

# Squirrel bridge project

Updated 4/10/2026.

## Location

Location of the squirrel bridge is proposed to be situated on the [REDACTED] street of Duvall, next to the [REDACTED] (my property) on the north side. The adjusted property owners on the north side (lot [REDACTED]) and across the street on the south side (lots [REDACTED] and [REDACTED]) also verbally agreed to support the project as long as it is properly approved by the city and doesn't pose harm to the trees or danger to the road. The rope bridge is to be at an angle from the north side tree right at the property borders between the lots [REDACTED] and [REDACTED] to the clump of evergreen trees on the border between the [REDACTED] and [REDACTED] lots. The bridge will be at a small angle and not perpendicular to the roadway direction due to the existing location of the trees. This location is important because:

1. It is approximately the midpoint of the street.
2. The squirrels are frequently observed crossing the road at this location, they travel on the fence line between the houses on the north side frequently and also have been observed living in the clump of the evergreen trees on the south side next to the mailboxes. Squirrels are arboreal and generally feel safe climbing the trees.
3. There are no existing cables over the road to help them cross and the fatalities have occurred.



Street side view with the proposed rope bridge in yellow



North side tree at the base



South side tree at the base



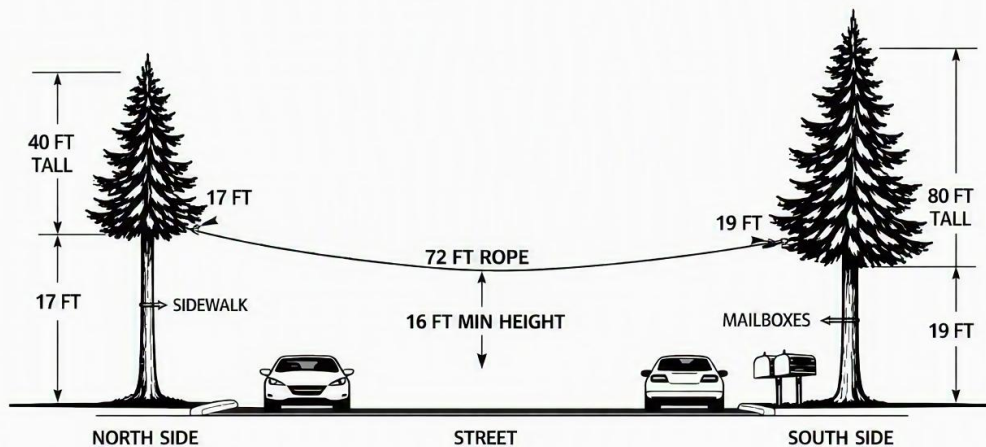
## Side view

The span of the rope bridge (the distance between the two existing trees) is 72 feet. The tree on the north side is estimated to be 40 feet tall, while the tree on the south side is much larger and estimated to be at least 80 feet tall. While the tree on the north side is smaller and younger, both trees are relatively mature, and the trunks are estimated to be at least 8 inches in the diameter at the attachment points as described below.

The smaller tree on the north side is double western red cedar. It has about 8 inches in diameter trunk at 17 feet above ground. The larger tree on the south side is a Douglas fir. It

has about 20 inches in diameter trunk at 19 feet above ground. 8 inches diameter is standard for power lines poles, and we estimate it will be more than enough to support the rope bridge, and we do not expect any bending in the tree after adding the rope bridge and applying tension. However, our consulting engineer advised us that there is no way to precisely model the behavior of a live tree, and we might need to do small adjustment to the attachment point heights, after we attach the bridge. Since the south side tree is larger, we might need to install bridge at vertical angle, adjusting attachment on the north side not lower than 17 feet above ground, while simultaneously adjusting the attachment point on the south side no higher than 21 feet above ground. Alternatively, we can also install cable tie down on my property for the north side tree. However, most likely this will not be needed. At any rate we will maintain the minimum 16 feet clearance above the travelled roadway (plus 1 foot buffer).

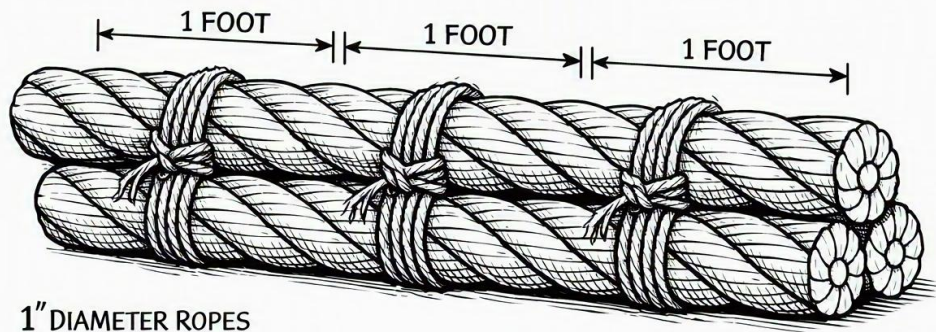
In order for the squirrels to feel safe using the bridge, it needs to be mounted with some tension to make it feel stable. This tension will also reduce sagging and further help maintain 16 foot clearance over the useful lifespan of the bridge.



