Create a Gauntlet Track using FastTracks Tools

Fred Soward

What this clinic will cover

- A method of creating a Gauntlet Track (not a Gauntlet Turnout) for your layout that will meet one of the requirements for the "scratchbuilt" requirement for the "Model Railroad Engineer – Civil" certificate in the NMRA Achievement Program
- A standard gauge HO scale solution using Code 83 Micro Engineering rail in a #6 Fast Tracks turnout fixture
- It is not the only solution for meeting the requirement
- It is not the only solution for creating a Gauntlet Track
- Just the handlaid track construction
  - Use the provided references for the details and finishing

What this clinic will NOT cover

- A how to guide for detailing & finishing the scale track & structures
- The Meaning of Life
  - It’s 42 – see Arthur Dent for additional details

A bit of background info

- Santa Cruz & Felton Railway switching layout 1978-1981
  - Handlaid HO scale standard & HOn3 code 70
- NMRA National Convention 2016
  - Modeling with the Masters
- Pennsylvania Southern Railroad 2016-present
- Santa Cruz & Felton Railway (second edition) 2018-present

Outline

- Intro
- Tools & Materials
- Gauntlet Track Build Overview
- Gauntlet Track Build “By the Numbers”
- Gauntlet Track Build Next Steps
- A few Fast Tracks Tips & References

What's a Gauntlet Track

- A different route for rail equipment along the same pathway
  - May share a piece of rail, but frequently does not
  - Always share the same track bed (ties & ballast)
- Frog Gauntlet (double-single-double)
  - Two lines collapse/condense their width for a narrow passageway (bridge/tunnel); the narrow width expands back to the "normal" width
- Point Gauntlet/Interlaced Loop (single-gauntlet-single)
  - A single line expands to two close lines; the two lines collapse into a single line
- Single-Gauntlet-Double
- Dual-Gauge Track

“Real World” examples

Gauntlet Track in Tualatin on the Westside Express
A look at the gauntlet track allowing the commuter trains to align with the high-level platform in Tualatin

Aaron Hockley - Flickr

“Real World” examples

Gauntlet track of ION rapid transit line in Waterloo near Seagram's drive.

Karl Morant – Wikipedia Commons

“Real World” examples

Gauntlet at Sonoma County Airport station

Waggie – Wikipedia Commons

“Real World” examples

Scale Track at
Strawberry Yard,
Louisville, KY

Photo by
Charles Buccola
August 9, 1969

“Real World” examples

Mixed gauge test track
for 1000, 1435 and 1524 mm gauge in
Škoda Plzeň, Czech Republic

PetrS, Wikipedia Commons

Why build one for your model railroad?

- Scale track
  - Additional work for a crew
  - Allows locomotive to stay off the scale itself
- Can be used to satisfy one of the three MMR Civil Engineer handlaid track requirements
- It’s a lot easier (and quicker) to build than a slip switch/crossing
- You want the quality that only comes by building it yourself
- You enjoy scratch building trackwork

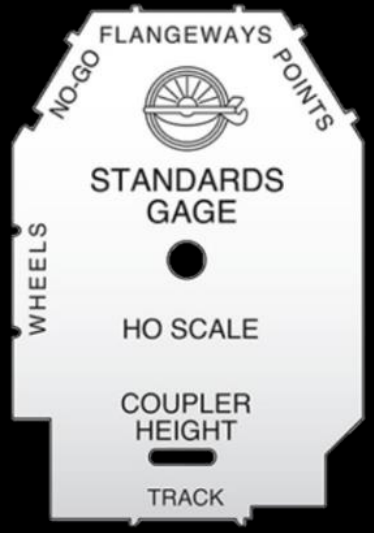
Gauntlet Track building options

- Fast Tracks tools
- Handlaid from scratch without Fast Tracks tools
- There are competitors (Oak Hill for one)
- Use less Fast Tracks components than what I'm recommending/showing/demonstrating
- Simulate it with flex-track and glued-down rails
- "I know a guy. . ."

Fast Tracks Tools 101

Other Gauntlet Building Tools

- Soldering iron
- Rail Cutters (Xuron/Fast Tracks)
- 10” Bastard/Mill file
- Needle/Triangle file
- NMRA Standards gage

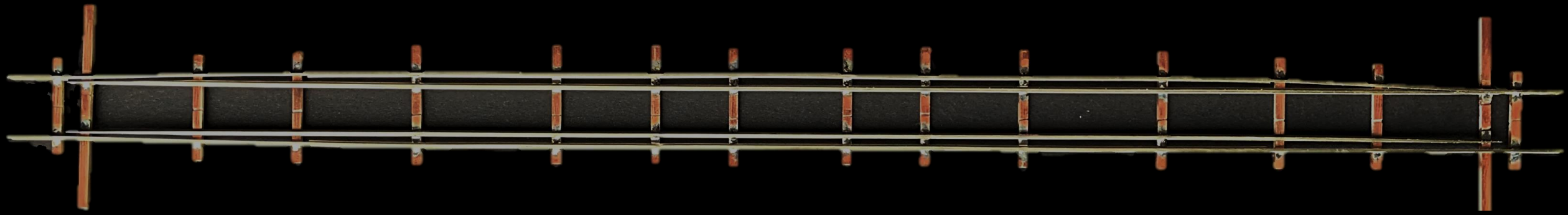


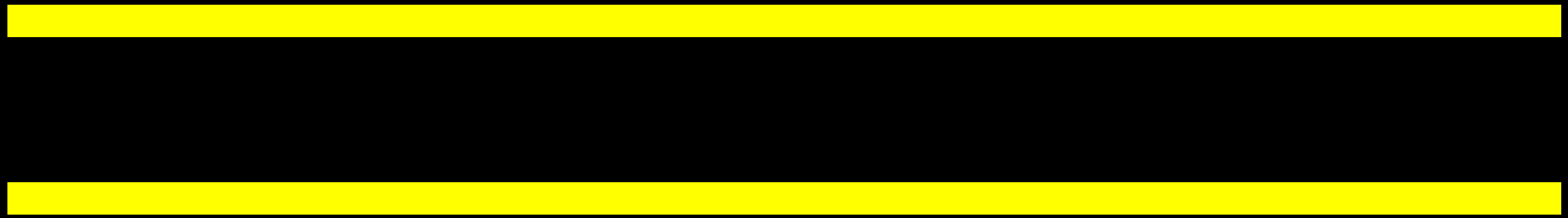
- Bendable files/sanding sticks for getting things “just right”
- Sharpies (fine tip & thick)
- Multimeter (to check for LACK of continuity)
- Three point track gauge (optional)

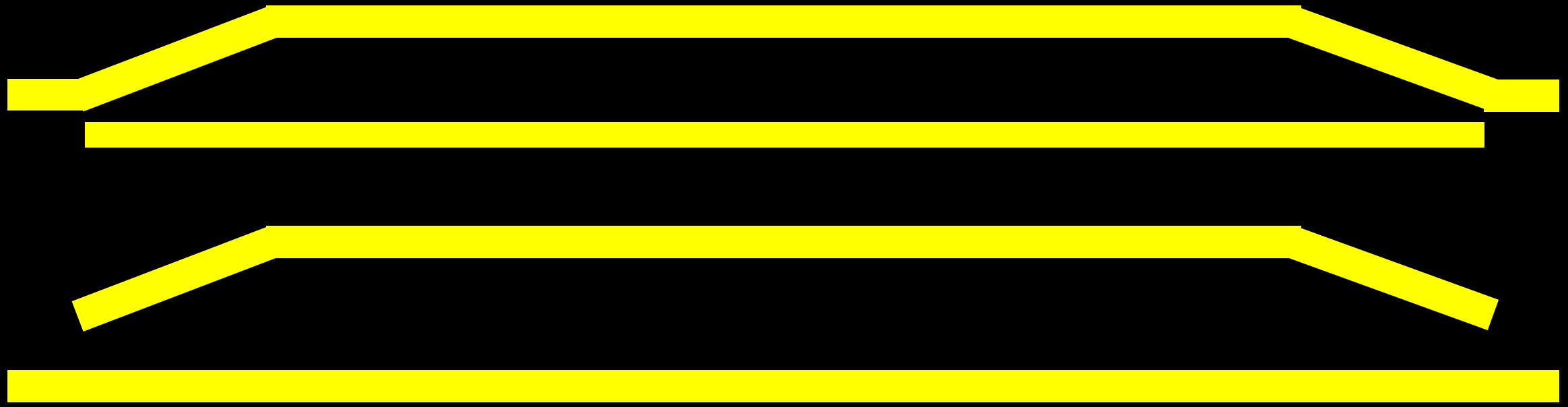
Gauntlet Building Supplies

- Micro Engineering rail (code 83 for this clinic)
- PC Board ties
- Solder & Flux
- Wood ties
- Plastic/Wood/Something to represent the scale
- Hut/house/shed to represent a place for the workers running the scale
- Pliobond contact cement

