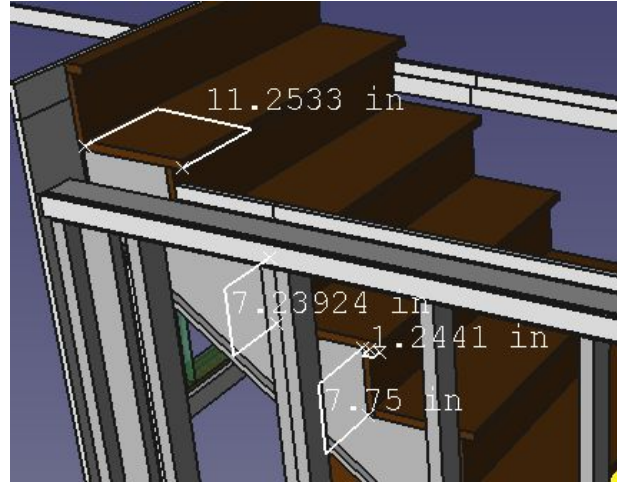


2024 SEH 4 Build



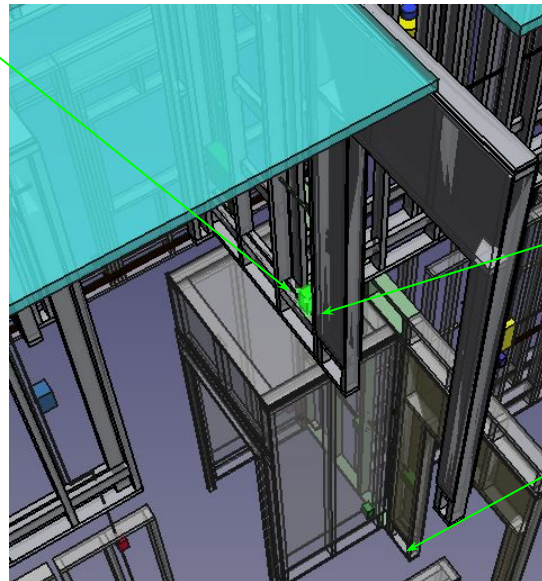
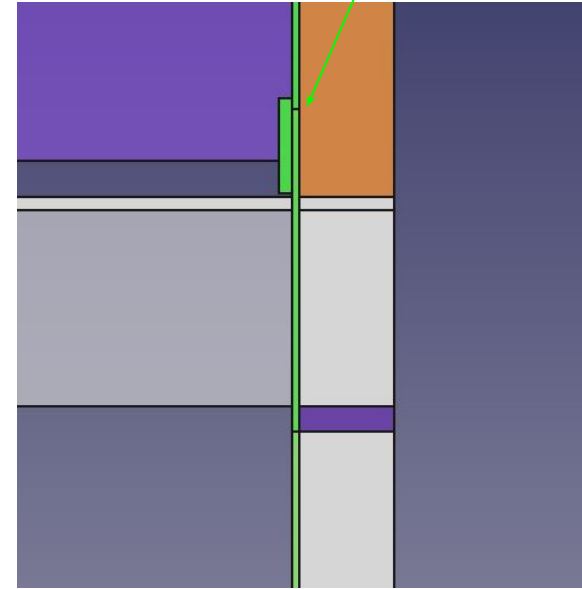
[Link](#)

Stairway Beadboard

CAD

1. **Stairway North Side** - 1x6 trim at floor, covers bottom of beadboard
2. **Stairway hallway Walls** - no utility channel, beadboard from ceiling, use 1x6 trim
3. **Interior walls 2nd Floor** - wherever there is utility channel, we cut the 8' beadboard down. This is entire Bedroom 2, entire bedroom 1. Hallway at top of stairs - no channel, as the channel is in bedroom 1
4. **2nd Floor Bath North Side** - no channel
5. **2nd Floor Bath utility wall side** - channel, as there are penetrations and we want to make this easy

8' beadboard ends there.
Covered by 1x6 trim



Is this outlet required?

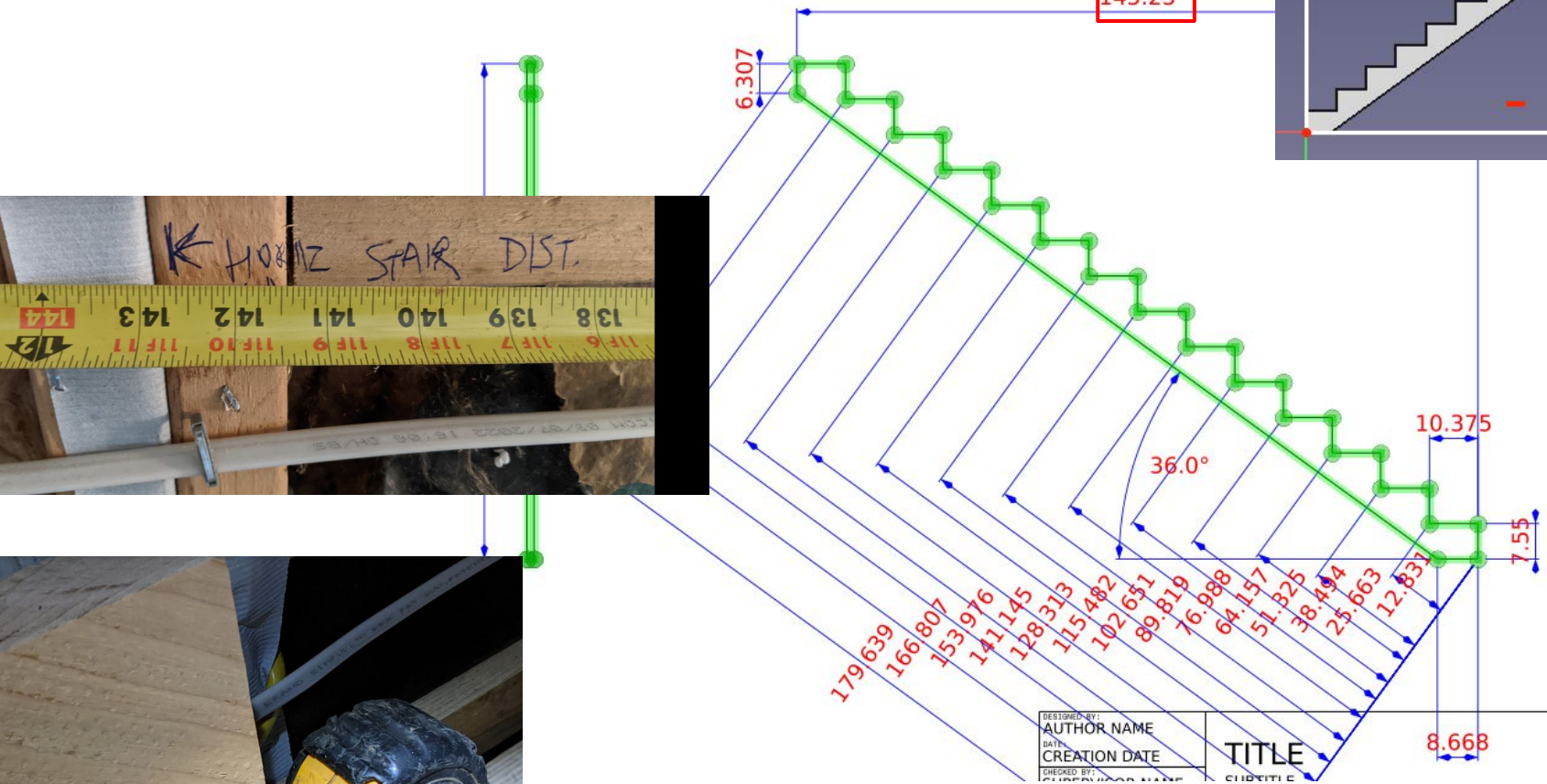
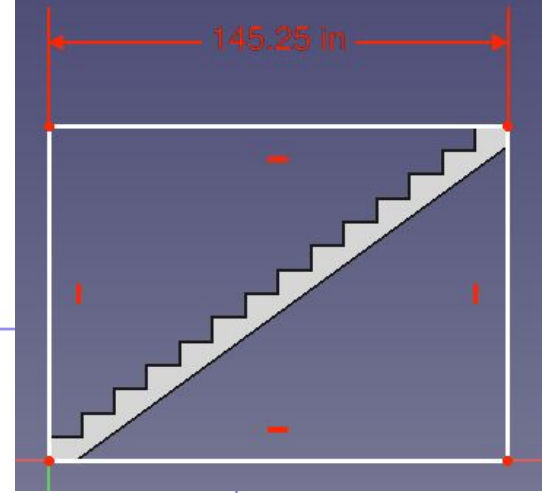
Is this outlet on north part of hallway at top of stairs required?



