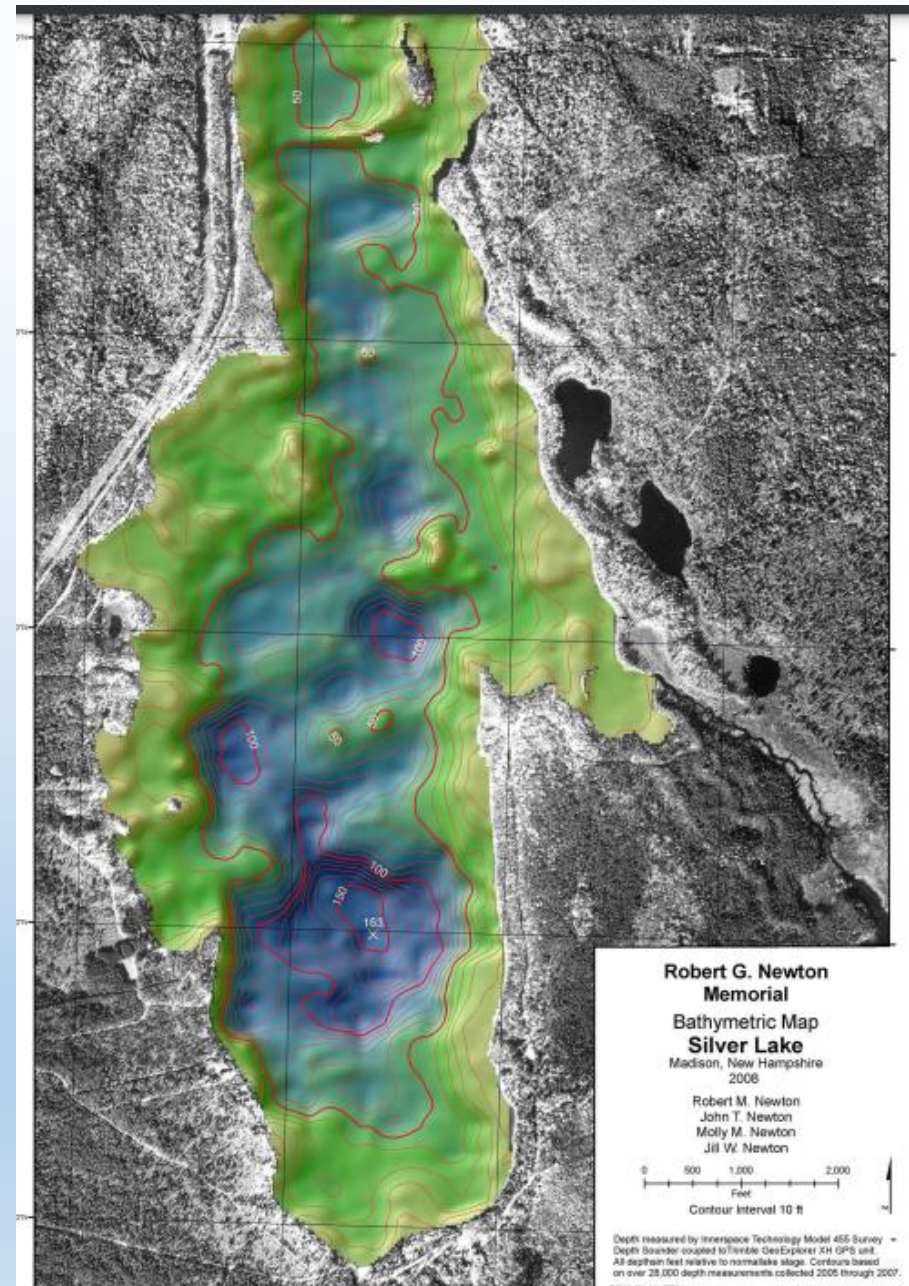


Helping preserve Silver Lake

Madison, NH





LakeSmart



**Award for
lake-friendly living**

www.nhlakes.org



LAKESIDE

A QUARTERLY PUBLICATION OF NH LAKES—FALL 2022

Just Fix It! A Lifetime of Caring for a Special Lake Home Your LakeSmart Fixes Stop Polluted Runoff Water

Dirk and Mary Landis were one of many generations of caretakers who rented the little brown cottage on Silver Lake in Madison each summer. They share a love and enjoyment of the lake with other families. And, they shared responsibility for the home itself.

"Everyone took care of the property and the lake like their own. When something needed fixing, you just fixed it," Dirk and Mary explained.

They had an opportunity to buy the lake home in 2021, and they did! They did it to preserve the home and to honor those who spent countless hours there creating lakeside memories.