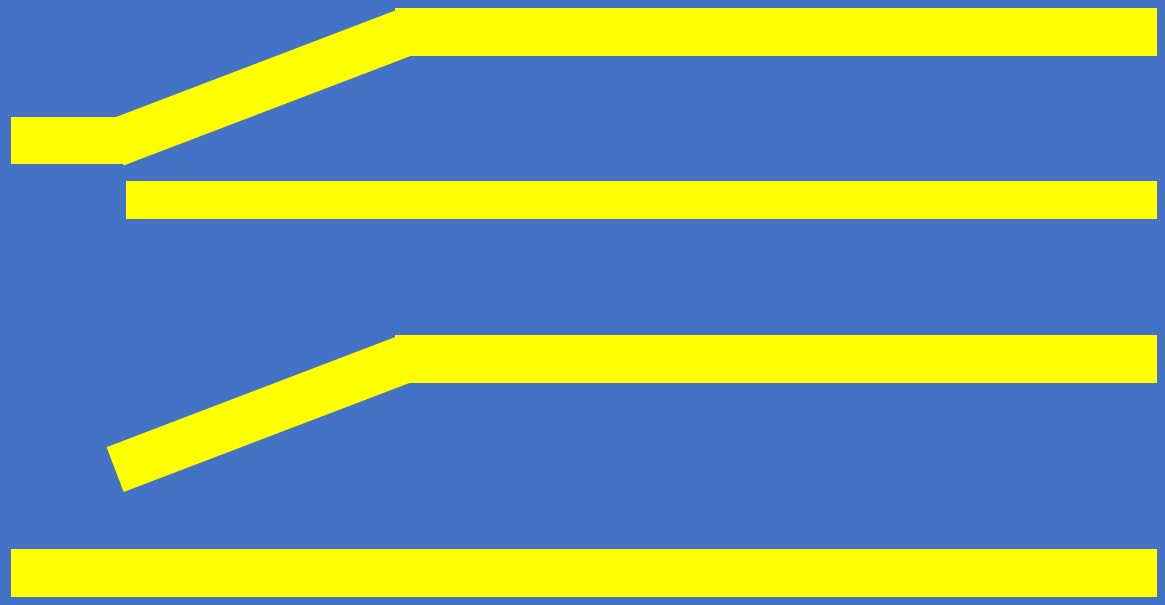
This is what we’re building







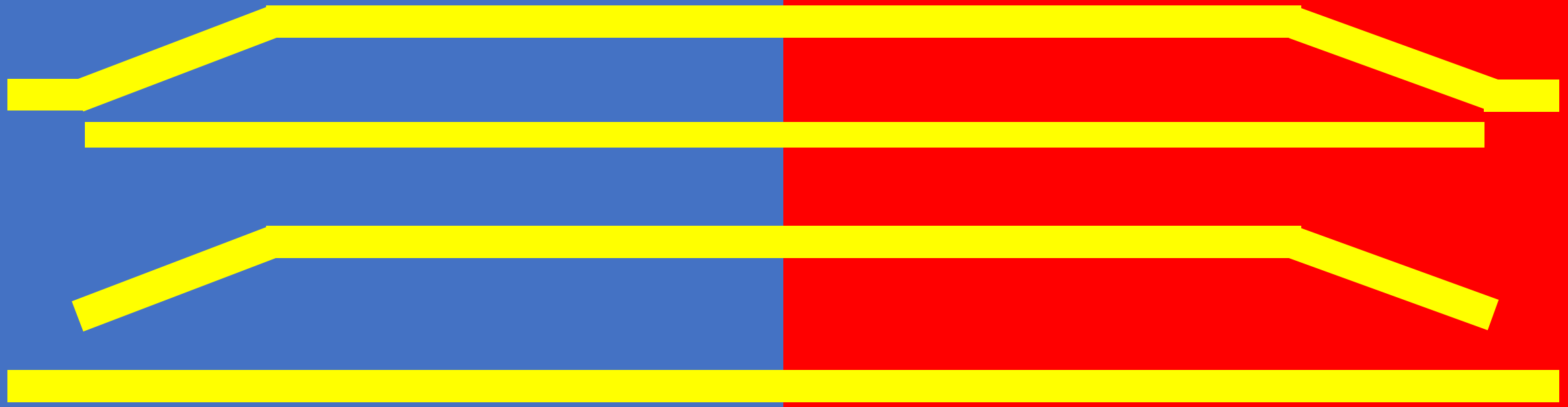
Left Hand Turnout

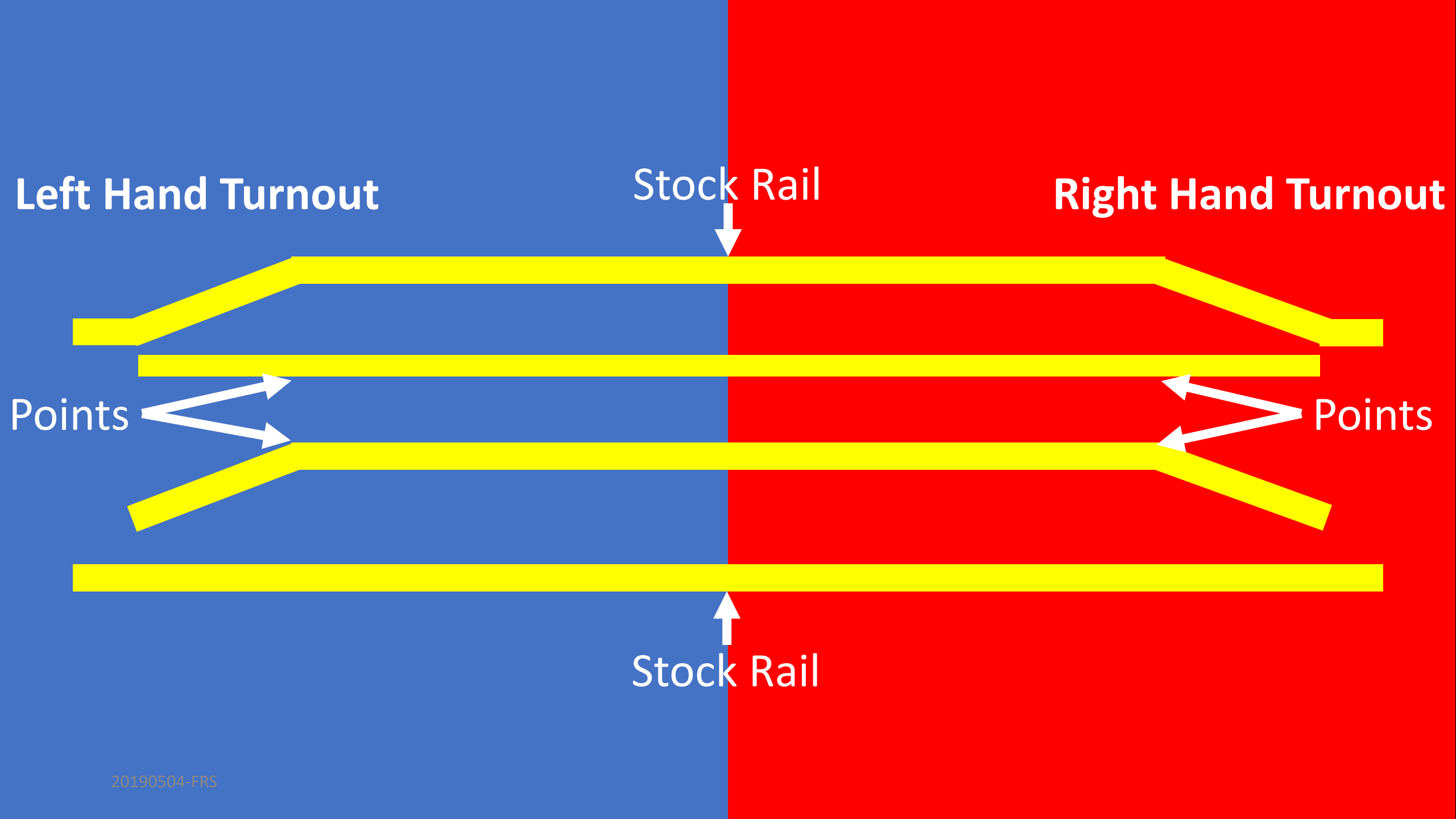


Right Hand Turnout

Left Hand Turnout

Right Hand Turnout




Left Hand Turnout
Stock Rail
Right Hand Turnout
Points
Points
Stock Rail

Determine the required length of the scale

- It’s all about your layout:
  - Expected rolling stock to be weighed
  - Era
  - Location
    - Where on the layout
    - How much room you want or have available to allocate

Santa Cruz & Felton Railway

- Rolling stock to be weighed
  - Refrigerator cars
  - Covered cement hoppers
  - Covered & open sand hoppers

Santa Cruz & Felton Railway

- Rolling stock to be weighed
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  - Covered & open sand hoppers
- Era
  - November 1981

Santa Cruz & Felton Railway

- Rolling stock to be weighed
  - Refrigerator cars
  - Covered cement hoppers
  - Covered & open sand hoppers
- Era
  - November 1981

