3D Printing Building Framing

Design and Finishing Ideas and Methods

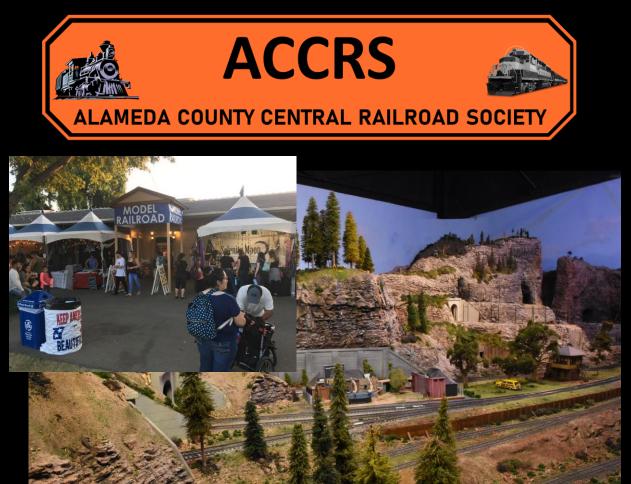


Phil Edholm

July 2021















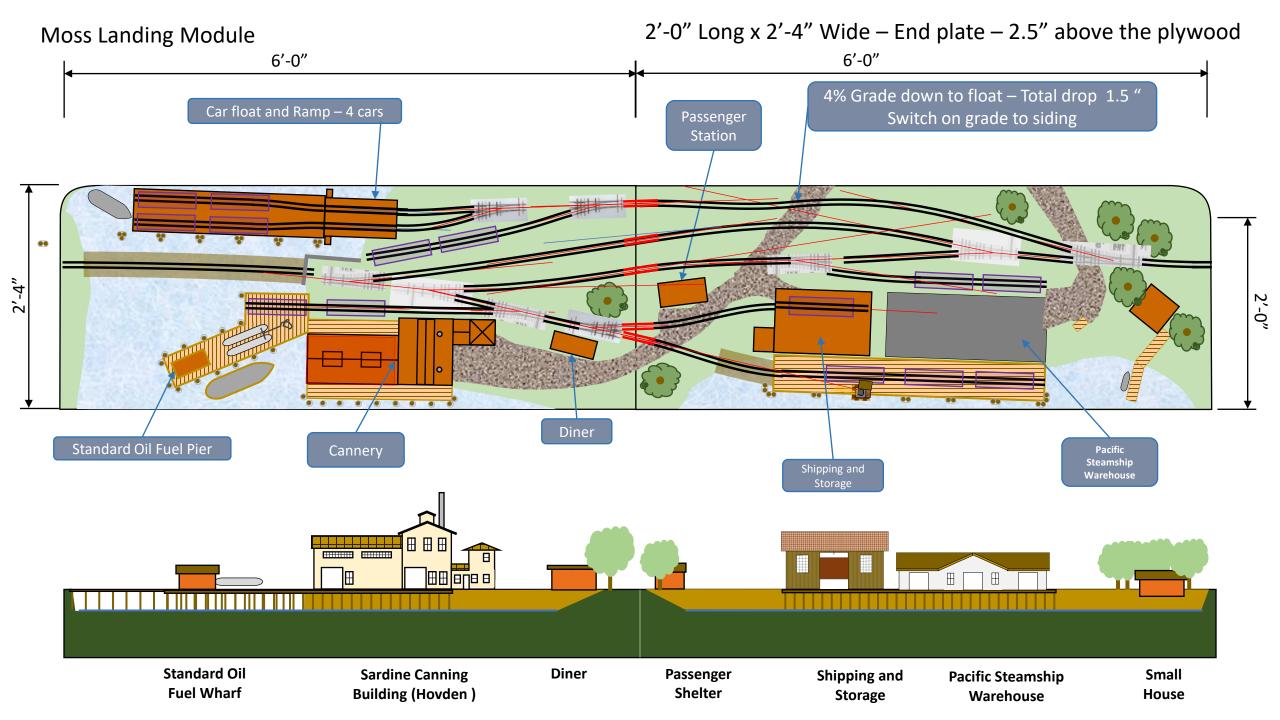
Phil Edholm

A new On30 Module – Moss Landing



- Club Needs
 - Need for modules after some member challenges
 - Operational Module
 - New scenes
- My Reasons
 - Wanted to do a harbor scene (vision of Smugglers Cove)
 - Wanted at least one "ship" (within the limitations of O scale and a module)
 - Wanted to include the Frenchman's Model Works Car Float
 - Wanted a large pier and warehouses
 - Home operations 10-12 switching locations realistic operations
- Result
 - Many Designs
 - Reviewed at a regional NMRA event with OpSIG members
 - Engaged the OpSIG through groups.io
 - Major focus to the geography and history
 - Became a freelanced "prototype"