## The rope bridge design

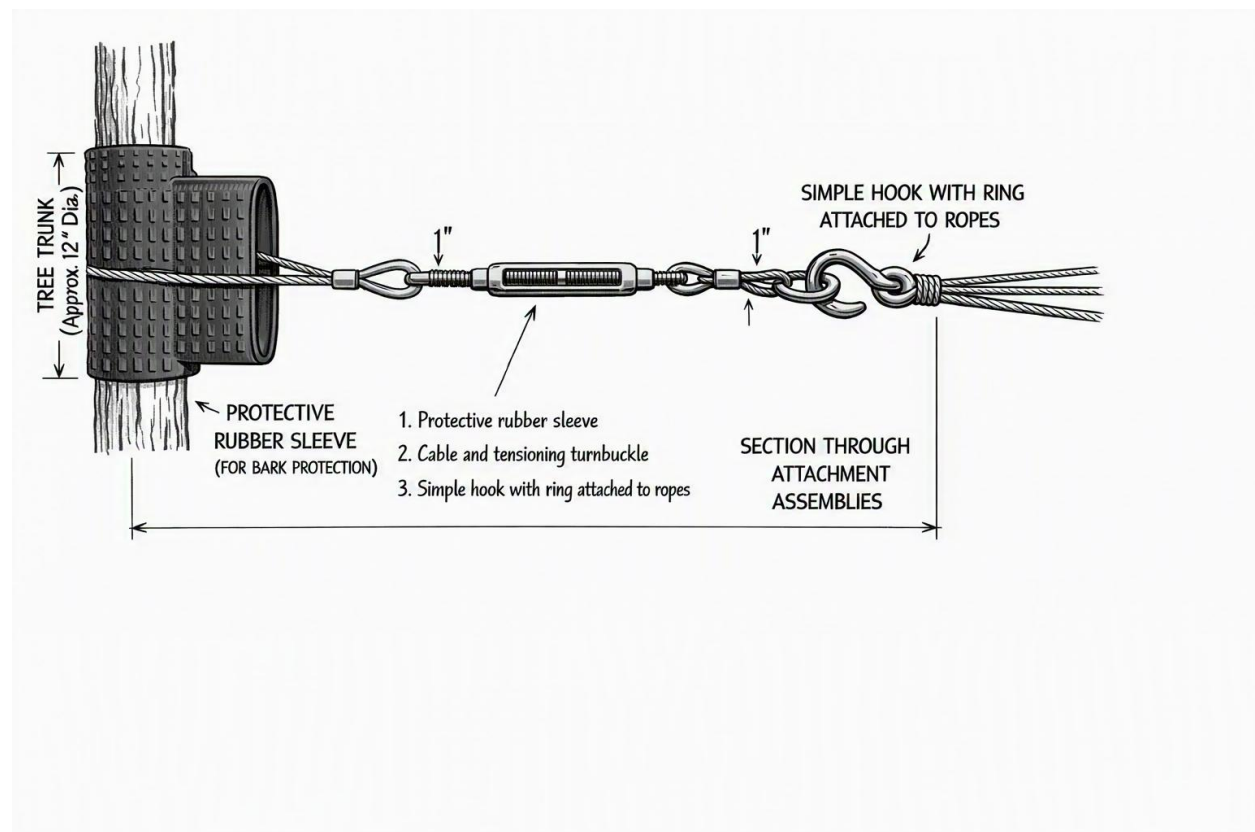
For this project to work, we need to make sure the bridge is wide enough for the squirrels to use and feel safe on, provide grippy surface for their claws and feel stable (not dangle) under the squirrel weight. Very large winds, however, are not a concern, as the squirrels will probably not be active during the windstorms anyway. Measuring existing fence line surface that squirrels have been observed regularly, we have estimated that the squirrel bridge should be around 2-3 inches wide.

For the material we will use weather treated natural jute rope and weather treated jute twine. Our consulting engineer recommended putting 3 1 - 1.5 inch diameter 4 strand ropes together in a triangular shape to achieve most stable design and reduce rolling. We will use jute twine to tie the ropes together with a loop at 1-foot intervals. This will provide about 2 inches of walking surface (when we attach the rope bridge, we will put the two-rope side up).





## Attaching the rope bridge to the trees



1. In order to avoid harming the tree bark, we will wrap the tree with a rubber sleeve around the attachment point.
2. We will wrap a cable around the rubber sleeve and attach the hook and hook turnbuckles so that we can adjust the tension of the bridge.
3. We will attach the rope bridge to the other end of the turnbuckle with a hook to allow for quick release and removal of the bridge in case of emergency if needed.

## Response to the engineering comments

1. The required roadway clearance is 16 feet. The initial design assumed a 14-foot clearance based on information I received by email. After confirming the 16-foot requirement, I consulted with my engineer and contractor and determined that the best approach is to install the rope bridge at an angle, the north tree (smaller double western red cedar) attachment height is estimated to be 17 feet, and the south side tree (larger douglas fir) attachment height is estimated to be 19 feet, given the planned tension in the rope bridge we estimate that will allow us to maintain the required 16 feet of clearance, however, contractor and engineer will measure the clearance after rope installation and adjust the attachment heights if necessary to maintain clearance and buffer. Based on that new information pages 2 and 3 were updated with new height information and the updated diagram.
2. Engineering review expressed the concern about the use of locking carabiner as the quick release mechanism. After discussion with the contractor, we think the safest quick release mechanism would be a simple hook and ring, this way if a car accidentally pulls on the ropes, the ring will slide right off the hook. Based on that the design on page 4 was updated.