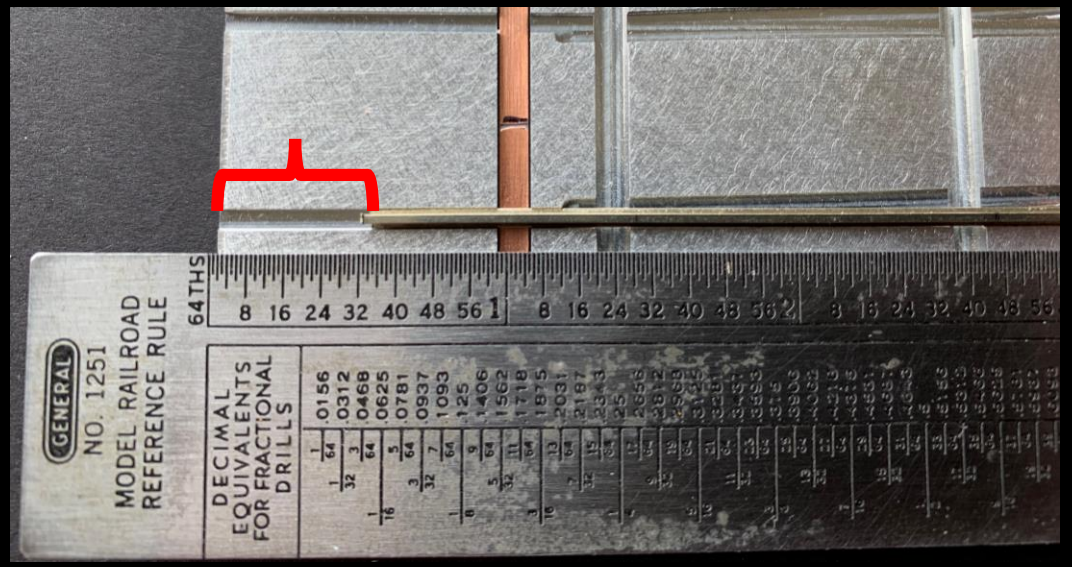
- Three possible locations
  - Cement plant
  - Sand pit/quarry
  - Shared Yard/
    Interchange with the Southern Pacific

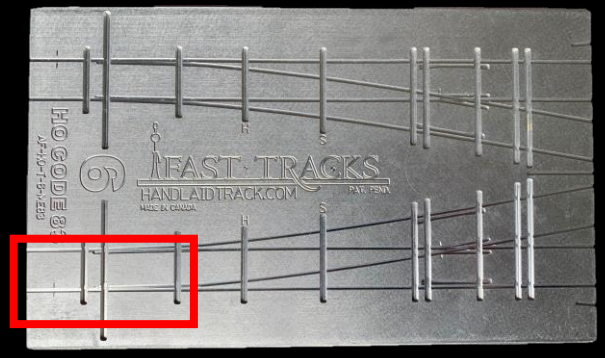
Using 4 – 18” Pieces of Micro Engineering Rail

- 18 inches = 130 HO scale feet

Using 4 – 18” Pieces of Micro Engineering Rail

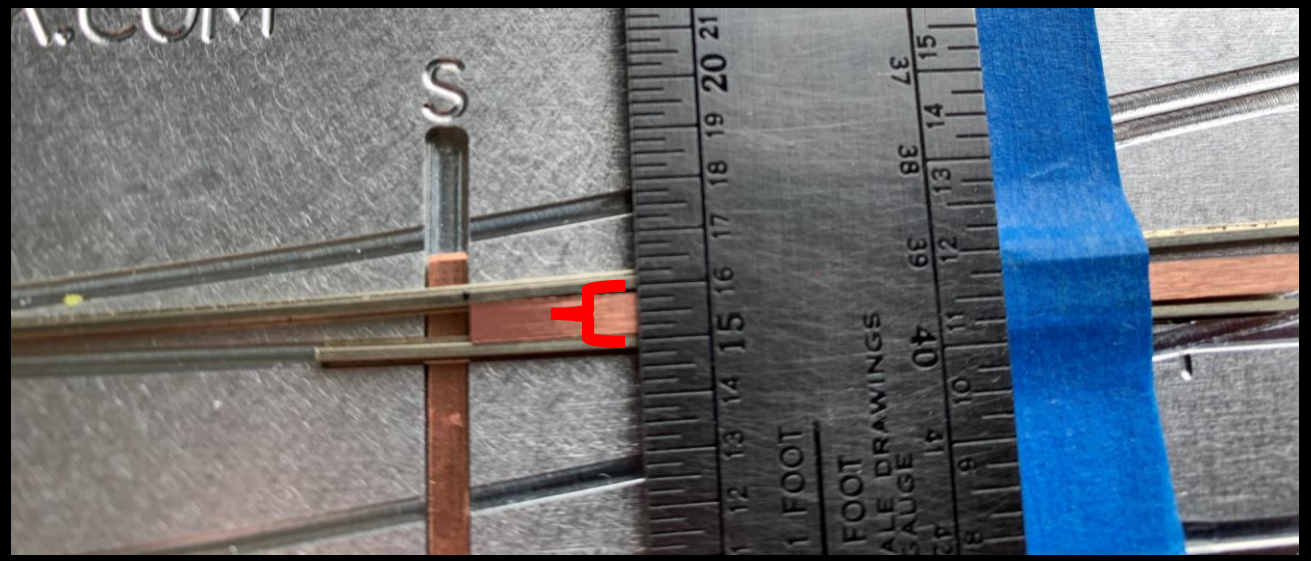
- 18 inches = 130 HO scale feet
- Pull the stock rail ½ inch back from the edge of the FastTracks fixture
  - Allows an additional 7.25 HO scale feet of straight/parallel track

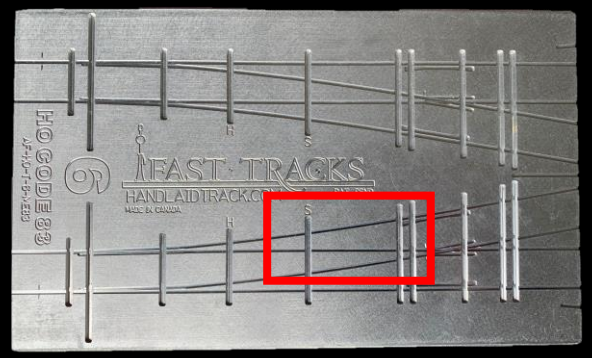




Using 4 – 18” Pieces of Micro Engineering Rail

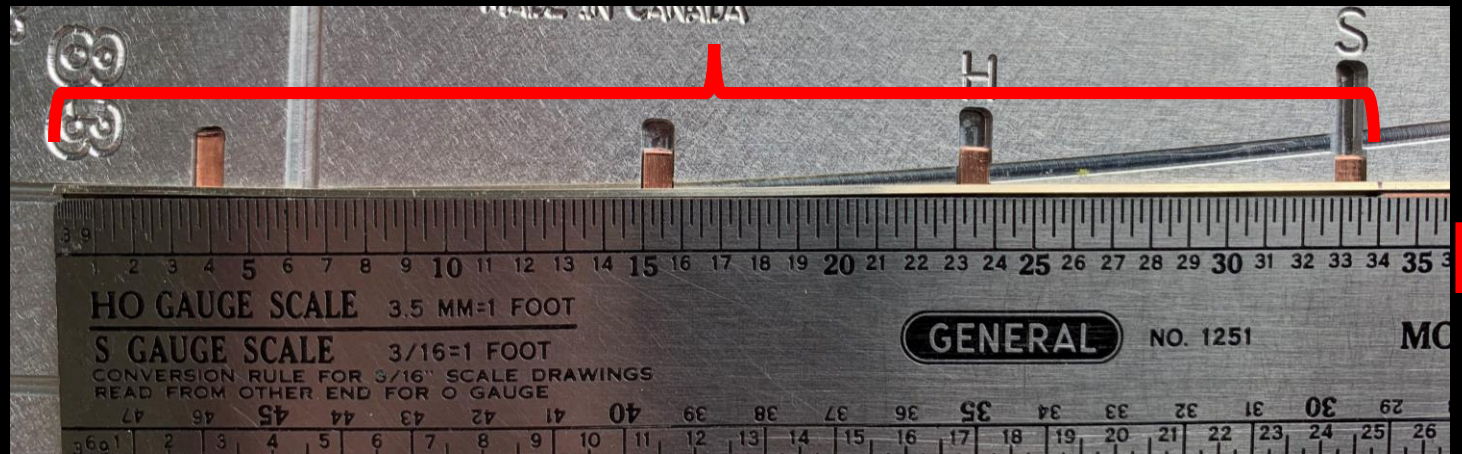
- 18 inches = 130 HO scale feet
- Pull the stock rail ½ inch back from the edge of the FastTracks fixture
  - Allows an additional 7.25 HO scale feet of straight/parallel track
- Keep the distance between straight/parallel rails at 1 HO scale foot