Controversy

CAD

1. Dimension is 145.25" for horizontal length
2. Actual cut is 143". How did this happen?
 - a. Losing about 1/16" per step.



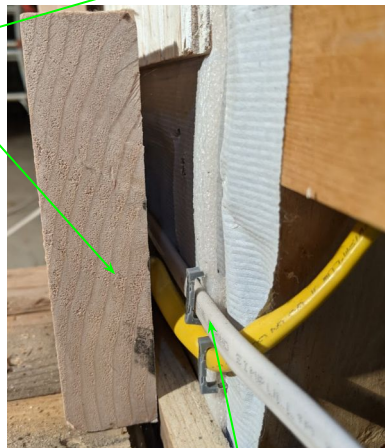
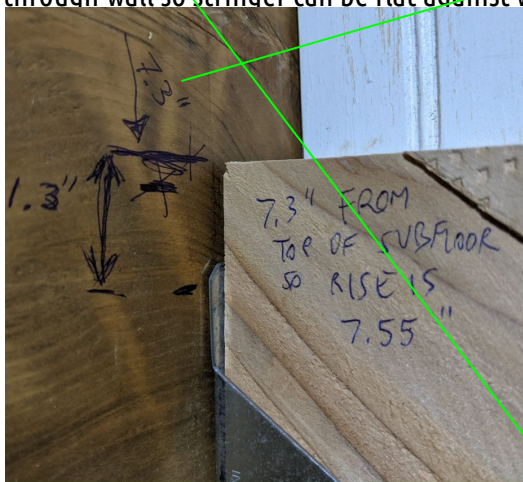
We cut an

Build Procedure

CAD

7.33" + 105.7 + 8 = 121.03. That's actually incorrect - CAD cross section is 122.625"

1. Mark 7.55" from top - 1/4" thick for floor - or 7.3 from top of subfloor. That is the top reach of the stringer. Mark the 7.3" line on the joist. The way it works - the joist ends between last 2 holes
2. Note we poke through back wall from utility channel to through-wall so stringer can be flat against wall



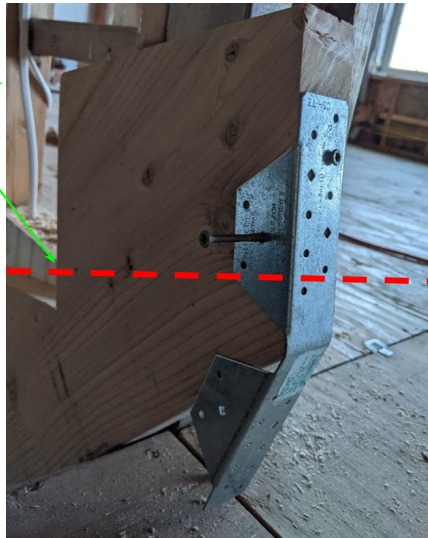
Run these through wall instead



Stringer flat against wall

Wires running through wall instead

3. Hang stringer hanger - at the 6" mark
 - a. Nail in the 9 holes to the joist (not stringer, this picture is not what happens)
 - b. Insert stringers into these, nail with the 3 + 10 + 3 joist hanger nails (4D, 9 gauge, 1.5")
 - c. At bottom, verify ~2" reach onto deck:



Level of Floor joist

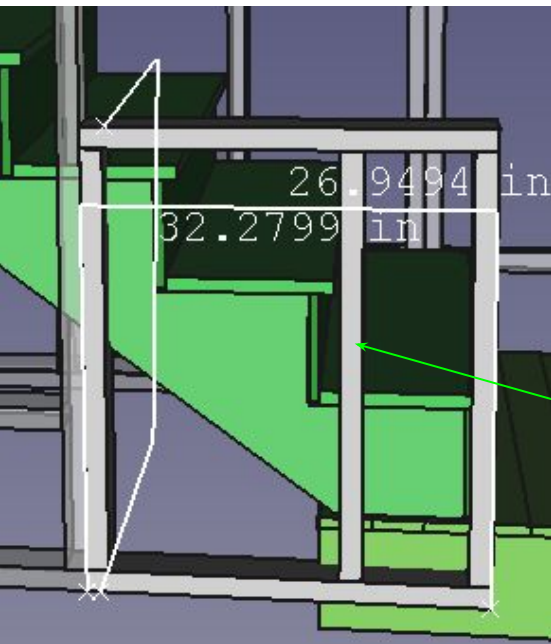
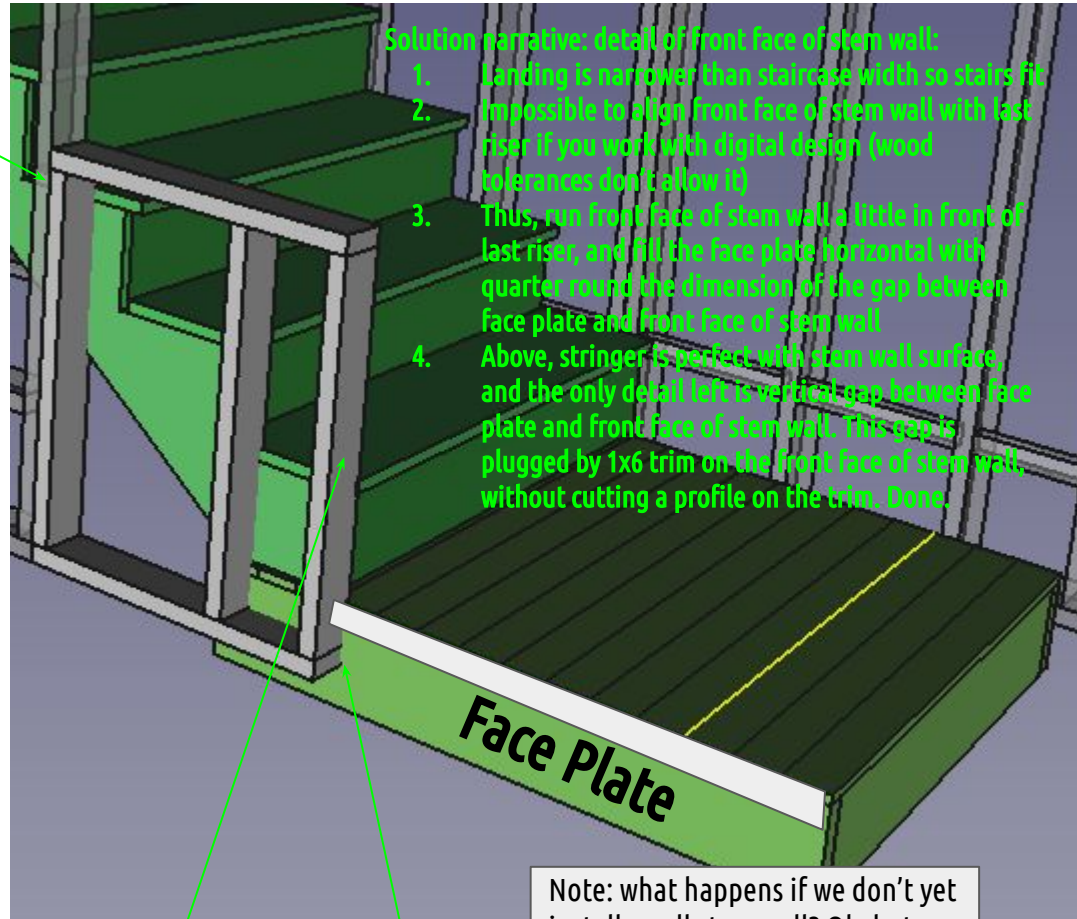


Stair Tolerancing

CAD

Build order:

- Build small wall - 27" long 32" high
 - Ramset sill plate
 - Add blocking for utility channel
 - Add beadboard on the stair side
- Stringer goes on top of beadboard
 - Stringer is exact with beadboard.
- What if landing is narrower?
 - $\frac{3}{4}$ " tolerance is addressed with the trim on top of face plate
 - Riser and stringer are exact on top of the landing
 - Only inaccuracy can be gap between landing face plate and the stem wall
 - This space can be trimmed readily with trim on front face of stem wall?



Note: what happens if we don't yet install small stem wall? Ok, but ideally do it before, as overlap would be difficult.

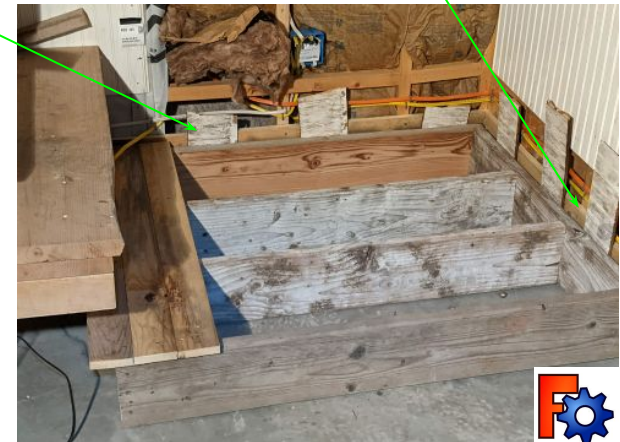
Do we need stem wall? Convenient way to make stair edge neat.

Stair Landing Build

[CAD](#)

Build order:

- Cut all materials as in [cut list](#), up to 3 1x4s upon which the stringers will rest.
 - Undersize the landing width by $\frac{1}{2}$ " compared to measured value to assure fit (41" ideal, so make it 40.5")
- Screw and nail
- Move in to place, but use a 1x2 trim nailer whose top is 8.5" high from floor so beadboard can be stuck in front of it.
- Use beadboard spacers in front of the 1x2 trim nailer to space the landing the correct distance from the corner walls
- Add the stringers
 - Hang stringers on top
 - Nail into walls
 - Rest stringers on landing



Stair View From Below and Cut List

CAD

Cut List:

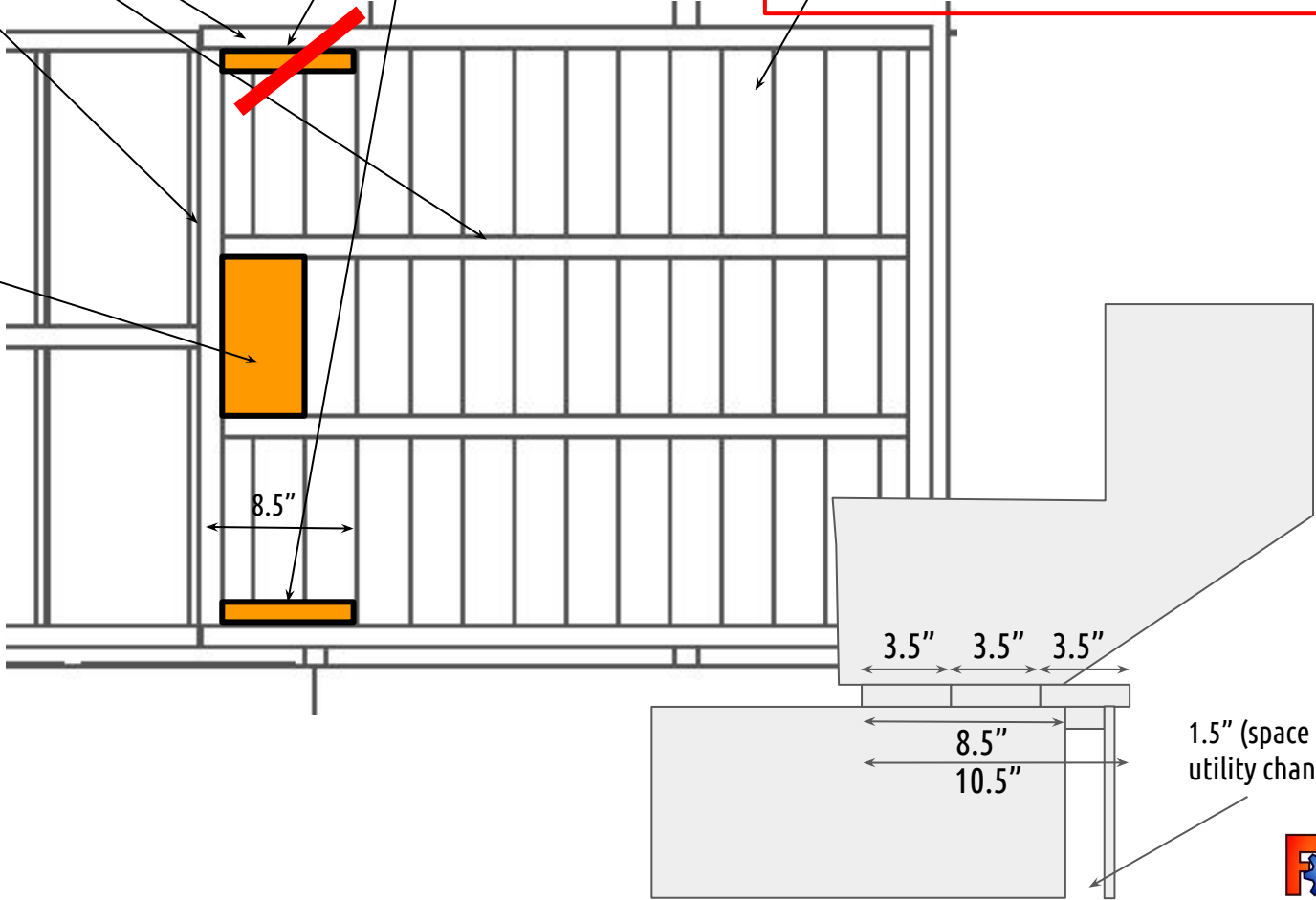
- [2] 2x8, 4' long
- [2] 2x8, 45" long
- [2] 2x8, 38" long
- [3] 2x8, one 10.5" long, others 7"
- [14] 1x4, 41" long
- Mount only 3 - 8.5" away from end