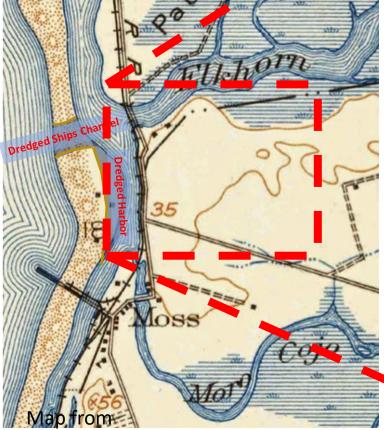
Thanks to Derek R. Whaley and Santa Cruz Trains: Railroads of the Monterey Bay



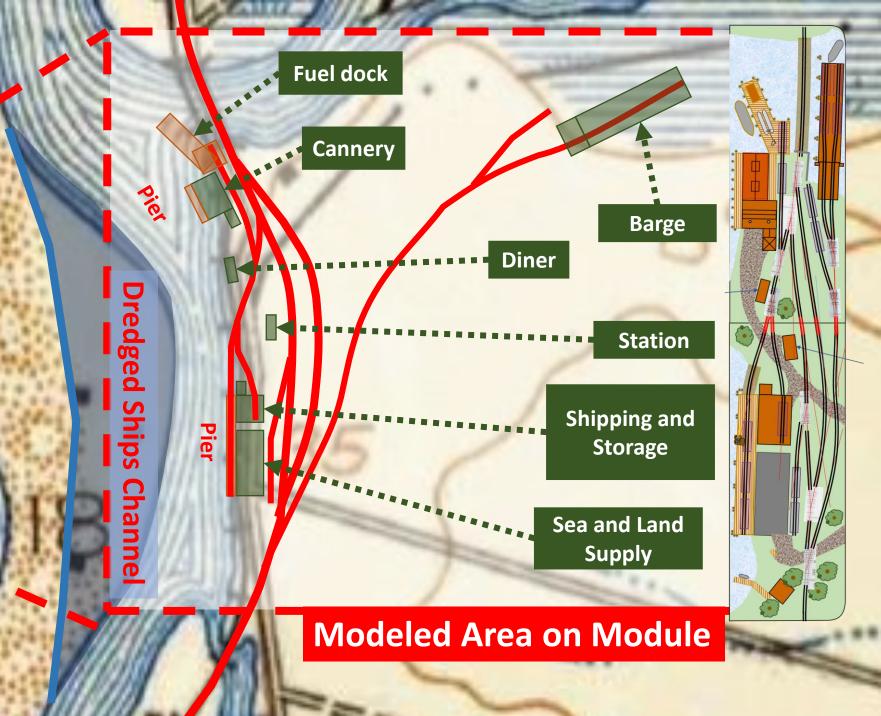
Moss Landing

Reimagined Dredged Harbor

This is the track plan for the 1920s/30s reimagineered ship harbor at Moss Landing and the module track plan laid out on the PVCRR actual track plan and shoreline.