During rainstorms, Dirk and Mary could see a flood of water running across the property and down to the shoreline. They knew the runoff water was carrying unwanted and harmful nutrients into their beloved lake and was poisoning it. They also knew the future of the lake they loved would be in danger if steps weren't taken to stop runoff water.

Because of your support, they found the LakeSmart Lake-Friendly Living Program. And, they decided to do what generations of people



"Silver Lake is a part of our family's history. We want our grandchildren, and those after us, to enjoy it as we have."

—Dirk and Mary Landis

who loved this lake home have always done: fix the problem.

First, Dirk and Mary hired a professional to modify how water

runs off their driveway. Now the flood of water flows through vegetation, filtering out pollution and soaking into the soil.

Next, they installed steps of crushed stone and timbers leading down to the shoreline. The new steps slow down and soak up runoff water so it doesn't pollute the lake.

For Dirk and Mary, being LakeSmart honors the history of their property, and all those who love and care for the lake. Their LakeSmart sign celebrates our community's commitment to restoring and preserving lake health, and they hope it inspires others to do the same.



The new infiltration steps, comprised of crushed stone and timbers, prevent runoff water from funneling into the lake. The steps soak up runoff, provide safe access to the shoreline, and are attractive!

Find Out How You Can Be LakeSmart!

The first step to becoming LakeSmart is to take an online self-assessment. Your responses are confidential, and you'll receive a personalized report right away with tips on lake-friendly improvements to your property. Get started at lakesmart.nhlakes.org.