Space between inner and outer wall is 42.5". 1.125 is taken by channel ($\frac{3}{4}'' + \frac{3}{8}''$) on exterior side, and .385 by beadboard on interior side. Thus, exact space for landing is **41"**. Platform should be 41". Measure. Whatever you measure, undersize by 0.5" as this is trimmed easily later.

Double the framing for nailing angle from stringers (2x6)

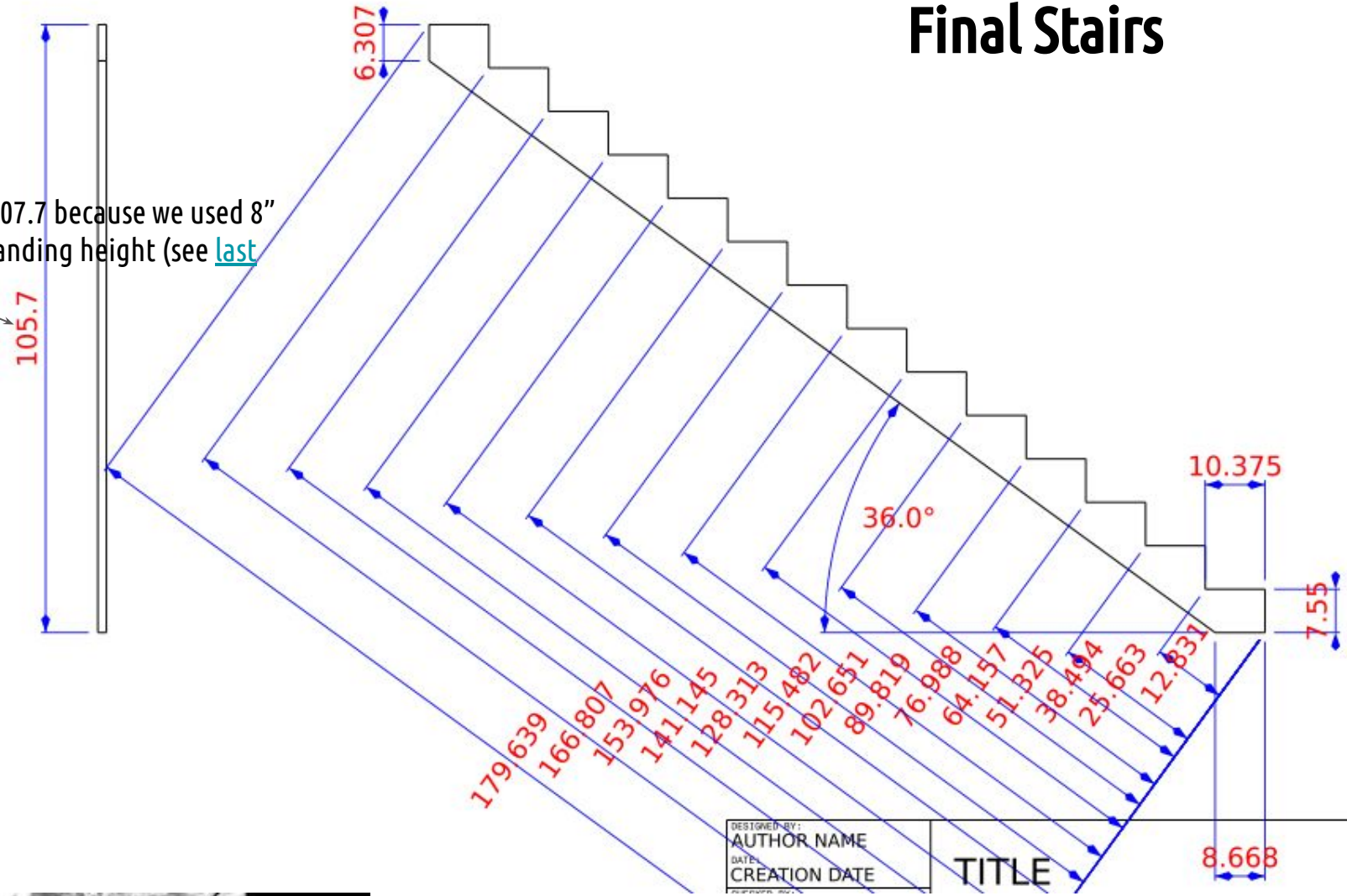
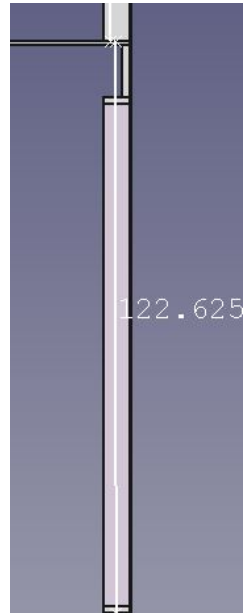
Get rid of them as we are already noid

2x8 nailing board 10.5" long



Final Stairs

Use 2x12 lumber.
 105.7 instead of 107.7 because we used 8"
 instead of 6.25" landing height (see [last page](#)).