https://www.santacruztrains.com/2015 /04/moss-landing.html











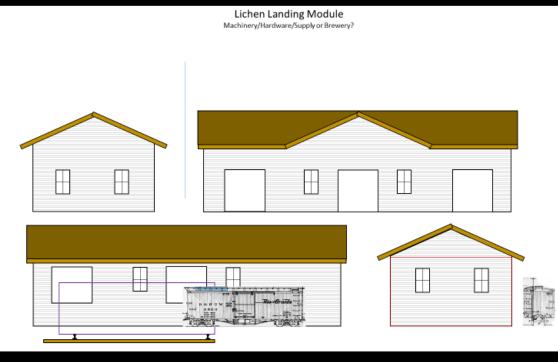


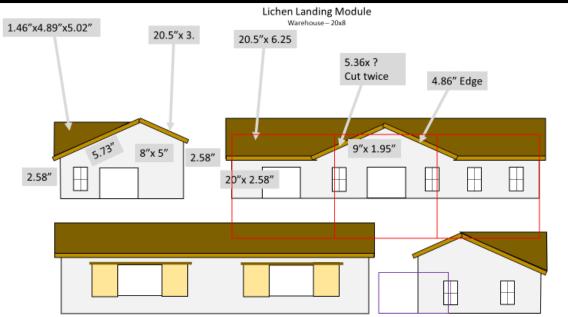


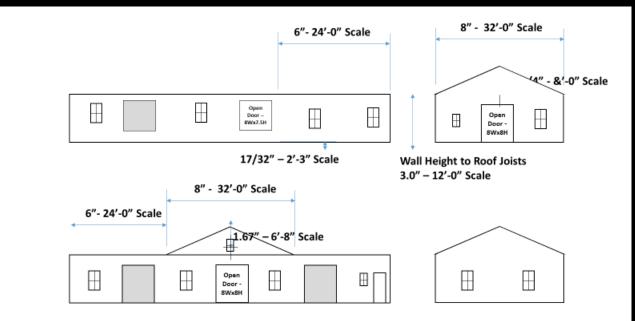


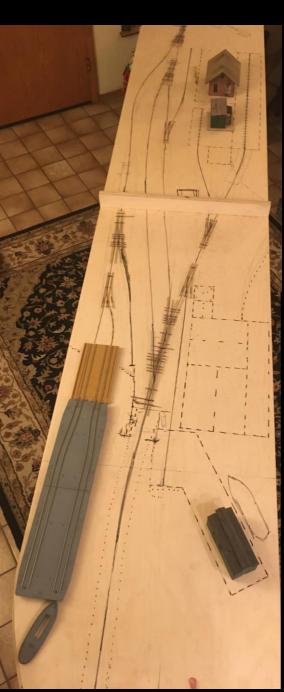
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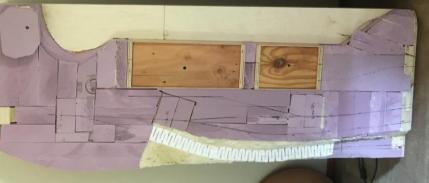






