Working Together for the Lakes We All Love



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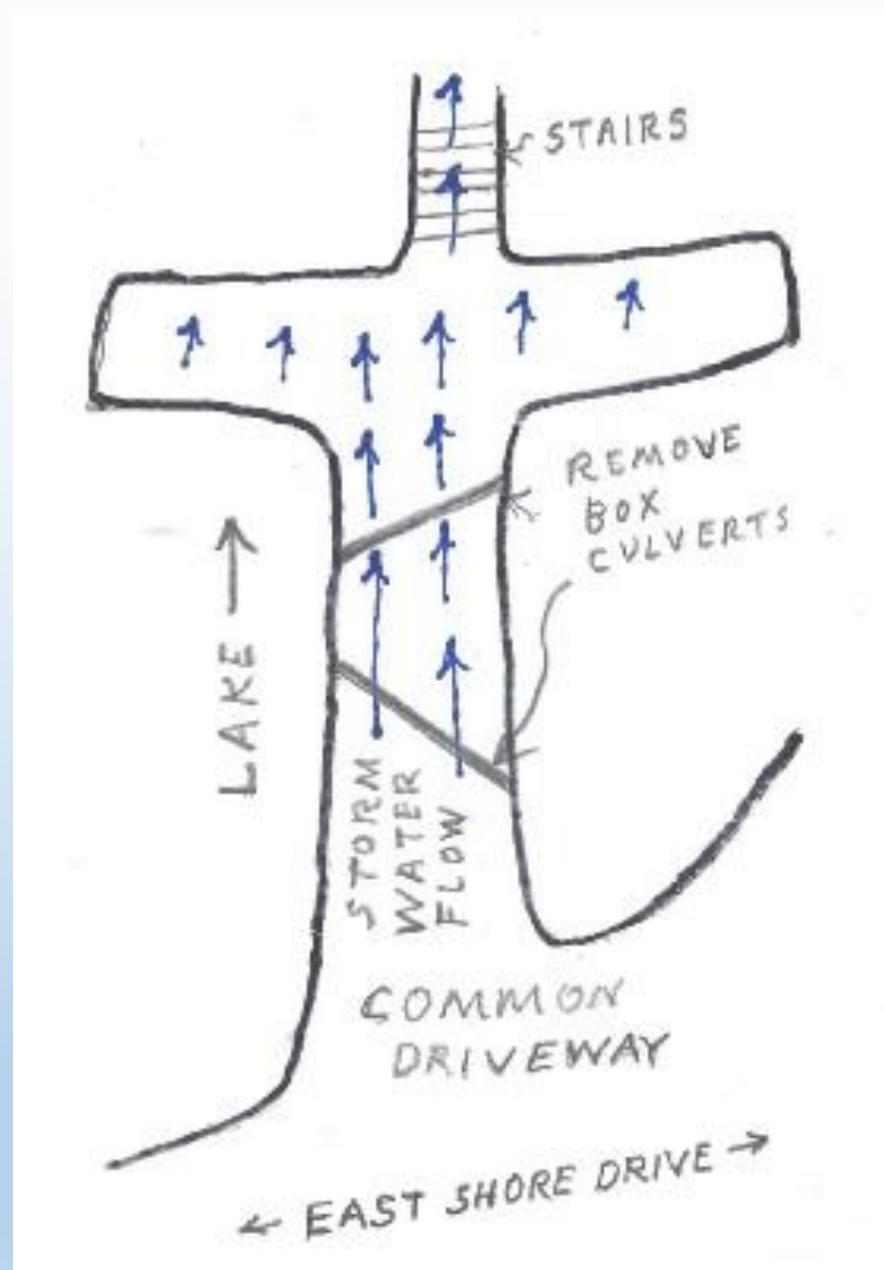
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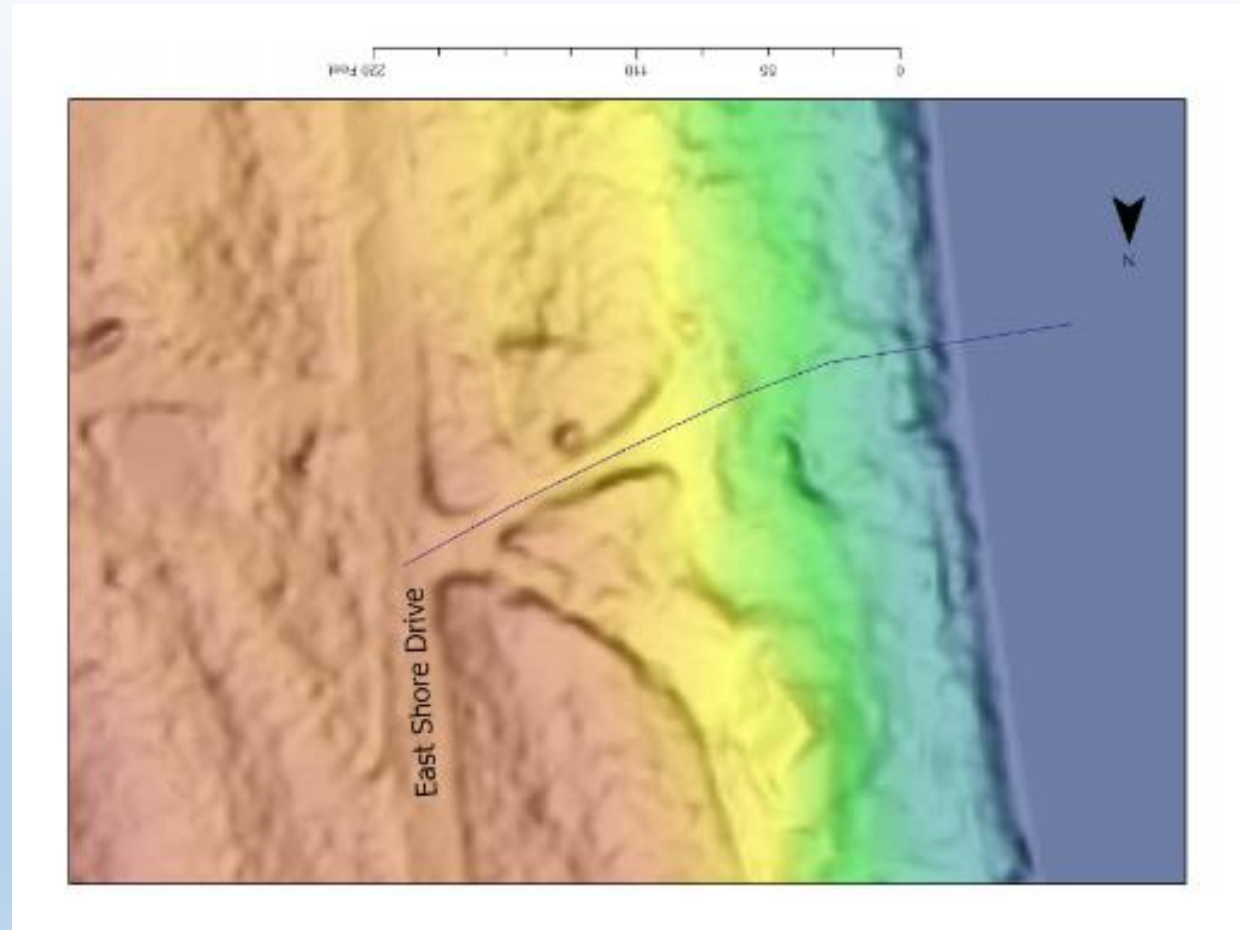
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Where water
went before
reconstruction



The driveway leads towards the lake and it is critical to prevent runoff from reaching it.



