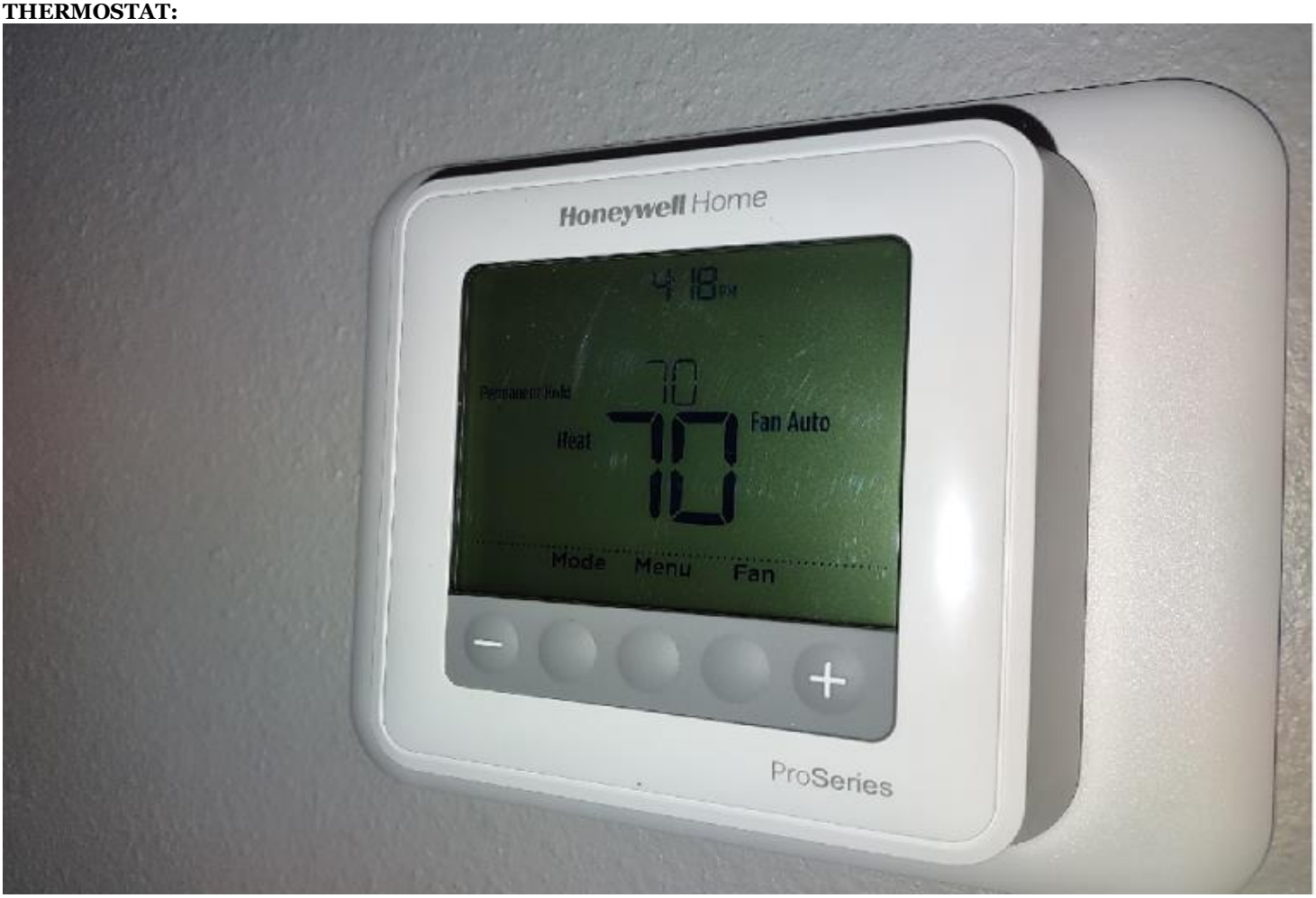
SER Rating means **Seasonal Energy Efficiency** Rating.