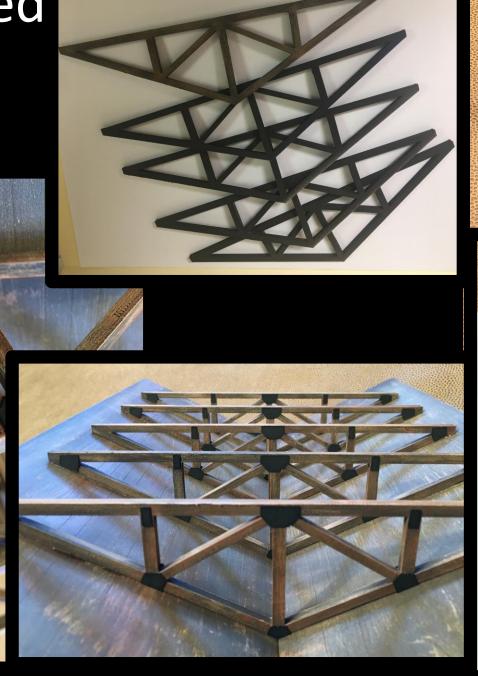






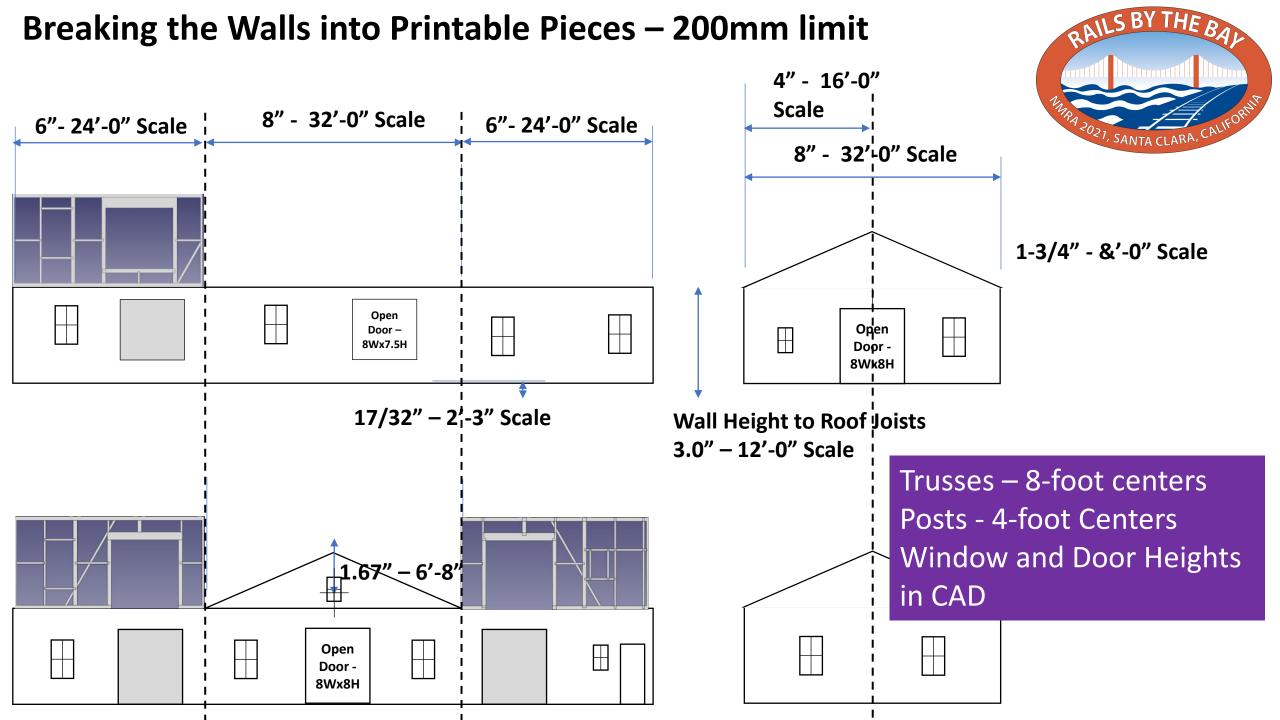


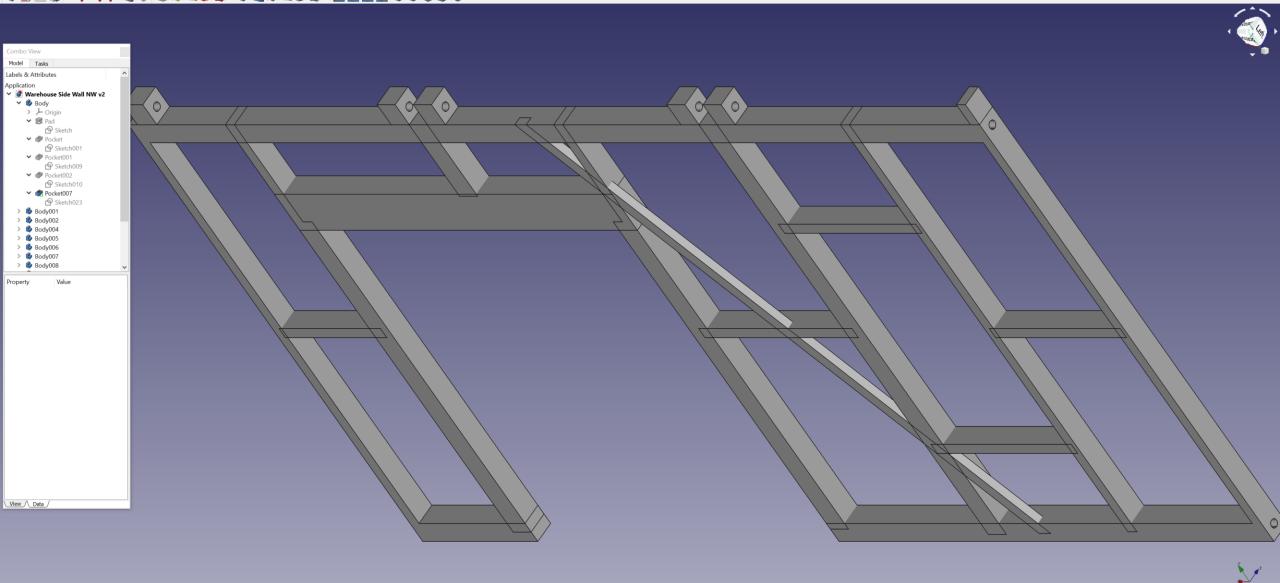
3D Printed Roof Trusses











CE3PRO_Dock Side NW - Ultimaker Cura File Edit View Settings Extensions Preferences Help