Stairs for 2x8 Landing

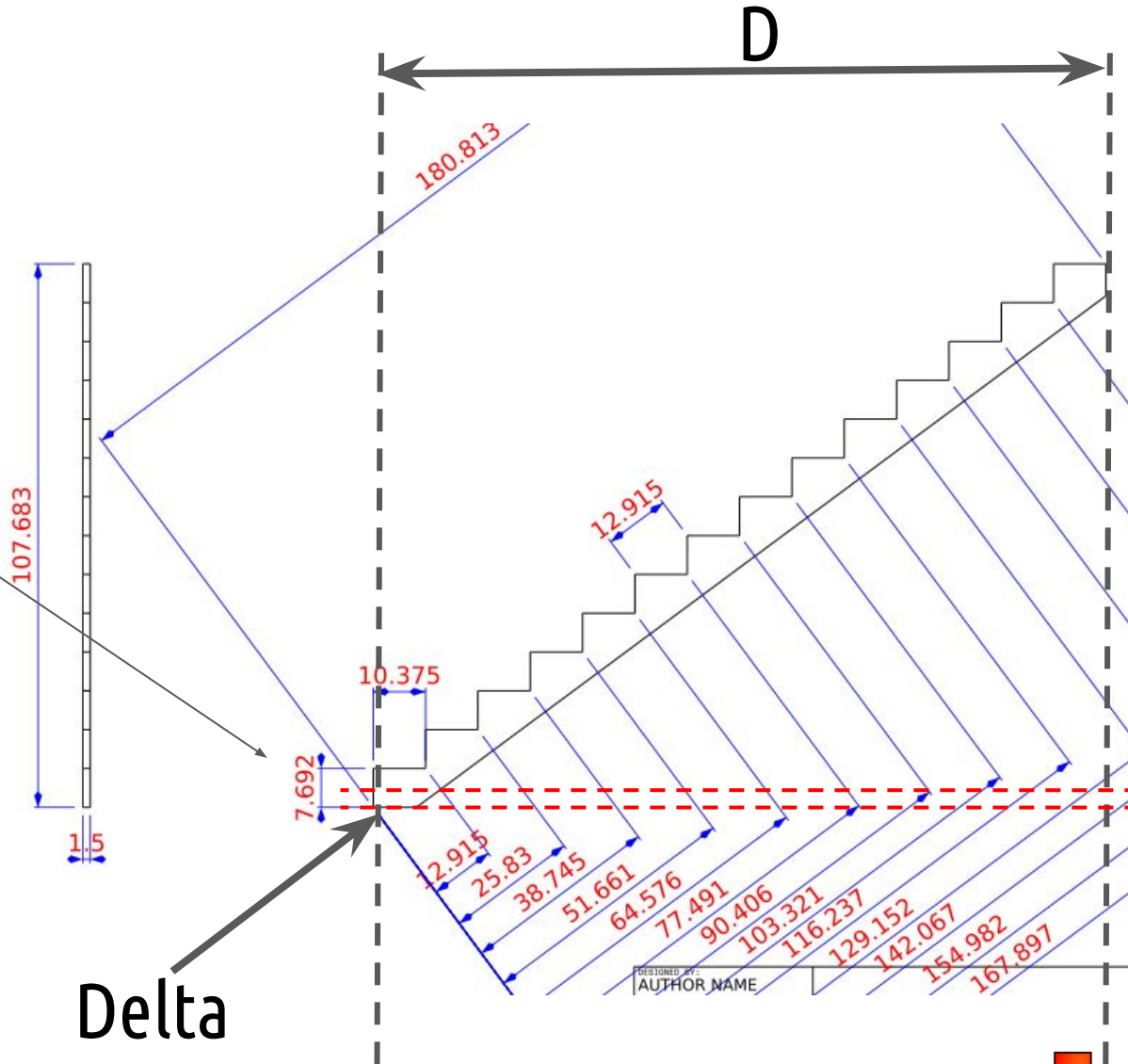
If we fix the horizontal distance- if we raise landing to 8" we drop 1.75" less, and 2" in total as we had a 1/4" gap. No change in number of steps.

Then the angle of the stairs changes slightly.

Rise is $105.7/14=7.55"$

Note that we still need to cut the base by the tread height - 1" - so the first stringer vertical is $7.55"-1" = 6.55"$.

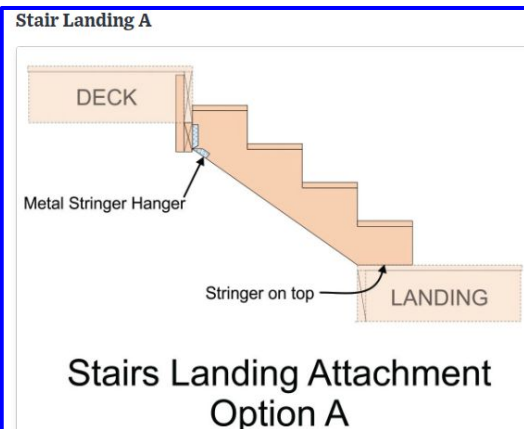
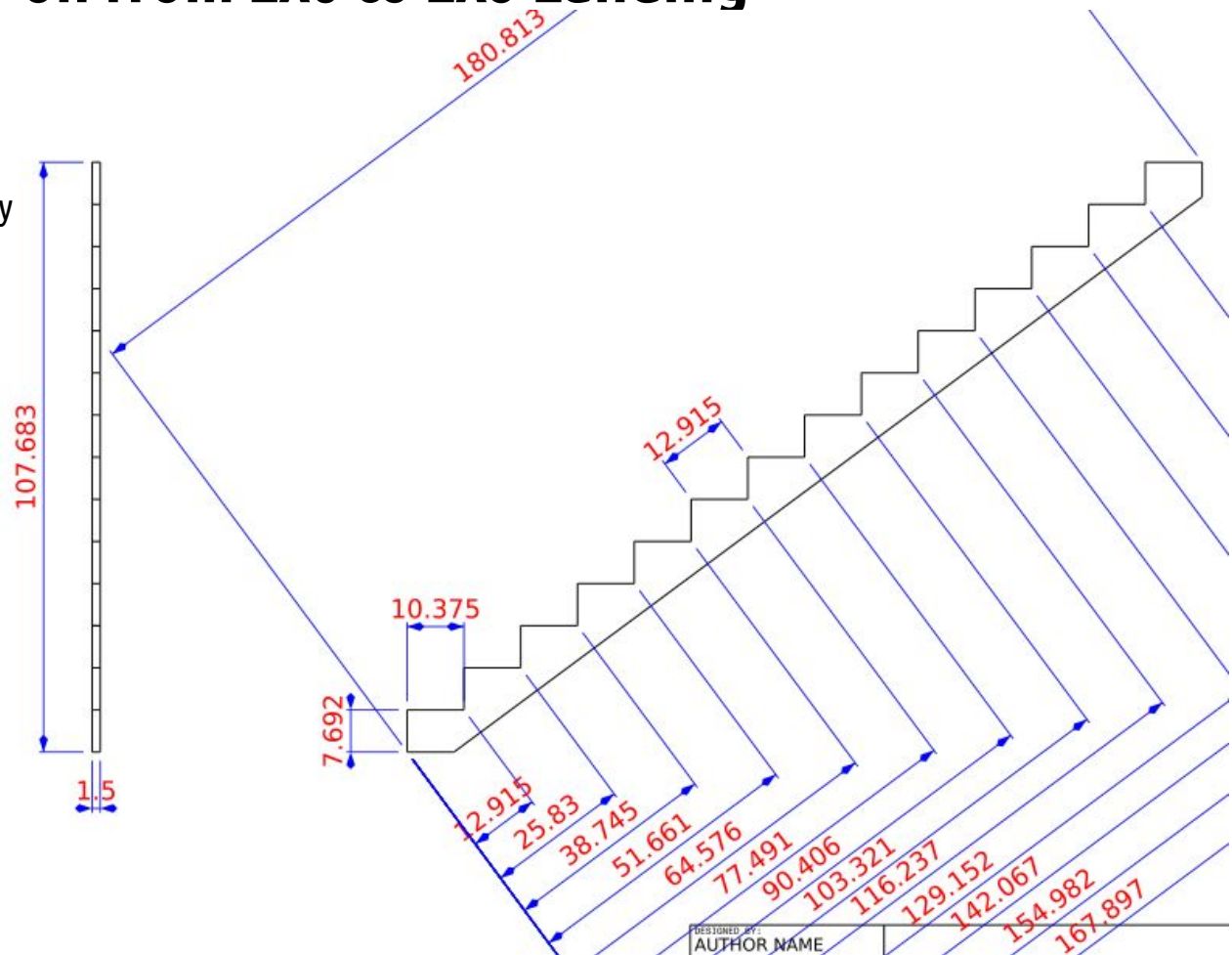
Think about it. With constant tread length, D remains the same. Overall stair drop lessens - meaning slight change in stair angle. Small Delta means there will be a small change in stair angle.