Sources of Phosphorous in the environment:

- Contributed in concentrated form as fertilizer, detergents, sewage, & manure
- Occurs naturally in soil and organic material

The goal: divert as much stormwater as possible off into the woods on each side before it reaches the bottom of the driveway



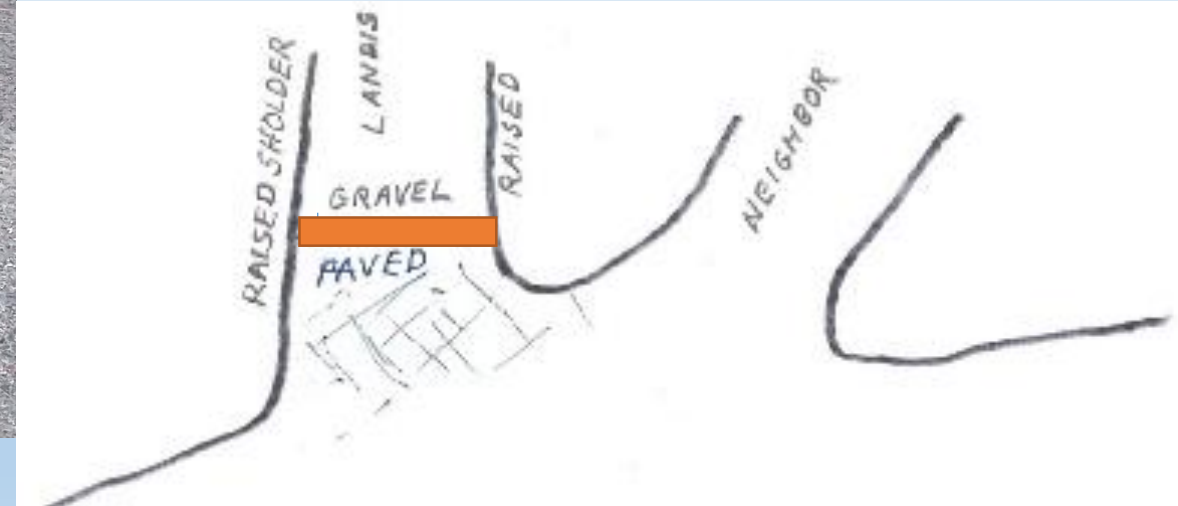






Raised
shoulder

If the edge of this driveway was not a raised shoulder I would have placed a berm at the edge of the pavement to have diverted water off of the road into the woods



Dirk saving his border stones



Open top
box culvert



Typical open top box culvert,
great silt collector





Materials

The best material starts as solid rock that is drilled & blasted...

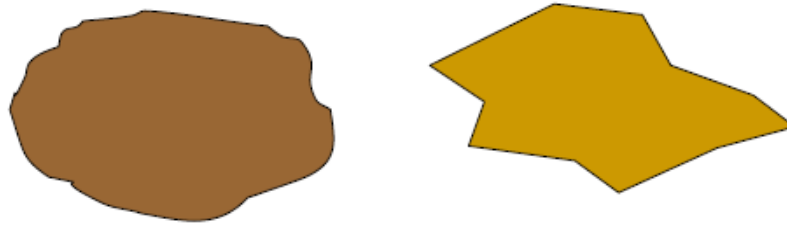


Then crushed into smaller pieces and screened to produce specific size aggregate



- One inch of rain on one acre = over 27,000 gallons of water
- Roofs and blacktop drives heat up in sun, transfer heat to rainwater
- Fish don't like hot water

- Besides producing “aggregate” that is uniform in size and, occasionally, in content of fines versus stone, this process makes stone that is much more angular than that made just from screening bank run gravel



Locking aggregate (stones) together
is most important on hills for

- ➡ stability and
- ➡ erosion control

The road base

- Mix of sand and rock for strength
- Minimum of “fines” for drainage

- **“Dirty” gravel *packs* but
does not *drain***
- **“Clean” gravel *drains* but
does not *pack***

Spotting buckets of 1 ½" State Mix



Note that this “State Mix” is graded flat with much of the 1 ½” stone worked to the side to provide erosion control



The road surface...

- **Lots of small aggregate** (stones) to provide strength with a **shape** that will lock stones together to support wheels

The road surface...