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Ultimaker Cura

Sign in

Marketplace

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PREVIEW MONITOR

PREPARE

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Dynamic Quality

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Print settings Profile

Print interior wall down • Better finish – squished lines • Allows space behind braces

C Generic PLA 0.4mm Nozzle

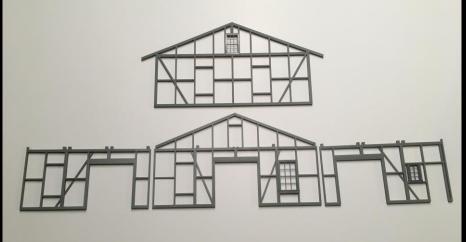
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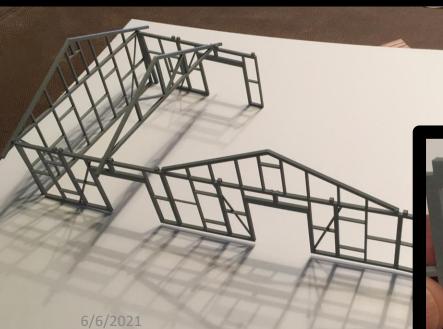
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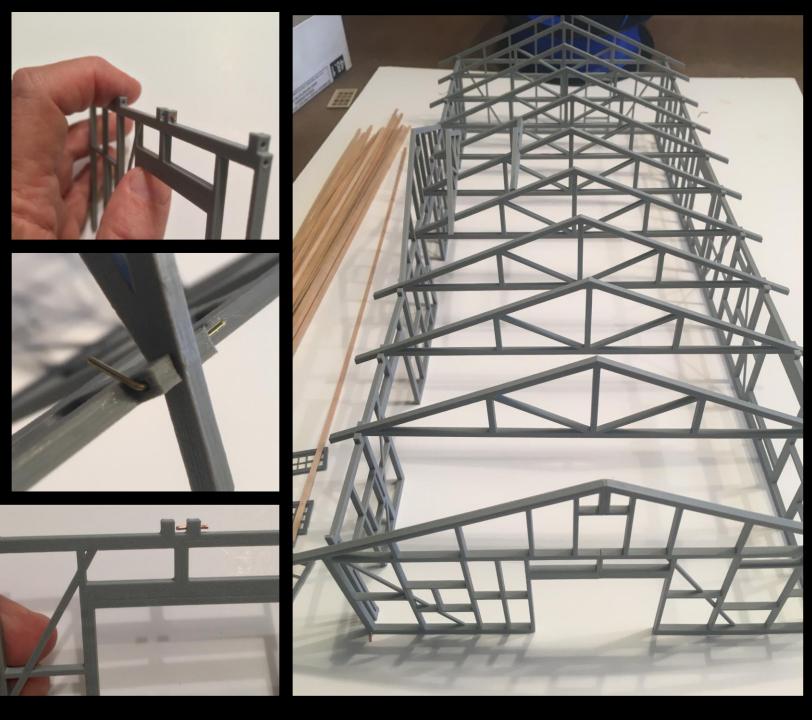
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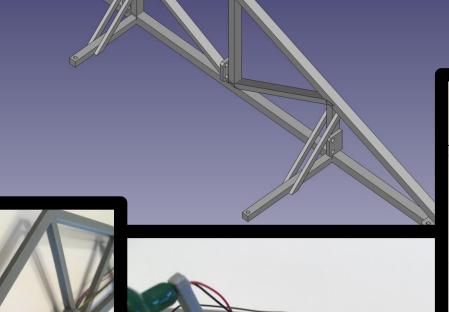
























Texture and Coloring



6/6/2021

Creating Wood Texture - Wood Graining

- Four Coats of Filler Primer on interior surfaces of framing
 - Focus to the visible interior
 - Edge layering is also "graining"
- Use the edge of a jewelers saw to scrape away some of the filler to create "woodgrain" grooves