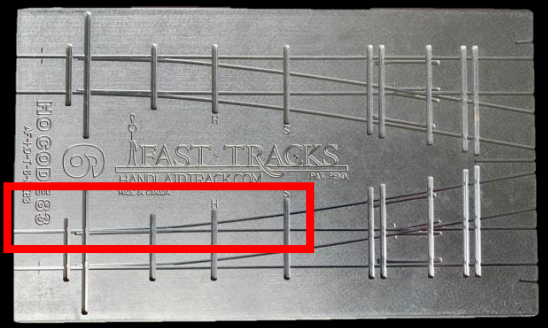




Using 4 – 18” Pieces of Micro Engineering Rail

- 18 inches = 130 HO scale feet
- Pull the stock rail ½ inch back from the edge of the FastTracks fixture
  - Allows an additional 7.25 HO scale feet of straight/parallel track
- Keep the distance between straight/parallel rails at 1 HO scale foot
- The bend on the second stock rail & second point rail will be complete at 34 HO scale feet from each end of the Gauntlet Track

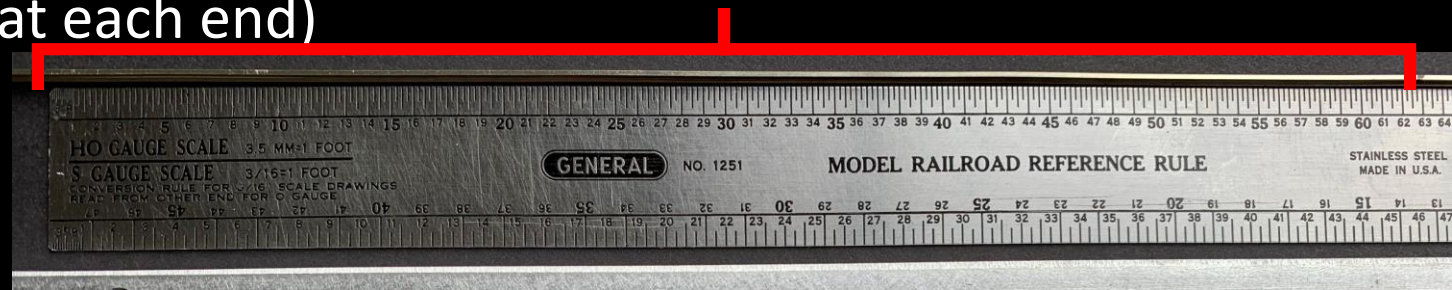




Using 4 – 18” Pieces of Micro Engineering Rail

- 18 inches = 130 HO scale feet
- Pull the stock rail ½ inch back from the edge of the FastTracks fixture
  - Allows an additional 7.25 HO scale feet of straight/parallel track
- Keep the distance between straight/parallel rails at 1 HO scale foot
- The bend on the second stock rail & second will be complete at 34 HO scale feet from each end of the Gauntlet Track
- The remaining straight/parallel track section is 62 HO scale feet

  (130 total length minus 34 feet at each end)

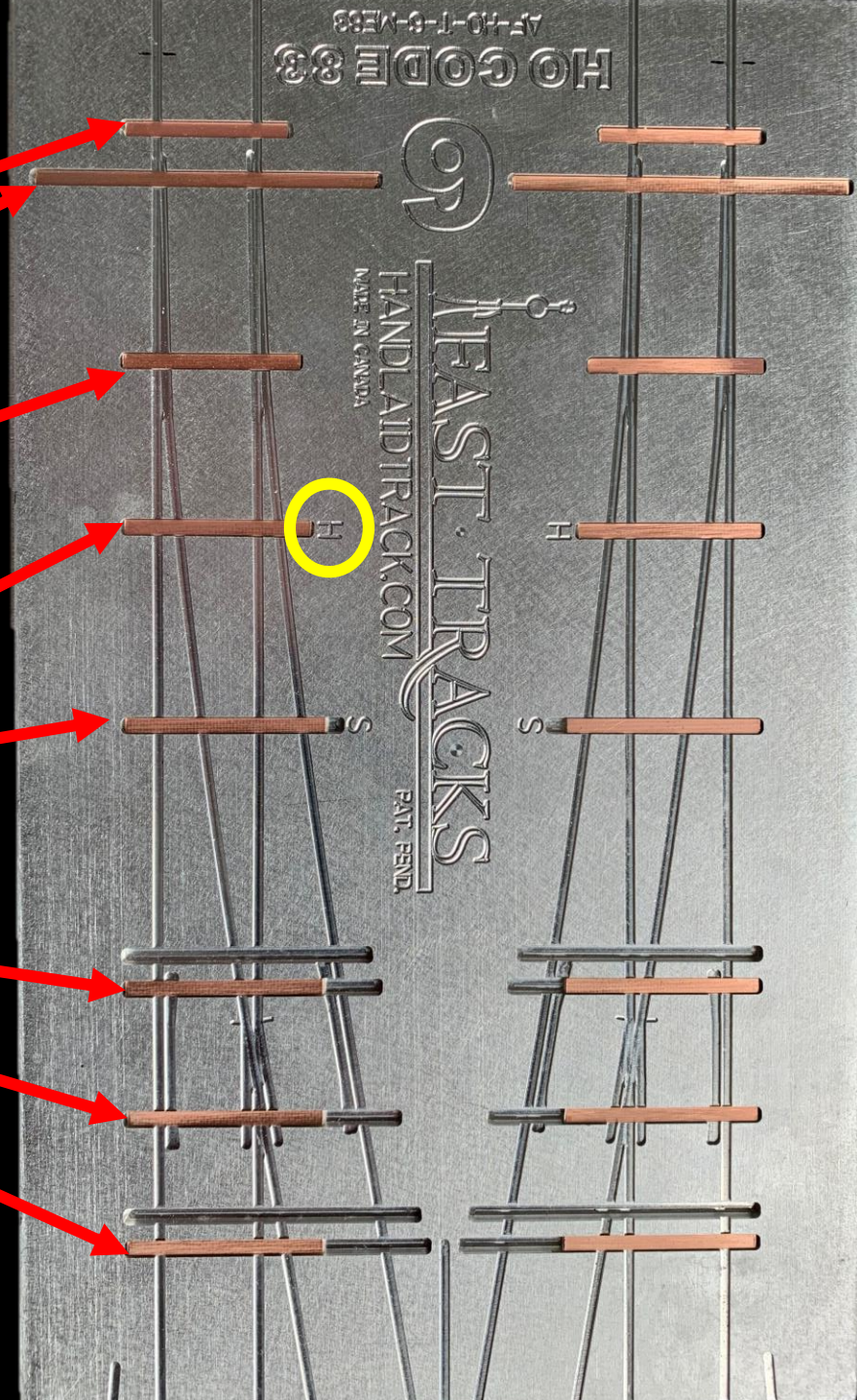


Prepare PC Board Ties

- 2 – Standard first ties (8 ½ HO scale feet) cut to fit fixture
- 2 – Standard throw bars (17 ½ HO scale feet) cut to fit fixture
- 2 – Standard second ties (9 HO scale feet) cut to fit fixture
- 2 – Standard third (hinged spot) ties (9 ½ HO scale feet) cut to fit fixture
- 8 – Gauntlet Track ties (10 HO scale feet); S tie then every other tie to end
  - 8 ½ HO scale feet plus ½ foot width of rail foot plus Gauntlet gap of 1 foot

Prepare PC Board Ties

- 2 – Standard first ties
- 2 – Standard throw bars
- 2 – Standard second ties
- 2 – Standard third (hinged spot) ties
- 8 – Gauntlet Track ties



Prepare PC Board Ties

- Gap the throwbar tie 1 scale foot inside both rails
- Gap all other ties in the middle of the tie
- Gap the top and the bottom
- Lightly sand/file the top and bottom of every tie
- Check for lack of continuity across the gaps – Top and Bottom