SER Ratings go in increments of **2**

EXAMPLE: 14-16-18-20

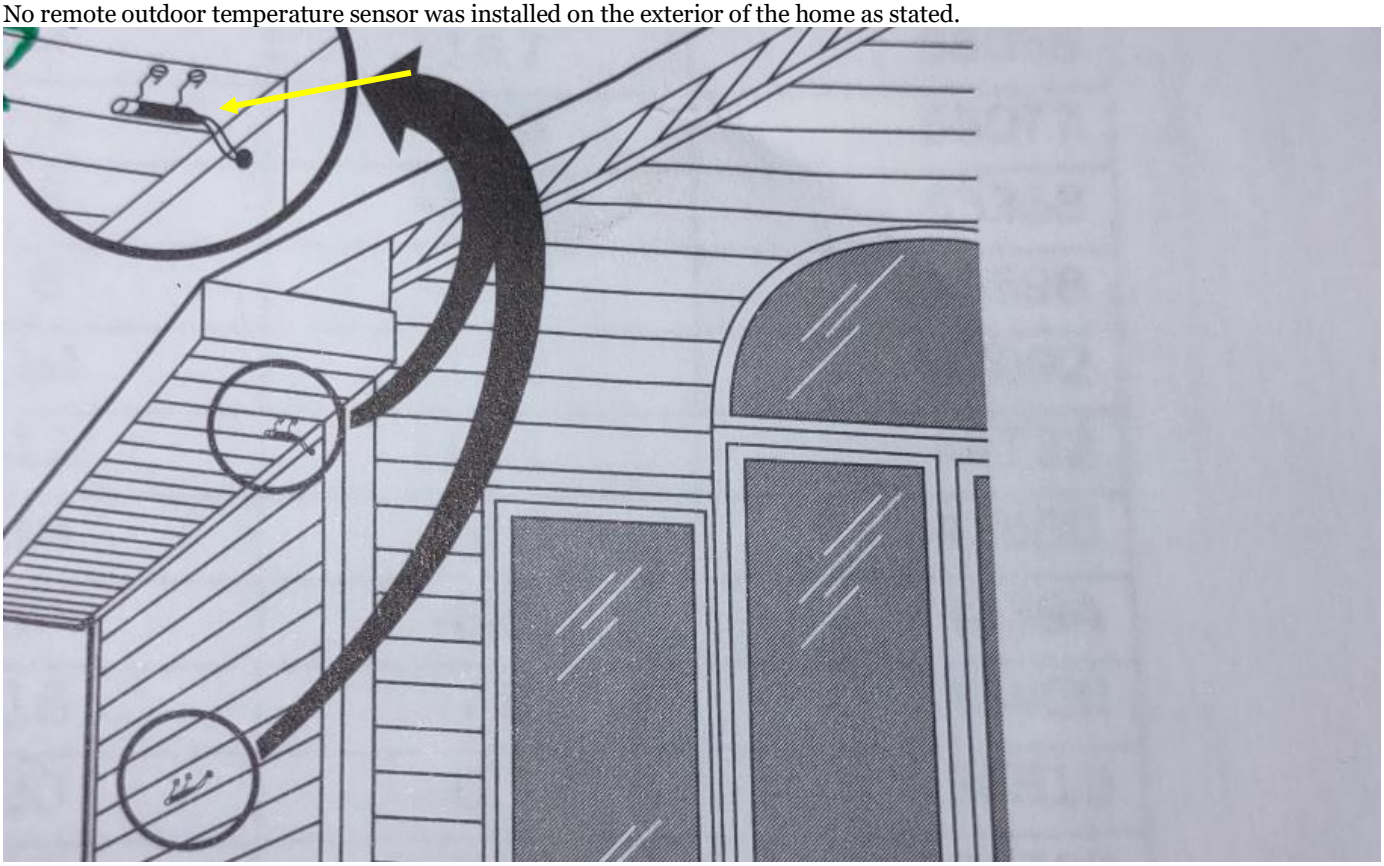
There is no such thing as a **15** SER Rating.

THERMOSTAT:



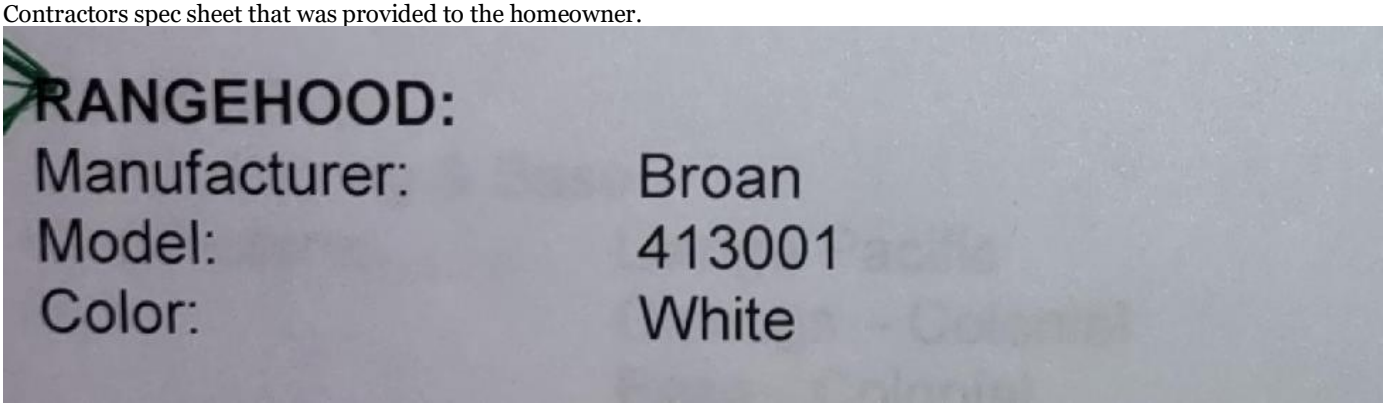
- 24 volt programmable Heat Pump Thermostat
  - It has a remote outdoor temperature sensor
  - It has a dual sub-base for heating and air-conditioning
  - Batteries need to be installed in the thermostat