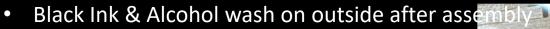
Finishing - Painting

- Wood Siding
 - Scale 1x10
 - Brown and Mahogany with alcohol Shoe Dye both sides – interior color
- Base Coat
 - Spray paint Rustoleum
 - Caramel for Redwood Coloring
- Dry Brush for effect Vallejo and Craft Paints
 - Val Wood color heavier
 - Lighter of Val Mahony and Golden Oak
 - Light overall with Val Light Brown
 - Alternating Brown and Mud Craft
 - Army Painter dry-brush set



Exterior Wall Finishing

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• Dry Brush with Artist tube acrylic

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• Wire brush for effect (small brass and steel)







Installing the Floor





- Epoxy to Board
- Cut at scribes and detail
- Add board ends
- Stain in place
- Nail holes

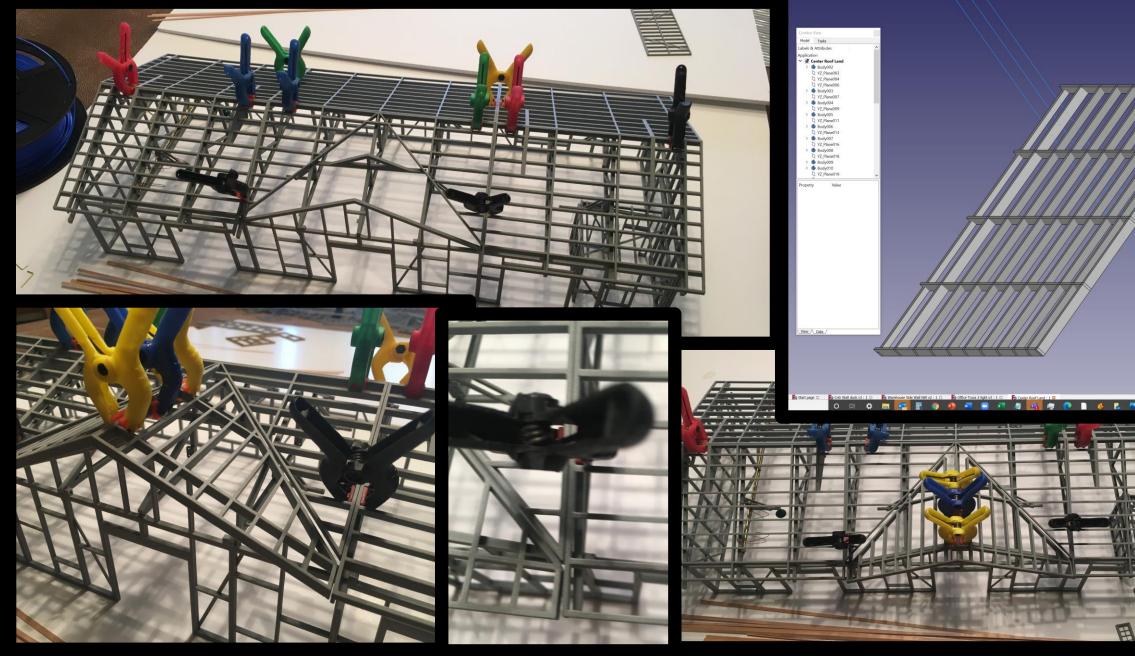


The Roof



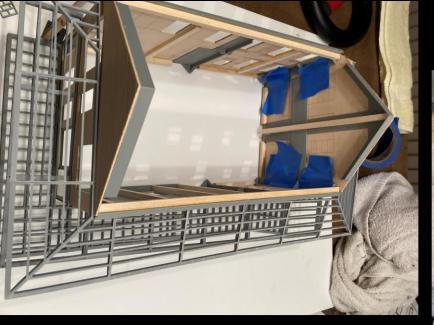
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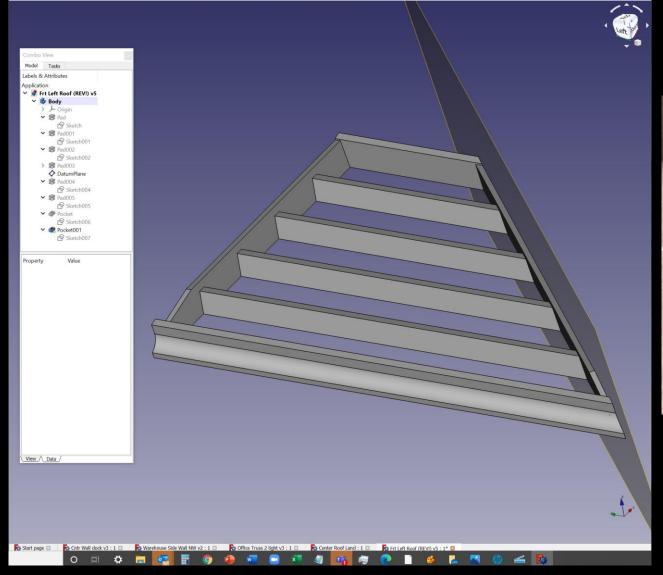