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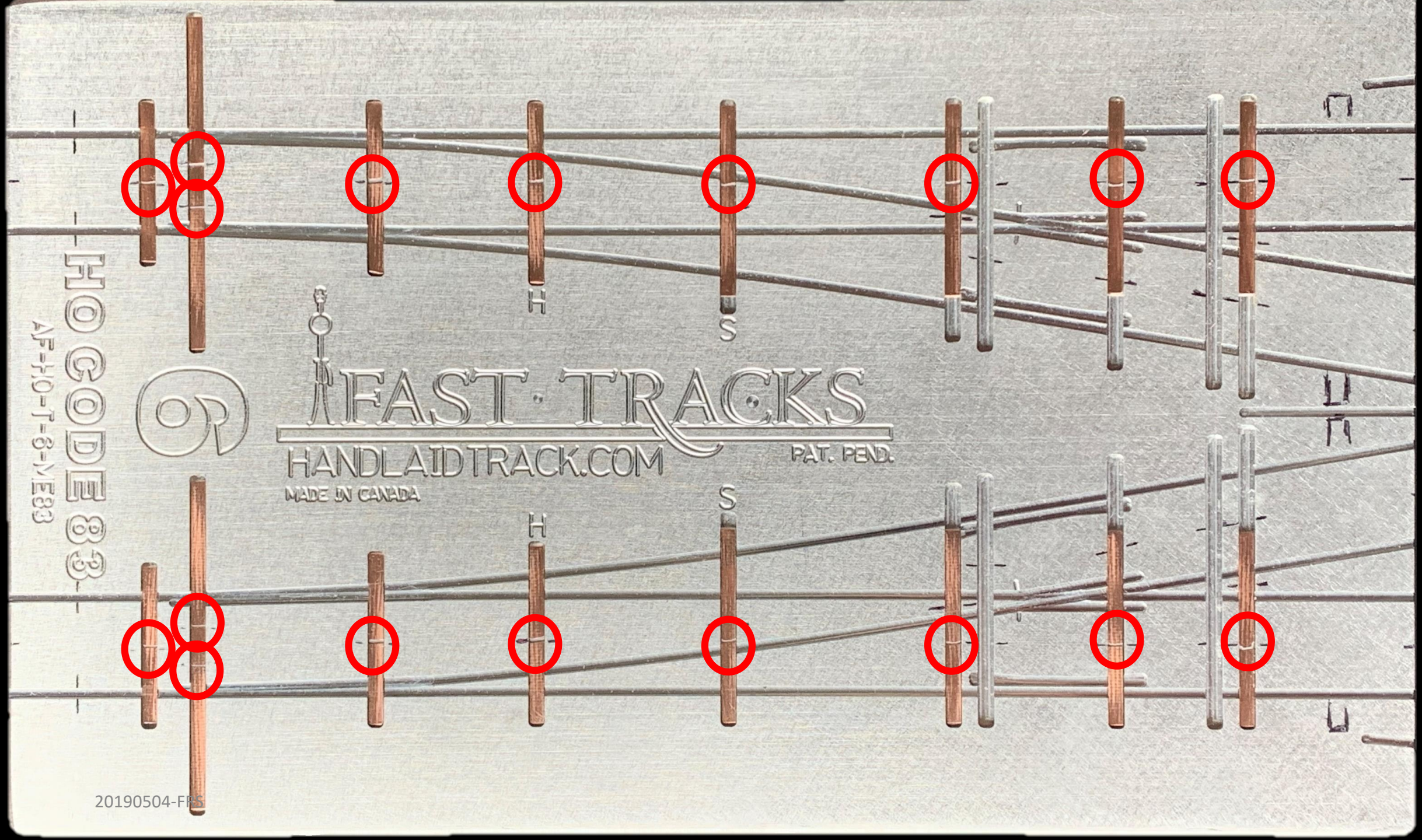
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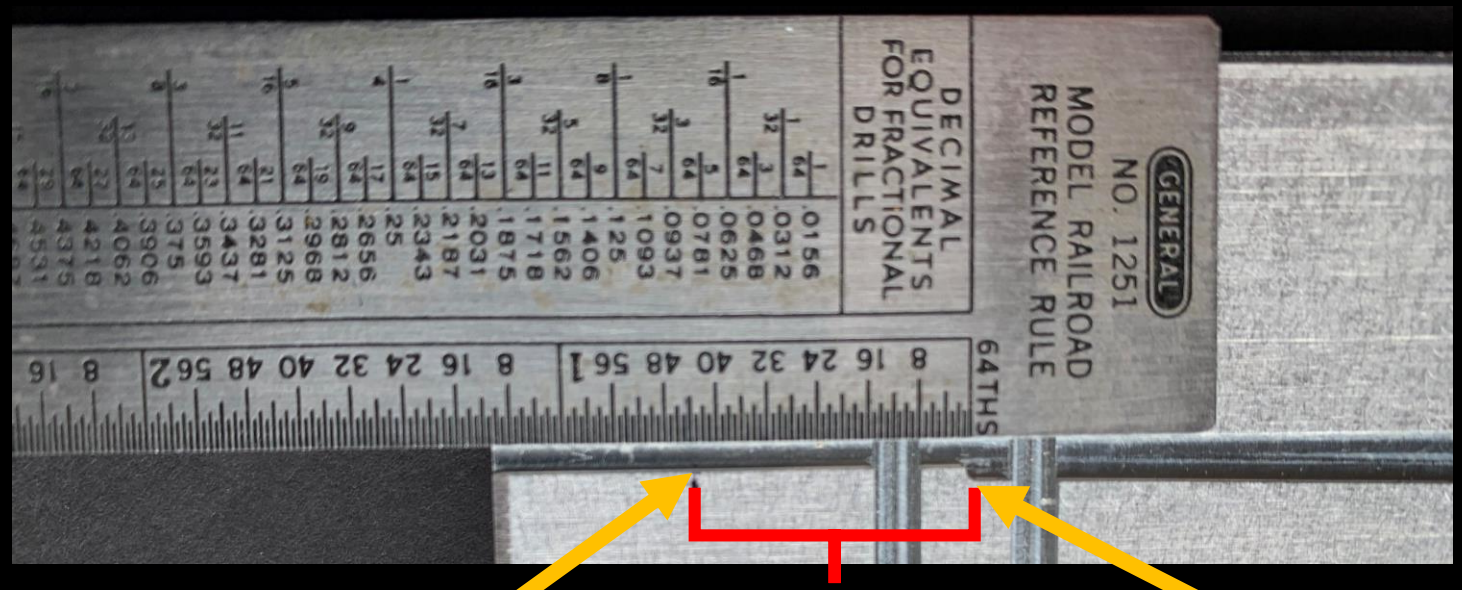
Prepare Stock Rails & Point Rails

Prepare 4 – 18” Pieces of Micro Engineering Rail

- 2 – 18” stock rails
- 2 – 16 5/8” (18” minus 44/64” on each end) point rails
  - 44/64 * 2 = 88/64 = 1 24/64 = 1 3/8 // 18 – 1 3/8 = 16 5/8



Stock rail begins

Point rail begins

Prepare Stock Rails

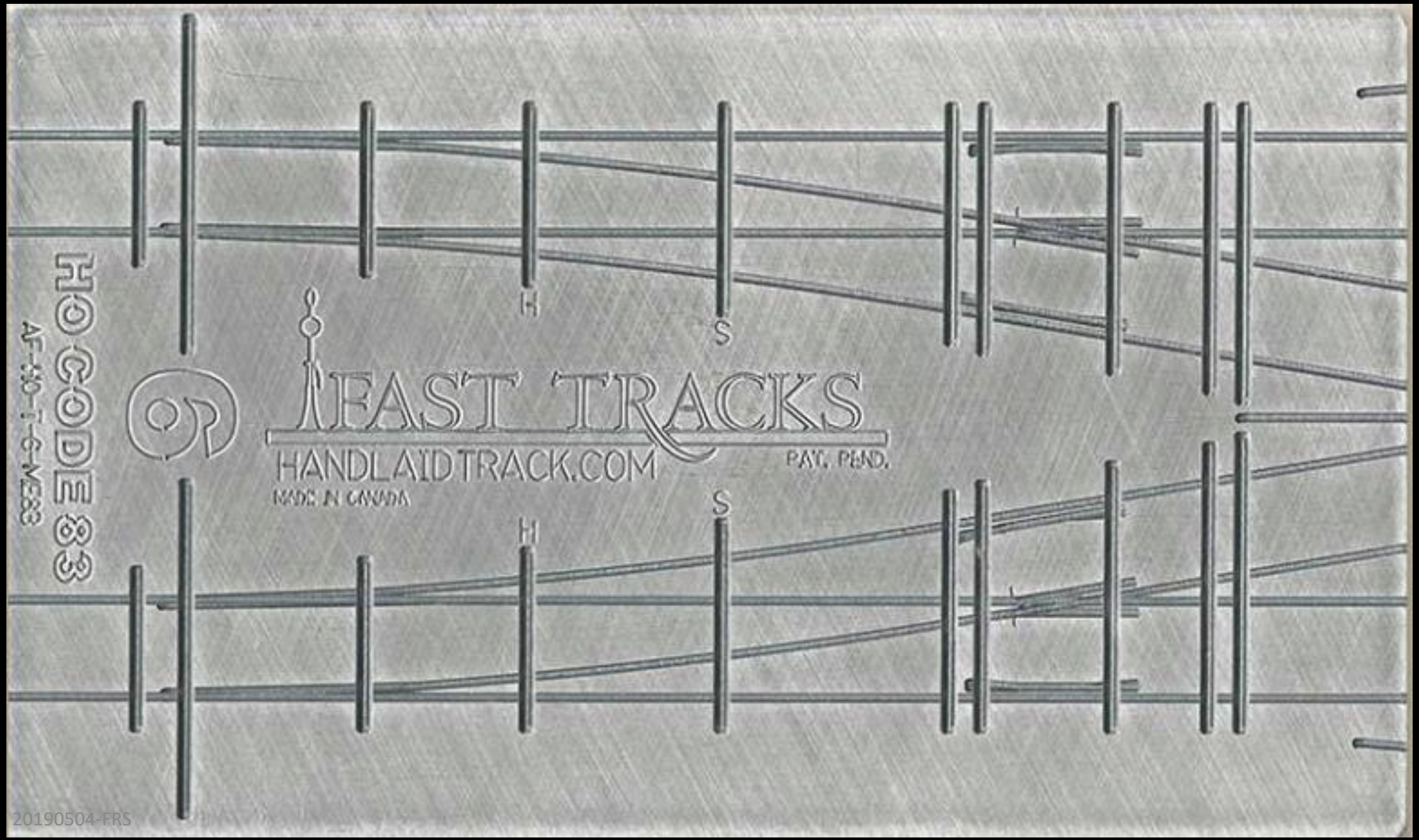
- Lighty sand/file bottom of rails to remove “gunk”
- Mark the start of the filing area on top of the rail
- Mark the web of the filing area
- Use a vise and a good quality file
- Clean up the filing area
- Lightly file/sand ends for rail joiners