Details - Early 2022 Stairs - Moving on from 2x6 to 2x8 Landing

Let's use a 2x8 landing as the industry standard, so the height is 8" total with 3/4" boards on a 7.25" 2x8.

This means drop is lower - instead of 6.25", we have 8".



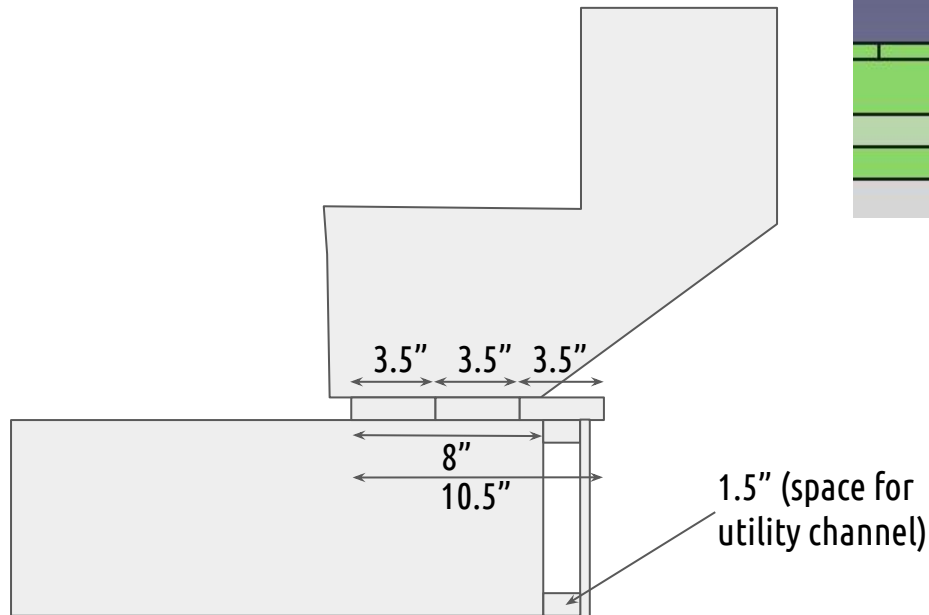
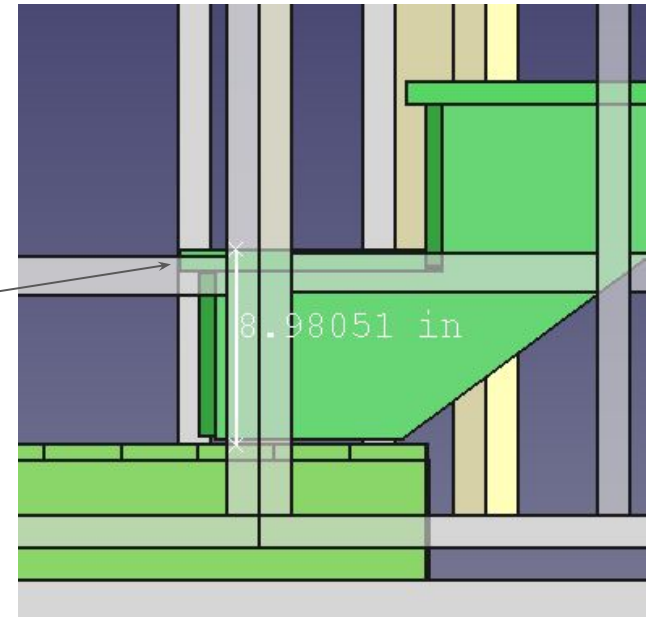
Cutting Stringers



- Make 'sharkfin' - 7.7" by 10-3/8". But - make sure you are going up the right way - it is right and left handed



- Important point: must subtract the height of tread from last step - otherwise the first rise will be greater
 - Here must subtract 1.25" from the 9" rise

