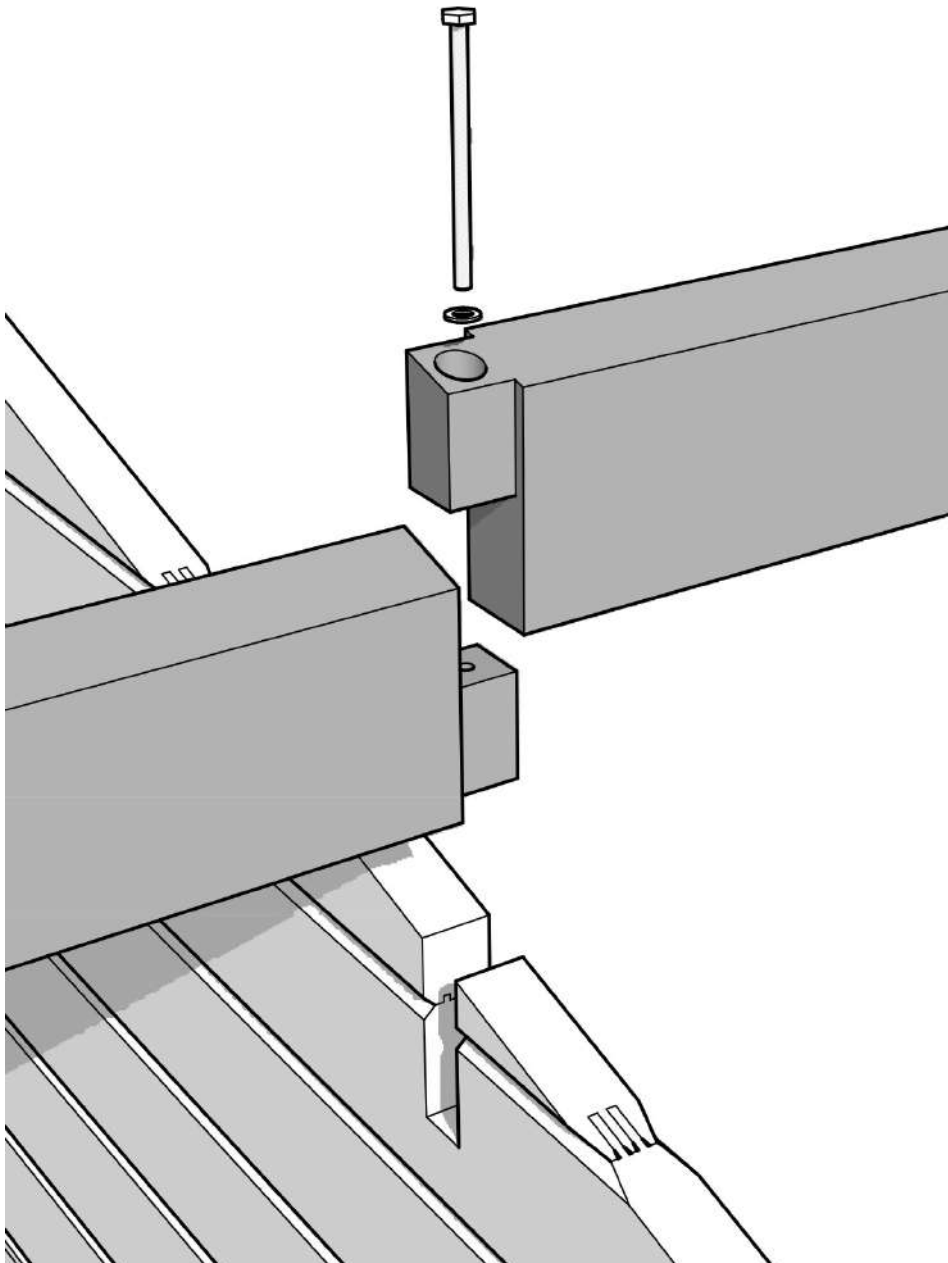


Main Roof Beam Connection Process:

Sequence is critical - the document emphasizes following the proper order:

1. **Preparation:** Gather all necessary parts for beam assembly
2. **Ground Assembly:** Connect beam parts together on the ground first (but don't screw them yet), ensure straight alignment, then screw them together
3. **Installation:** Place the assembled beams on top of the roof triangle



Special Case – Roof Beam to Wall Connection:

Critical Rule: Don't Modify Beam Lengths

- » All beams come in equal lengths as designed
- » **Never cut beams** to change their length - this compromises the structural integrity and engineering

Structural Function

- » Short beams that terminate at walls still carry roof loads
- » The wall becomes a critical support point - it's not just holding the beam, it's supporting that section of the roof structure
- » This creates a different load distribution compared to beams that span completely across

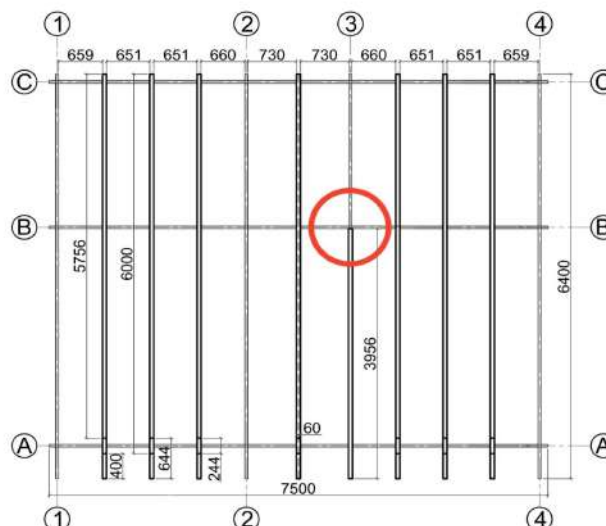
Why Precision Matters

- » There's a **"very thin line between a good job and a mistake"**
- » Poor execution can add hours of rework to the project
- » Precise calculations are essential because:
 - » The beam must align perfectly with the wall
 - » The connection point affects structural integrity
 - » Any misalignment impacts the entire roof system

You're not just making a simple cut - you're creating a precise structural connection where the wall must perfectly support both the beam and the roof load above it.