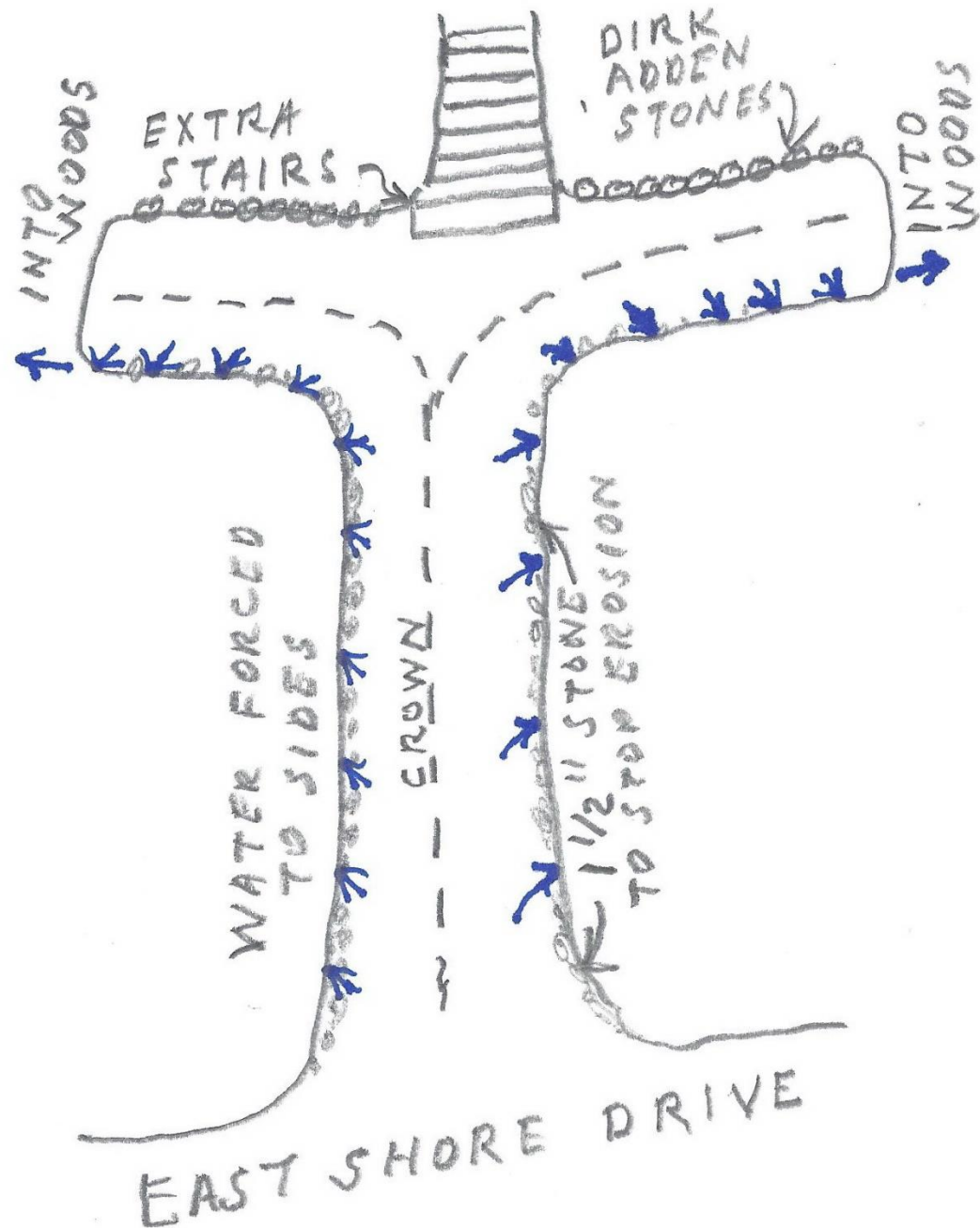
- **Lots of small aggregate** (stones) to provide strength with a **shape** that will lock stones together to support wheels
- **Sufficient “fines,”** the binder that will lock the stones together, to keep the stones from moving around