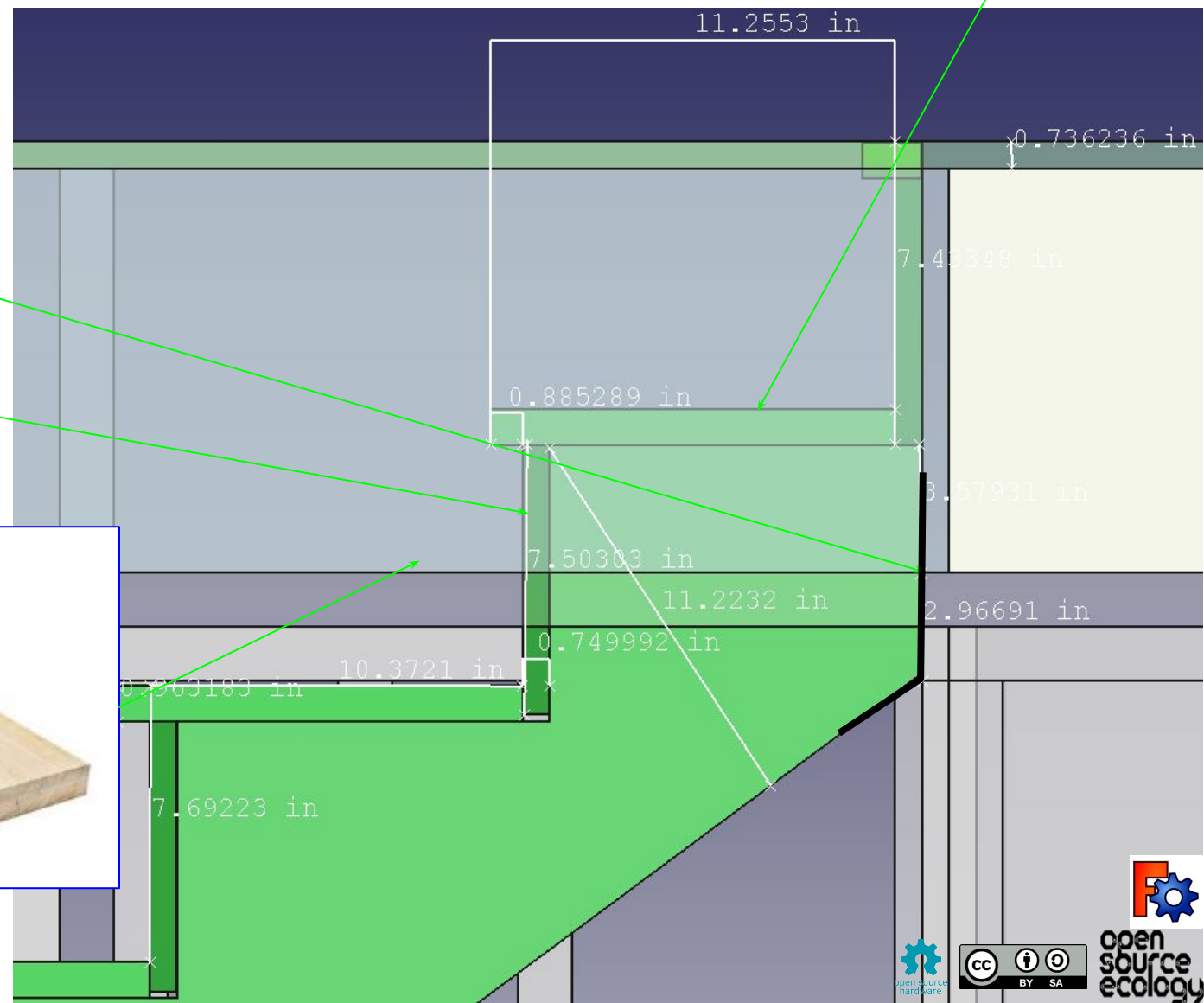


Stair Design Guide

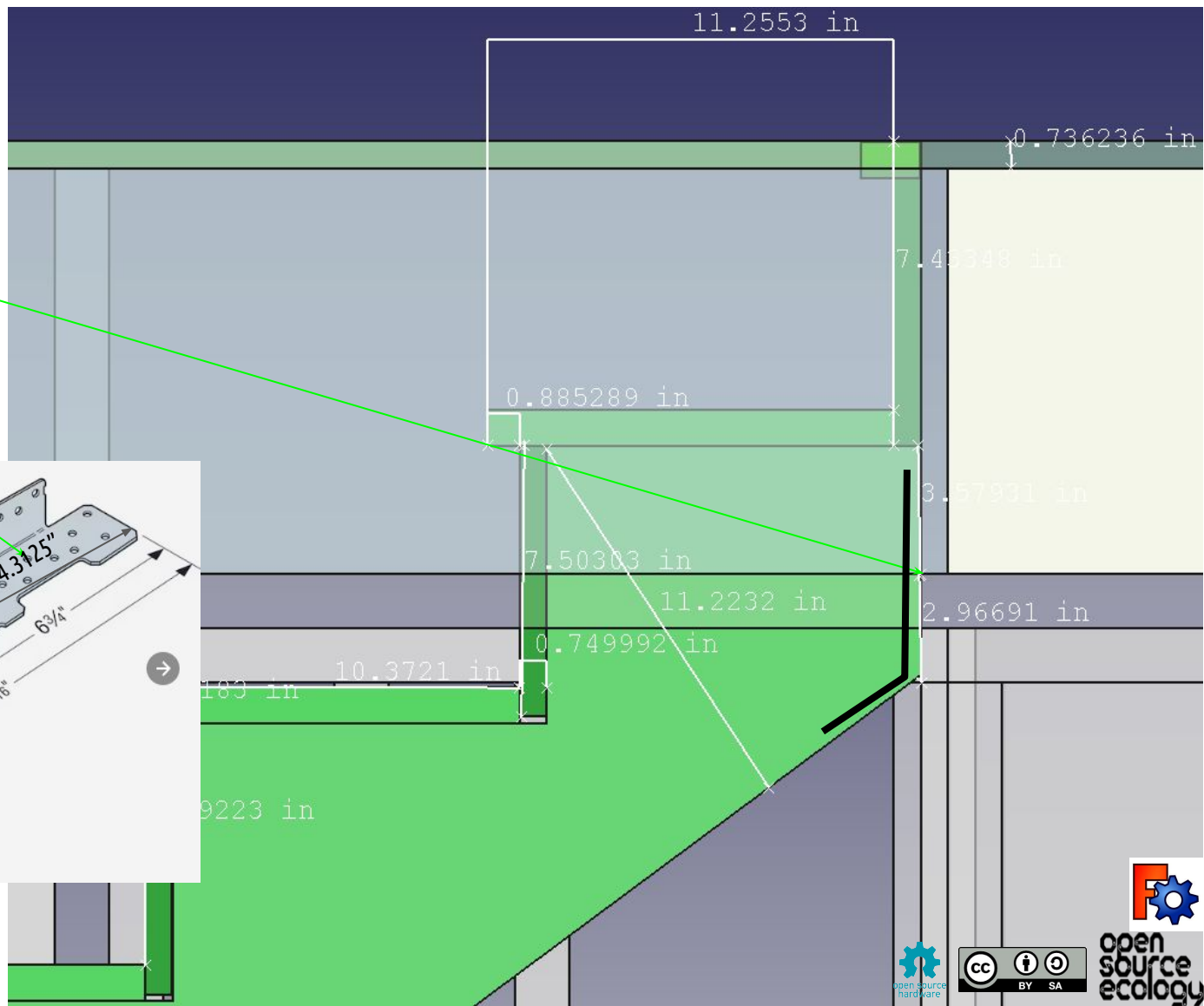
- 7.7" rise
- 14 treads
- Landing is 48"