No remote outdoor temperature sensor was installed on the exterior of the home as stated.



APPLIANCES:

Contractors spec sheet that was provided to the homeowner.

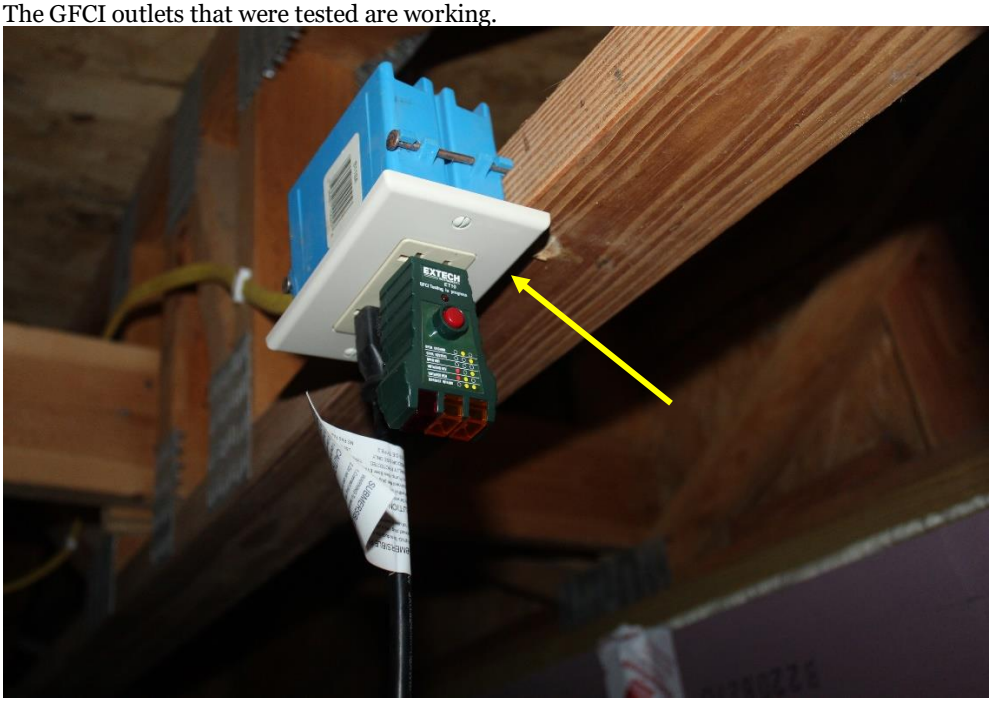


No rangehood was noticed to be installed.

ELECTRICAL AREAS:

The ground rod that was installed in the foundation wall for grounding the electrical service appears not to have been utilized for grounding the system. Further investigations would be needed to see if the installed ground rod is being used. The grounding connection could be at the base of the foundation footing.

The GFCI outlets that were tested are working.



The electrical system was finalized by the State Electrical inspector.

The PDF on Life Expectancy that was provided to you is a part of the contract & the report in its entirety. The scope of a typical Commercial property & Residential inspection and areas to be inspected are based on various factors; Age, occupancy, intended use, type of construction used & property conditions are considered when determining how the property will be inspected. A typical home inspection is not exhaustive with endless time involved.

Inspections can range from visual examinations of a property to comprehensive inspections of a building's technical components. Further tradesmen of individual components & systems may be needed or recommended by the Inspector for further investigation and or bids to repair any such systems & their components listed or not listed in the report. Other items of concern may be noticed during any repairs, renovations, or any further investigations. Black Hills Professional Home Inspections LLC shall not be held liable for the condition of your home or any further tradesmen conducting any work on your property. This inspection was a visual inspection and for documentation purposes.

Recommended Licensed Professionals to further evaluate the home:
Structural Engineer
Foundation Specialists
Professional Siding & Roofing Experts
Professional Plumbers & HVAC Technicians
Licensed Electricians
Professional & Licensed Contractors

If you need anything else, please contact me anytime.
Thank You Again!

END OF REPORT:
11-7-23