Ledge pack





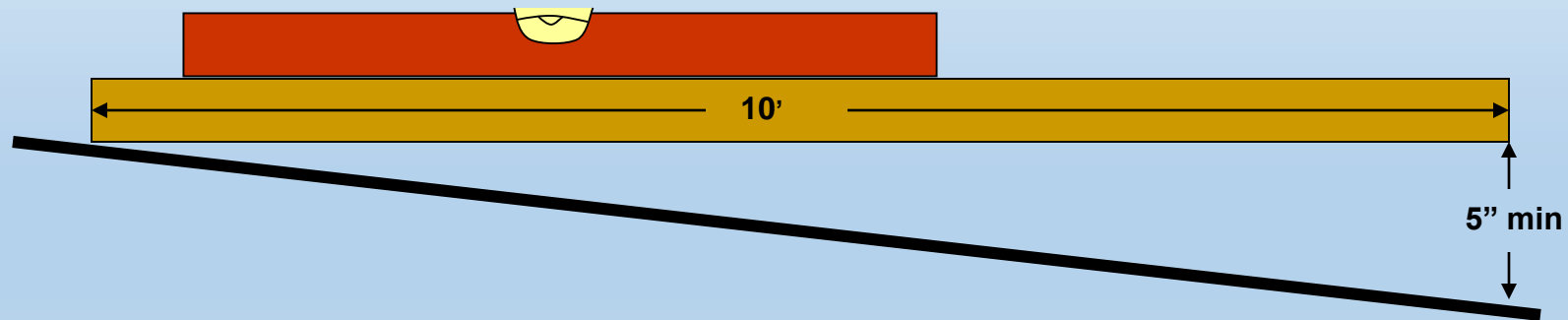
$\frac{3}{4}$ " Ledge pack is graded to a crown to shed water to each side



$\frac{1}{2}$ " to $\frac{3}{4}$ " per foot

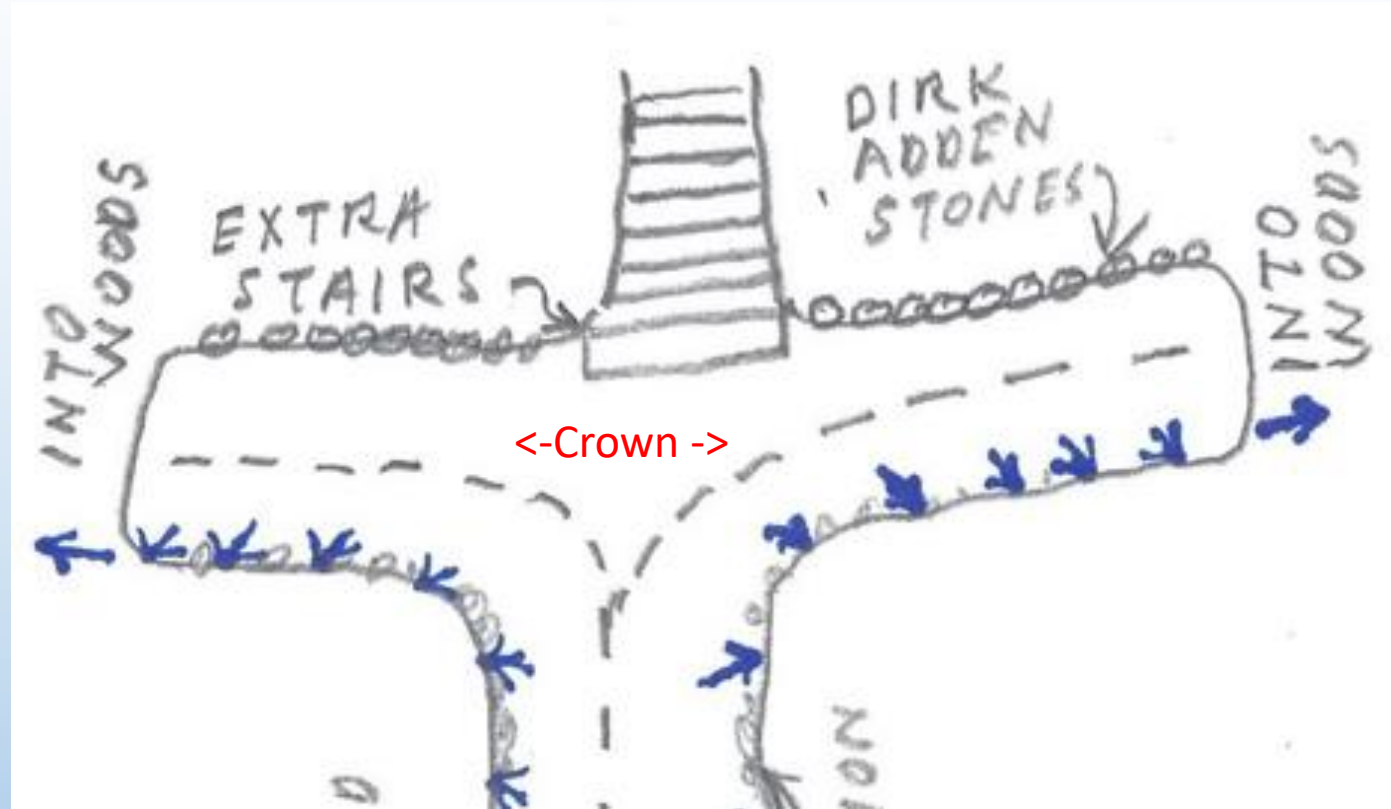
Put another way, this is 5" to 7½"
per 10' of lane width