Prepare Point Rails

- Lightly sand/file bottom of rails to remove “gunk”
- Mark the web of the filing area
- Use a vise and a good quality file
- Clean up the filing area
- Lightly file/sand point heads at a compound chamfer to fit snugly into the filed areas on the stock rails
- Lightly file/sand front of point feet to be slightly rounded

Soldering

- Keep it clean
- Use flux recommended by Fast Tracks
- Use solder recommended by Fast Tracks
- Use the Stock Rail Aid and the Pointform Tool as weights to hold the rail while you're soldering
- Check and double-check with an NMRA track standards gauge
- **Don't be afraid to UNDO and re-solder**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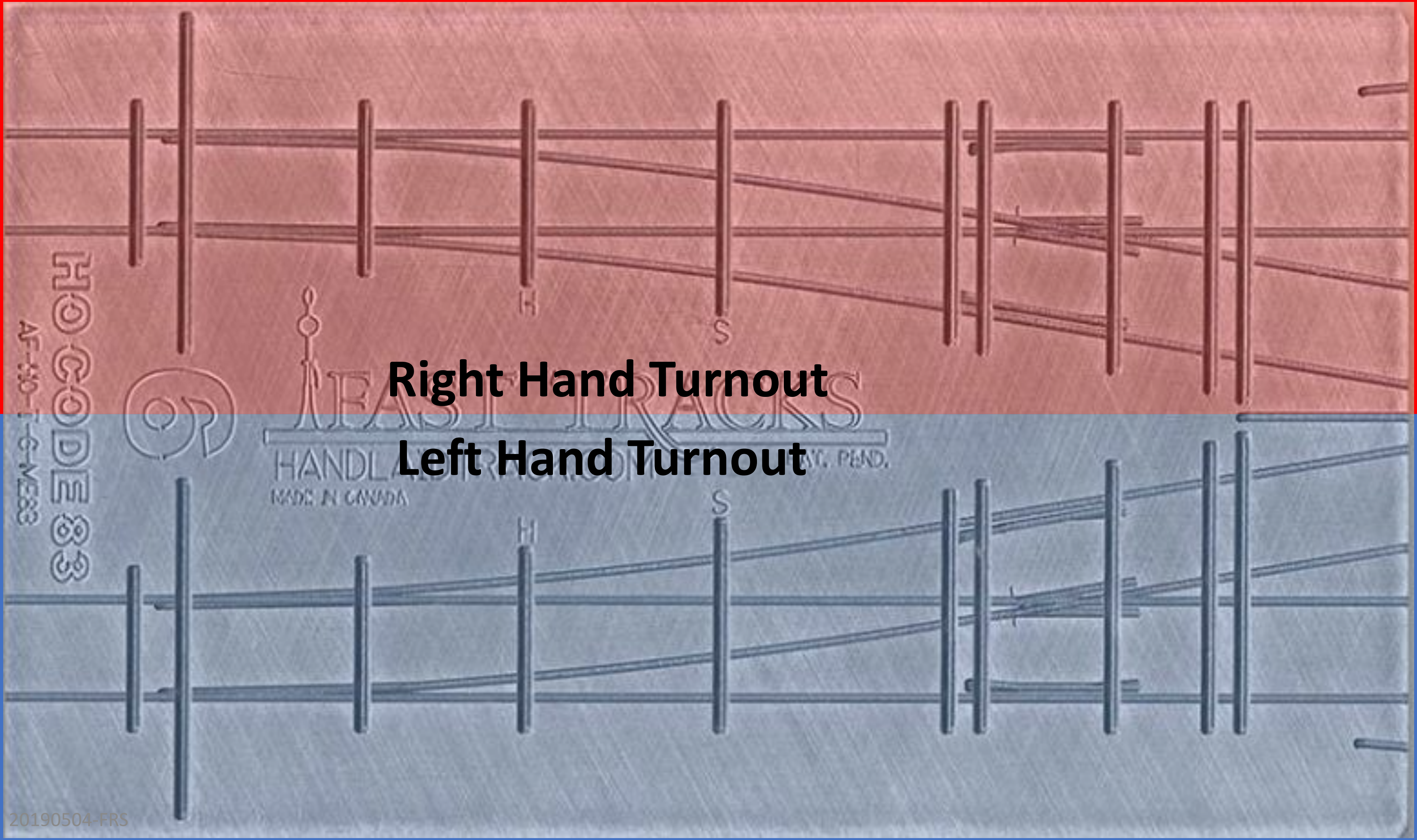
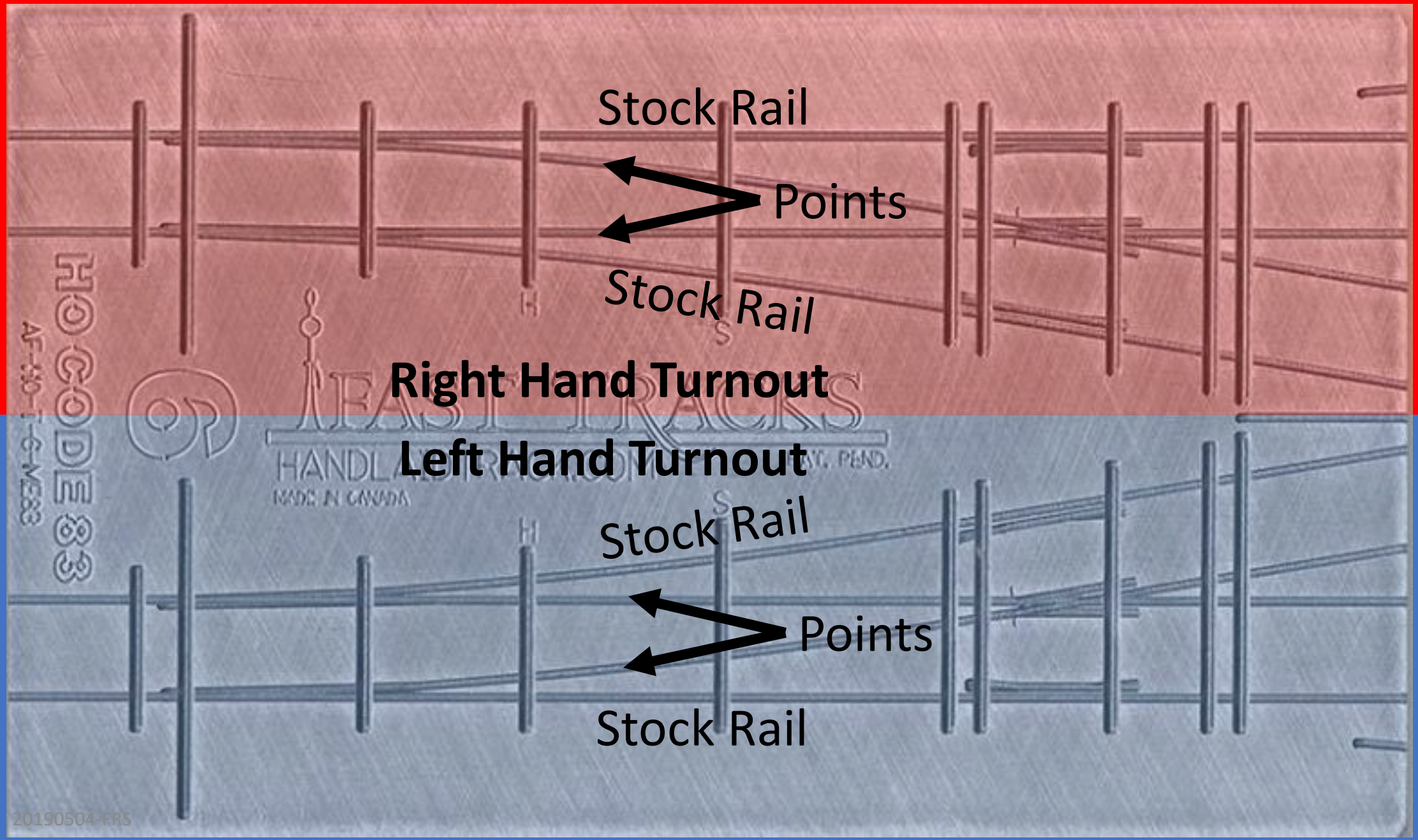
Right Hand Turnout