Elle Edit View Iools Macro Part Design Windows Help





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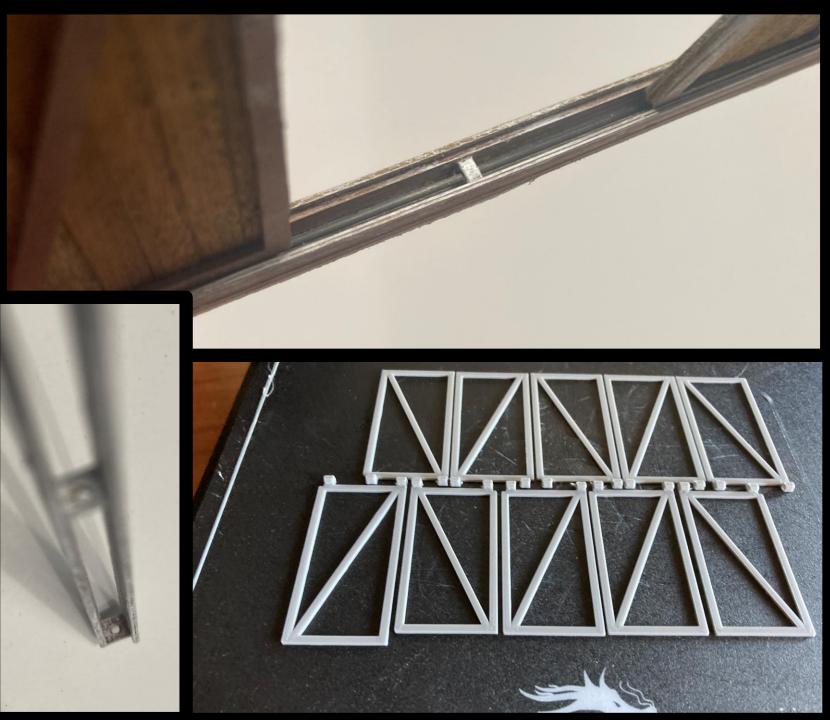
Sliding Doors