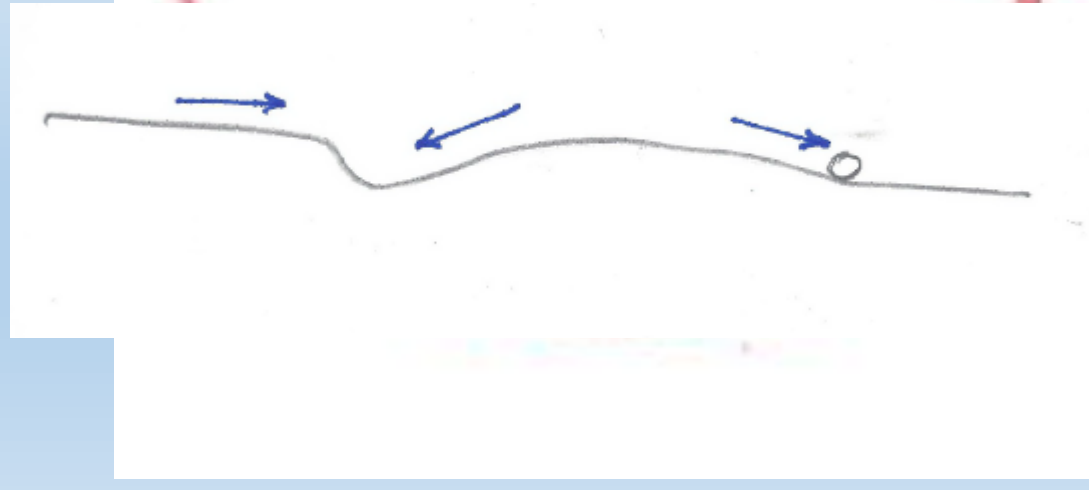
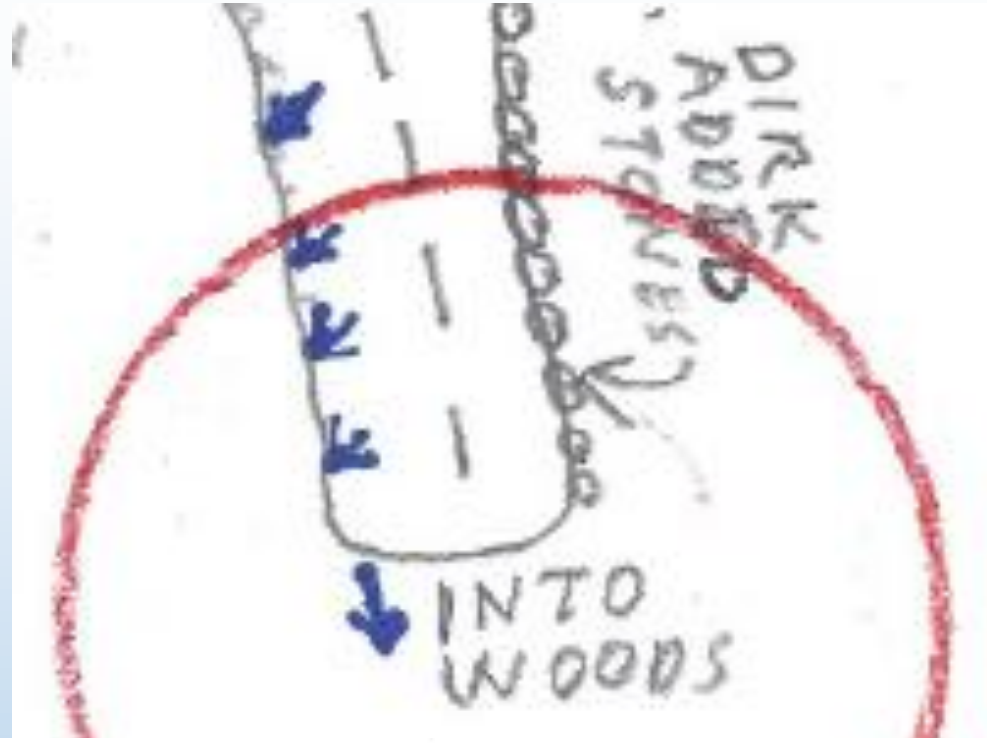
To measure this:
carpenter's level and 10' straight stick



Note that the parking areas flare out to each side of the driveway. The crown is continued to the center of each side forcing water (blue arrows) into the woods

Cabin and LAKE





- A proper combination of correctly sized broken rock, sand and silt/clay soil materials will produce a road surface that hardens into a strong and stable crust that forms a reasonably impervious surface for our road or driveway

Other surfaces, especially for steep slopes

Though asphalt can be a solution for excessively steep driveways

- Looks very “municipal,” losing gravel’s rural look
- Speeds up the flow of stormwater
- Heats up stormwater when sudden summer showers occur
- Requires a strong, well drained base
- Is not always as permanent as it may seem



The best way to care for a camp road in winter!