Left Hand Turnout





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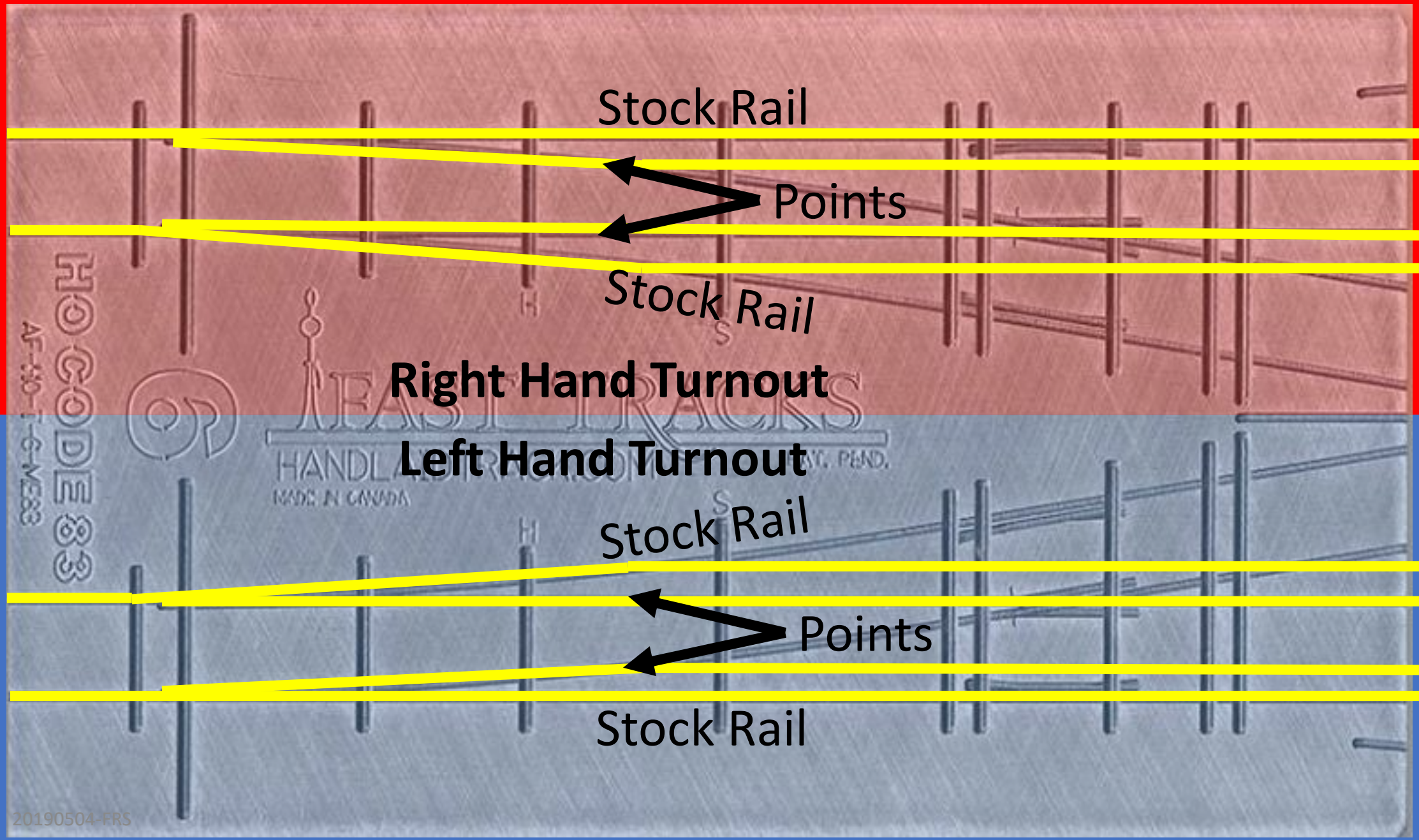
Stock Rail
Points
Stock Rail
Right Hand Turnout
Left Hand Turnout
Stock Rail
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Stock Rail
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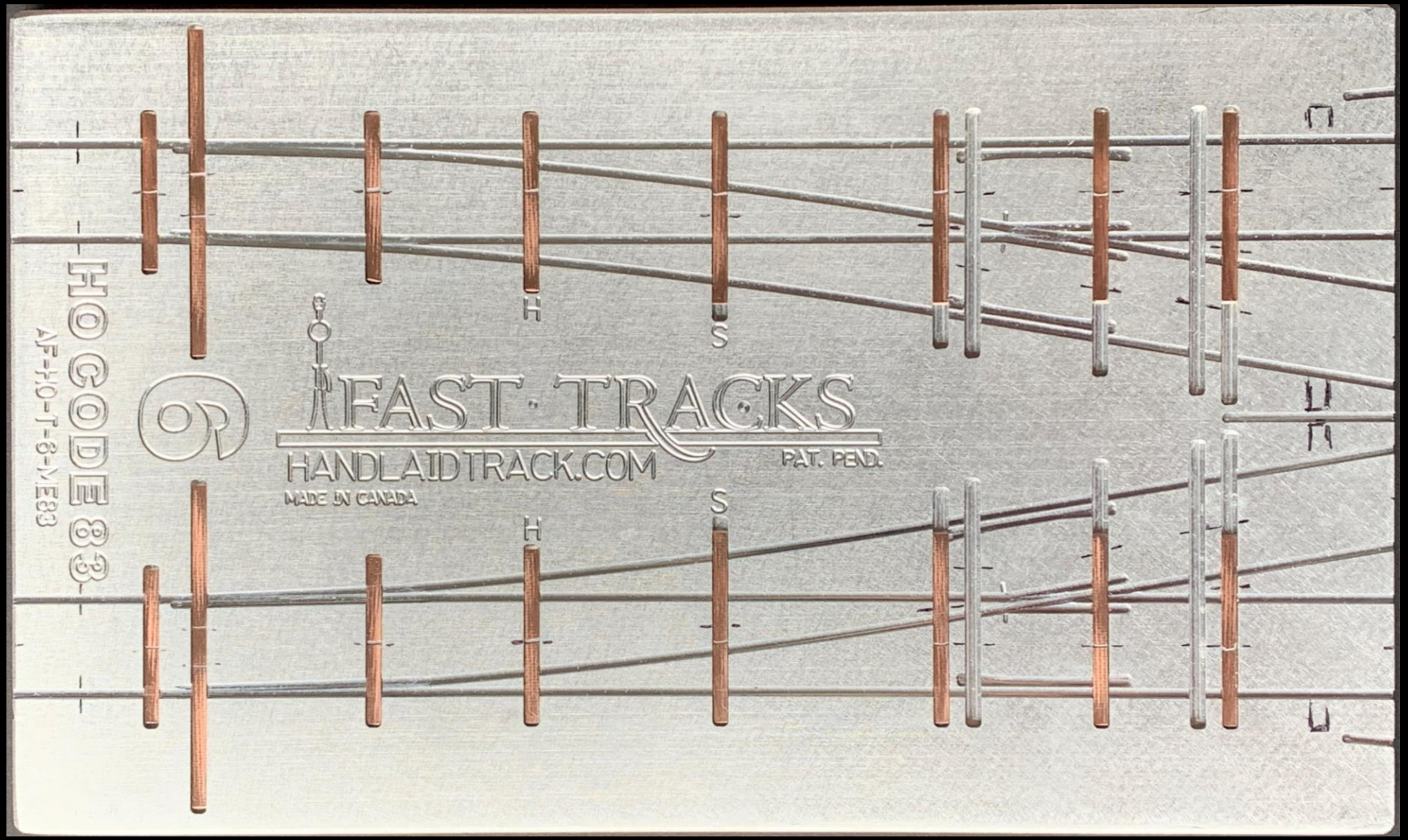