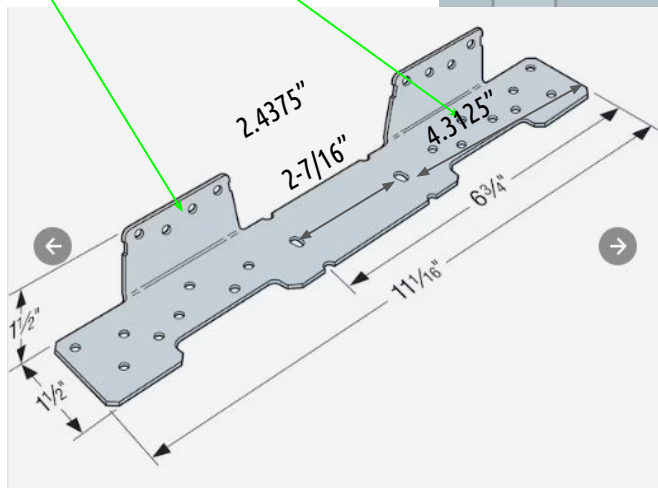
Could be 1x8



Hanger



Installation video calls for 8
nails on flat
and 4 on flange - each side

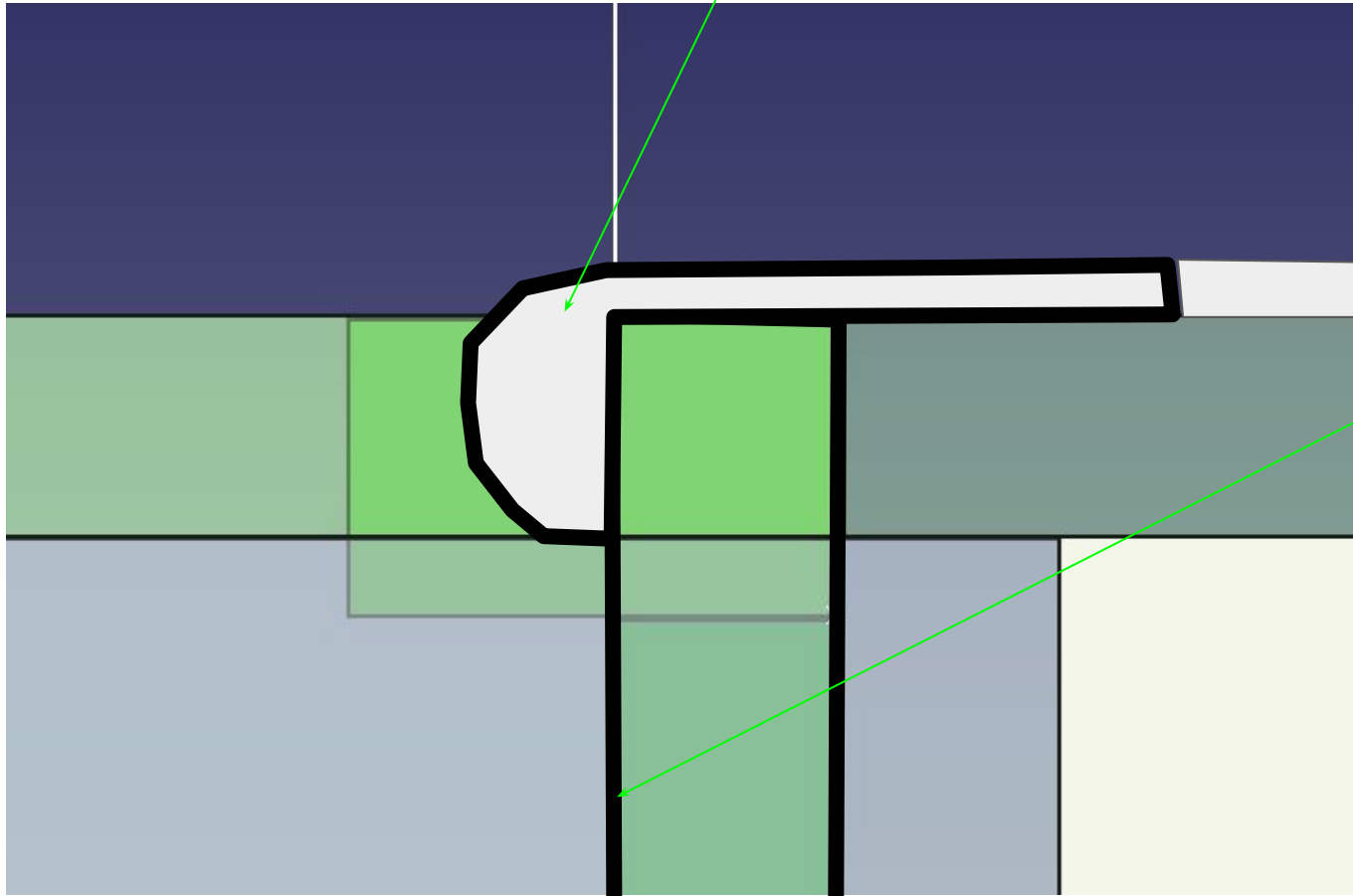


open source
ecology

Top Tread CAD



Finish floor starts even with top nosing height

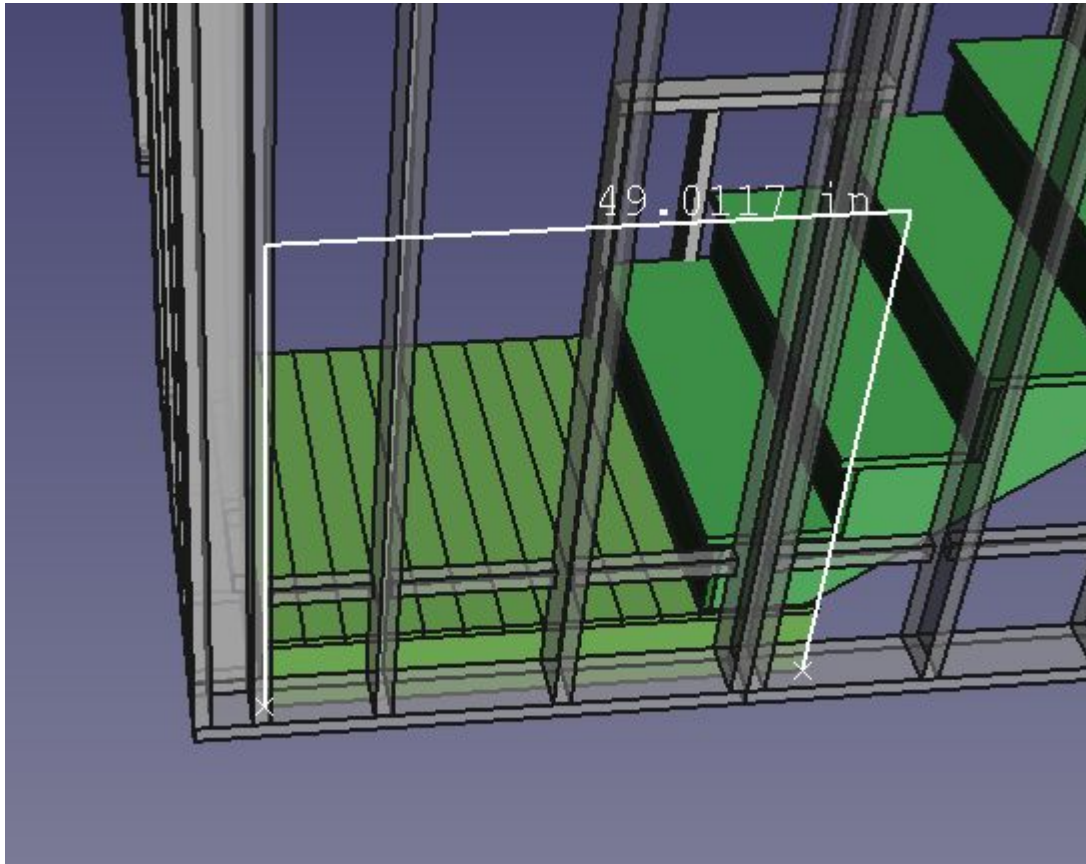


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Correct Landing to 48" Long

CAD



Channel Behind Landing

CAD