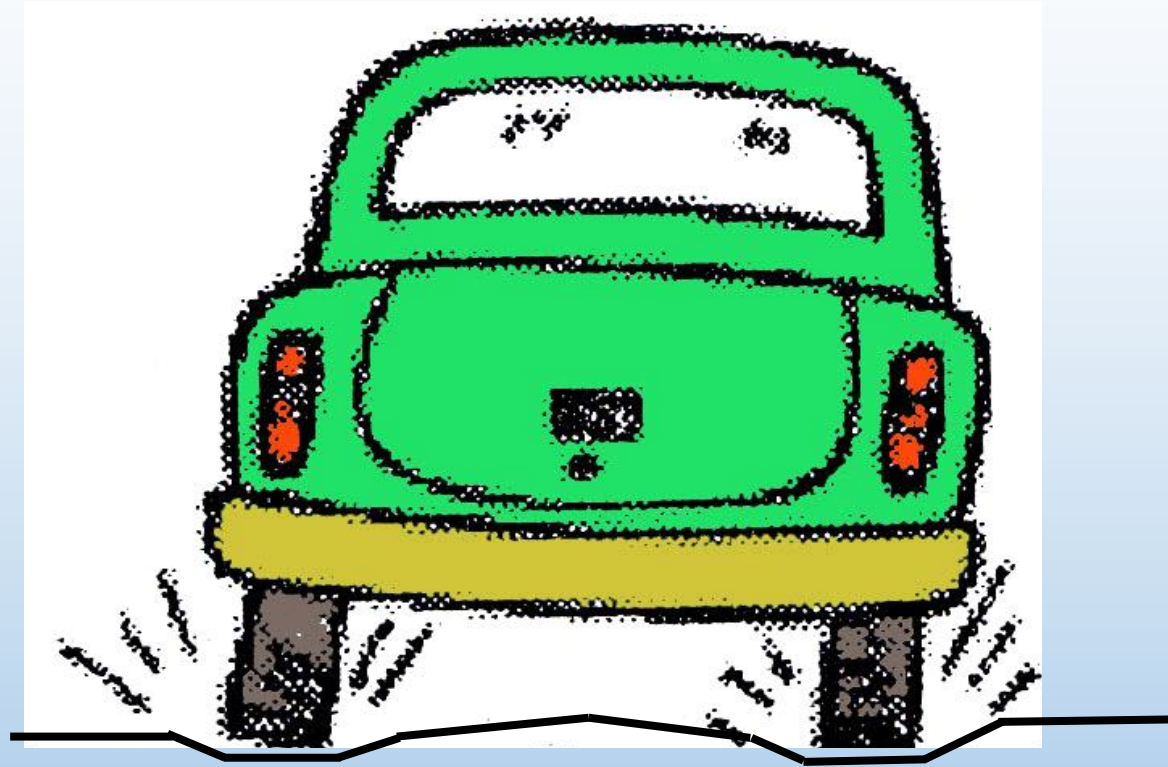
Clearing accumulated leaves

Double ruts



Wheel tracks allowed to
become washouts

Don't drive in the ruts!



Look hard, you'll see the beginning





Add geotextile (road fabric)



Landis driveway May 16, 2023



Look ma, no washouts!



The goal of this project:

- Direct stormwater to the side(s) of the driveway

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- Let it seep into this very porous woodland area to
- ***Protect pristine Silver Lake for future generations***

Stay tuned to other stormwater solutions from other pond and lakefront homes around the area

**Keeping your
Home's Feet Dry**

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[How to dry out existing
basements and keep new
basements from ever getting
wet](#)



**An owner's manual for
those who live and travel
on dirt and gravel roads**
by Russ Lanoie, Conway, NH

[An owner's manual for those
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gravel roads](#)



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Got Mud? Ruts? Potholes?



**Russ Lanoie can make
your unpaved road,
driveway, or
parking lot
look its
best!**





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**Includes a complete Troubleshooting Guide and Quick Tips
for low cost/no cost things you can do right away to
improve your unpaved road or driveway**

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