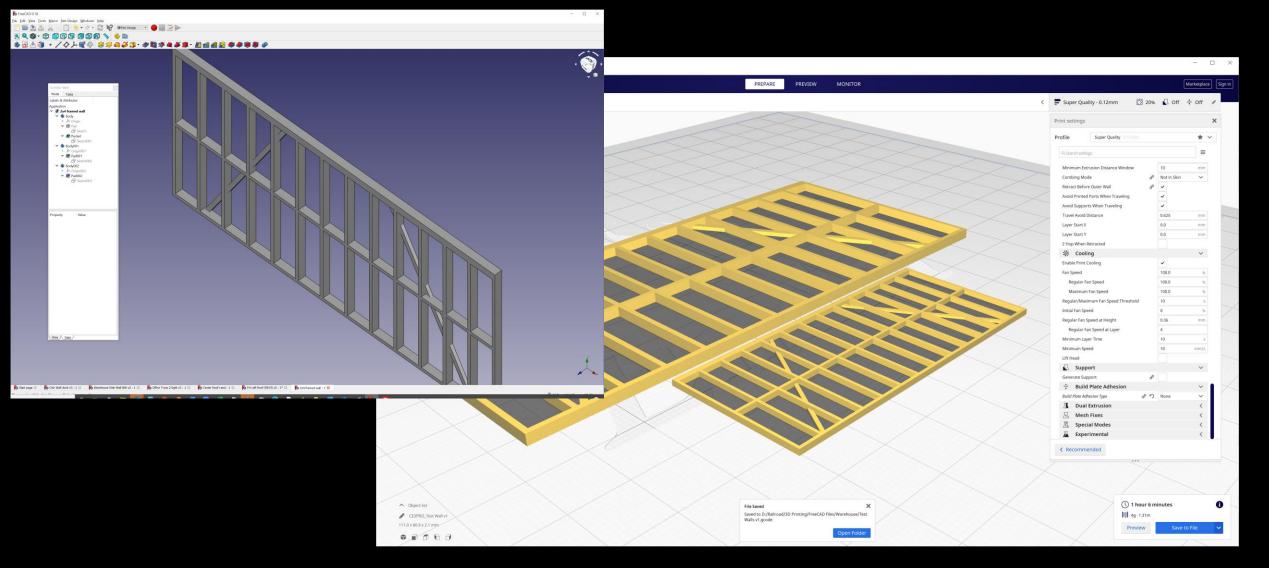
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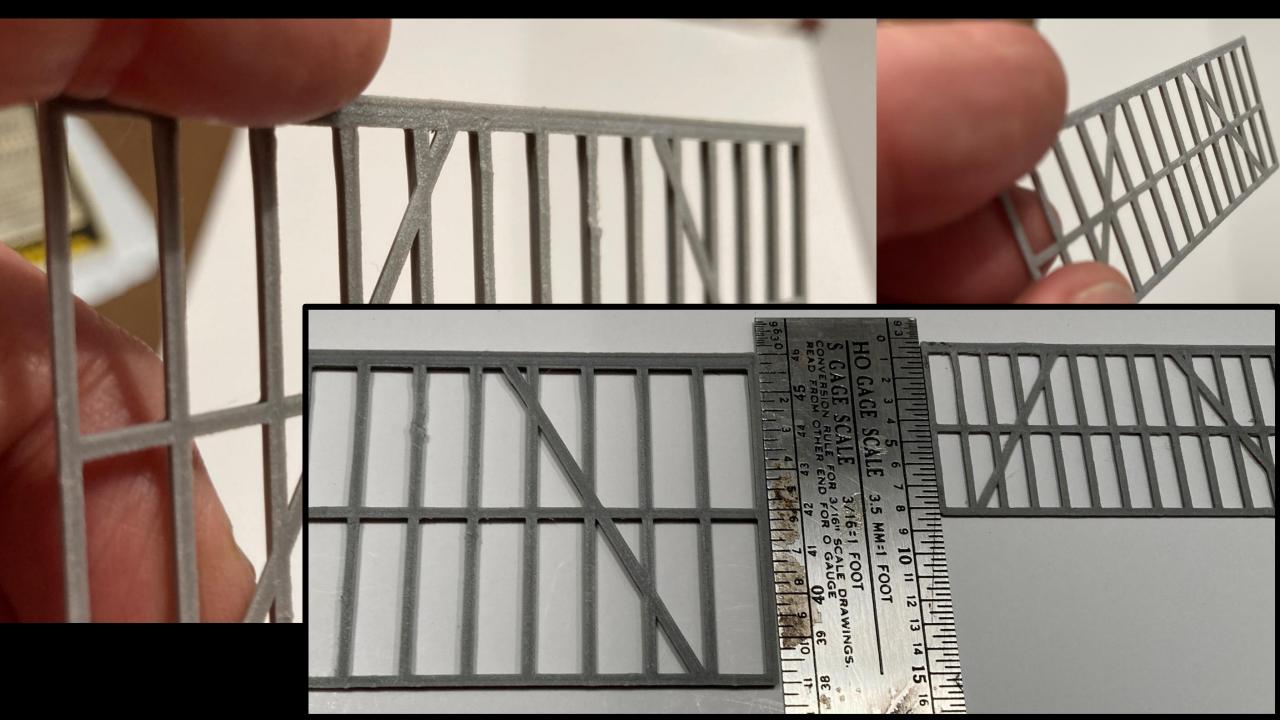






Smaller Wall Sections









Learnings and Regrets

- Printing
 - Make sections smaller than you think
 - Use grey or lighter filament
 - Use dynamic layering not critical
 - Print flat smaller sections down
 - Side grain looks like wood
- Painting
 - The filling primer is most important on visible surfaces
 - Must learn better dry-brushing and to be more patient
 - Semi gloss base did not matter after dry-brushing
- Changes
 - Would re-think the base/floor/mounting
 - Would be more accurate with window dimensions in CAD
 - Would make the roof members smaller (will probably re-print eventually)
 - Would have thought of a better way for the wiring to enable the trusses to be removeable
 - Would print the gussets in 1.0 layer height and would align layers (or resin)