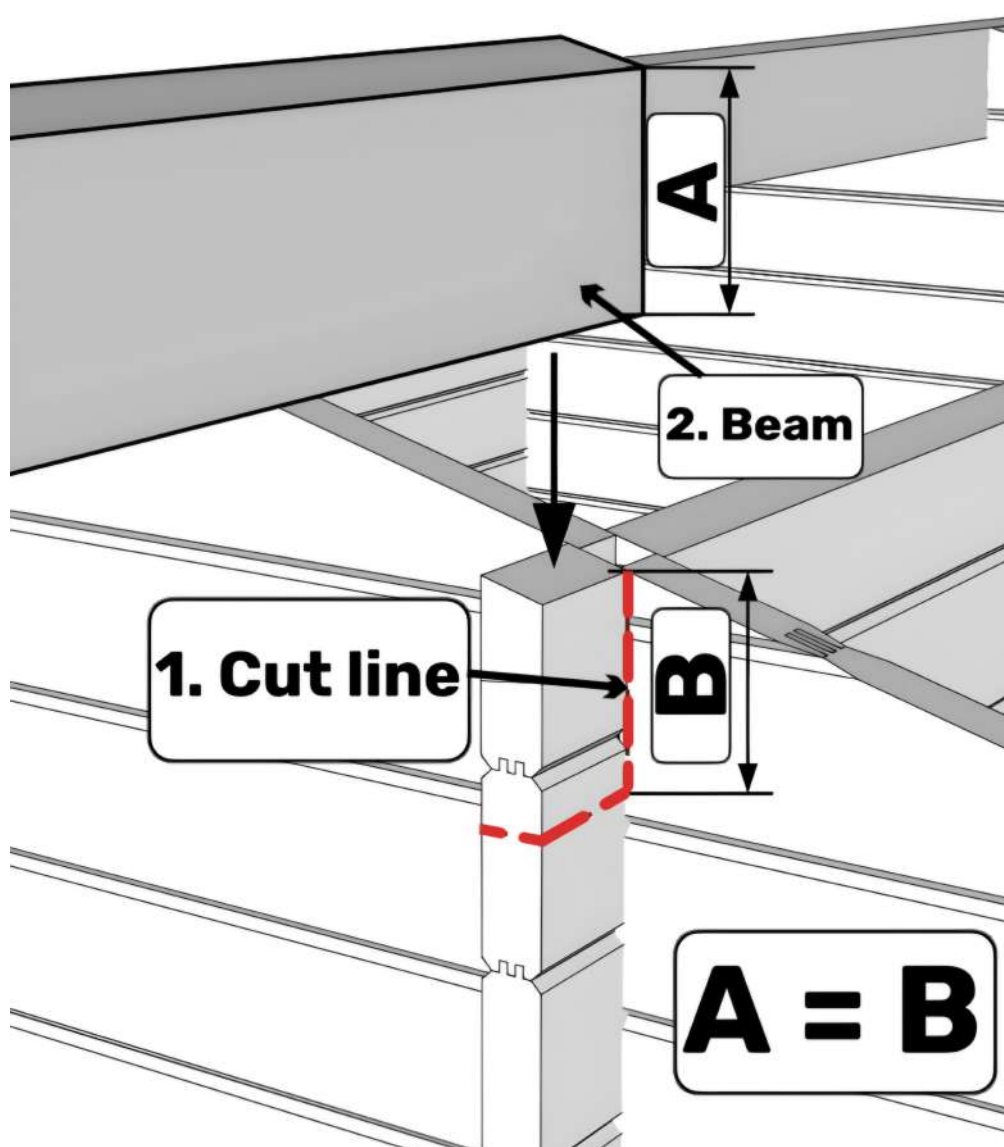
The emphasis on starting with the shortest beam first also makes more sense with this understanding - since you may need to make multiple attempts to get the precision right, it's better to work out the technique on the most challenging piece first.

Roof plan



Tools that will be useful or necessary:

Tools



Roof beam connection to the wall – 1. Cutting line; 2. Roof beam

RECOMMENDATION FOR A BEAM CONNECTION

This recommendation addresses a specific structural vulnerability in cabin construction:

When This Applies:

- » **Edge beam connections** - where the beam is at the perimeter of the cabin
- » **Cantilever situation** - the other end of the beam extends out with **no support from below**
- » Creates a "floating" beam end that relies entirely on the connection point for structural integrity

Why Glue Reinforcement is Needed:

- » **Increased stress concentration** - all the load from the unsupported beam end transfers through the single connection point
- » **No redundant support** - unlike beams with support at both ends, failure of this connection could be catastrophic
- » **Dynamic loads** - wind, snow, and thermal expansion put additional stress on these edge connections

Application Method:

- » Apply glue **around the connection lock** mechanism
- » This strengthens the mechanical joint and reduces movement/loosening over time
- » Creates a more permanent, weather-resistant bond

This is essentially an engineering upgrade for the most structurally demanding beam connections in the cabin. The illustration would show how a beam extending beyond the cabin's support structure creates a lever arm effect, making the wall connection point bear significantly more stress than interior beam connections.

This recommendation shows good attention to real-world structural performance - recognizing that not all beam connections face the same loads and adjusting the construction method accordingly.