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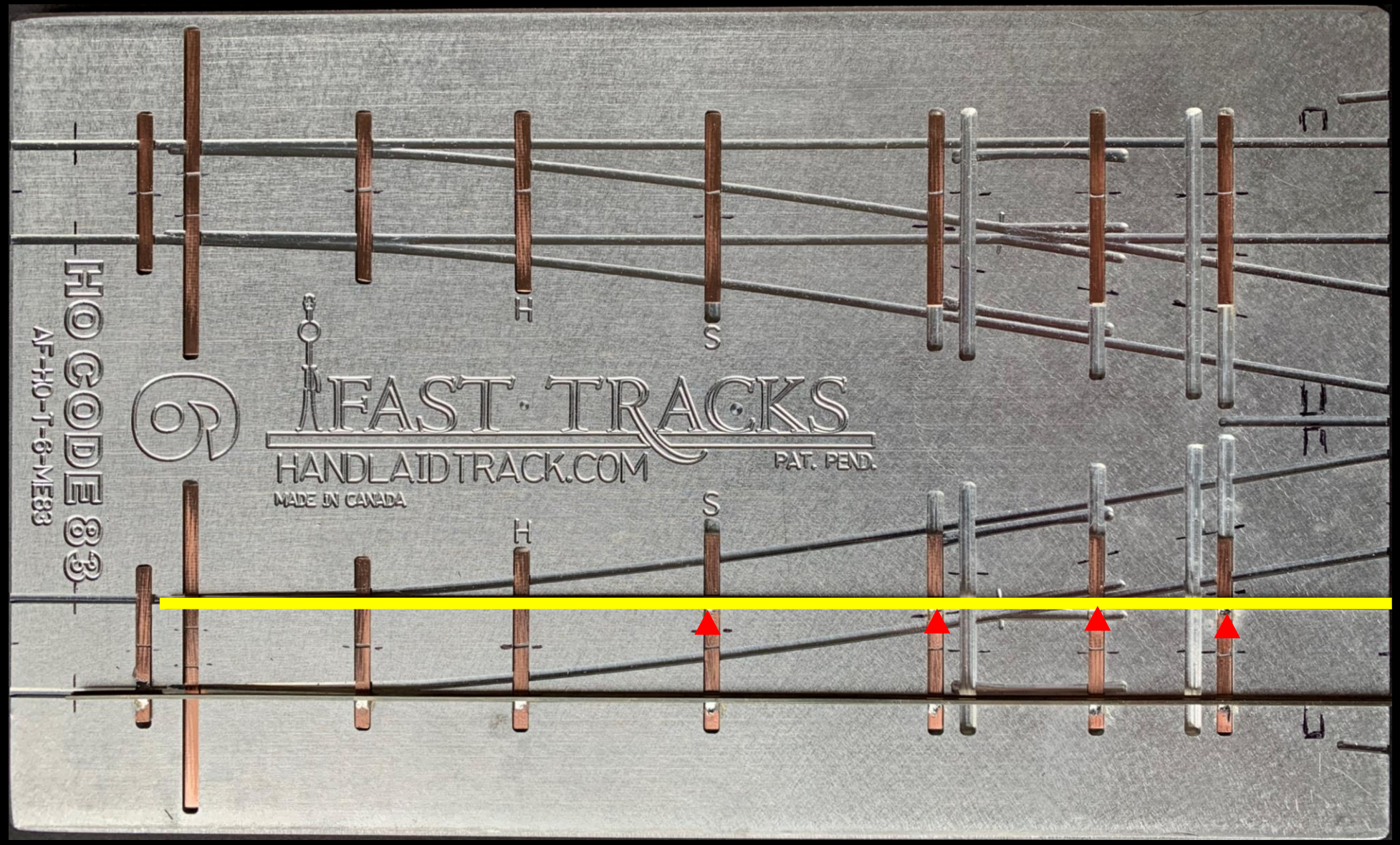
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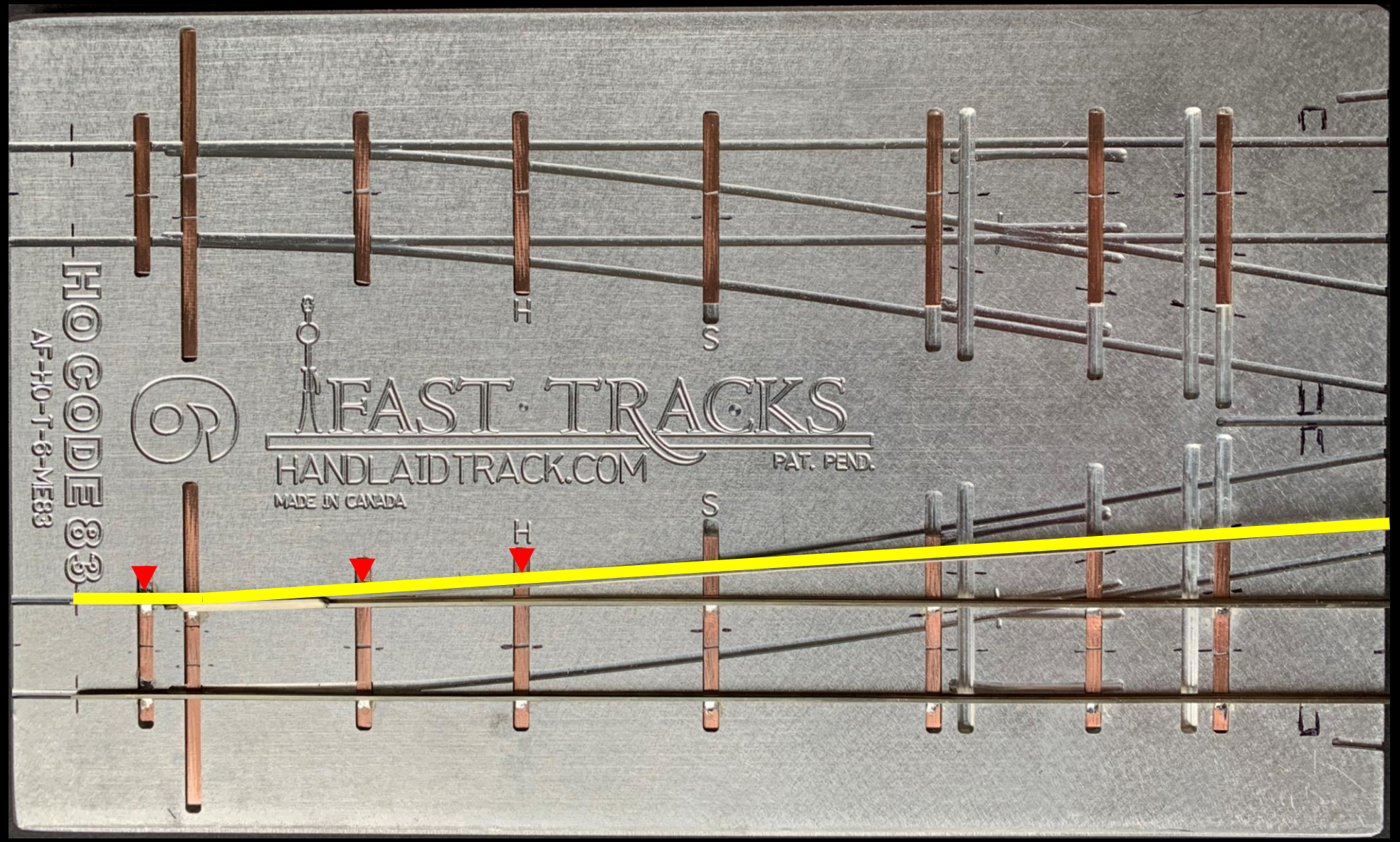
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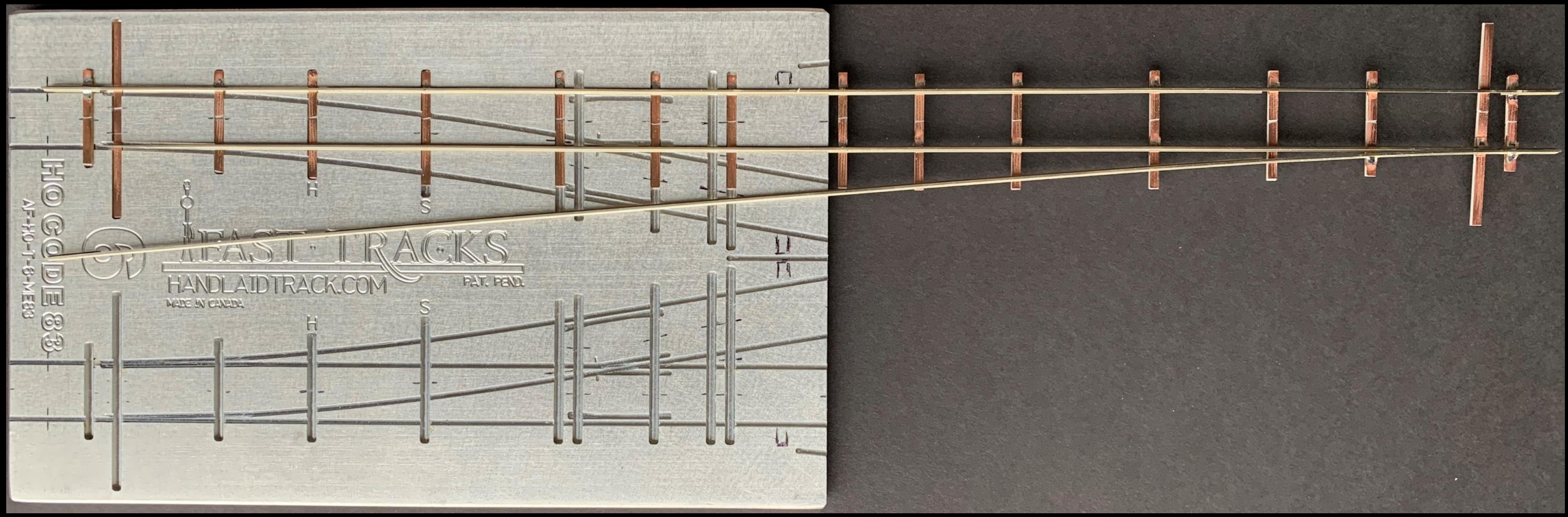

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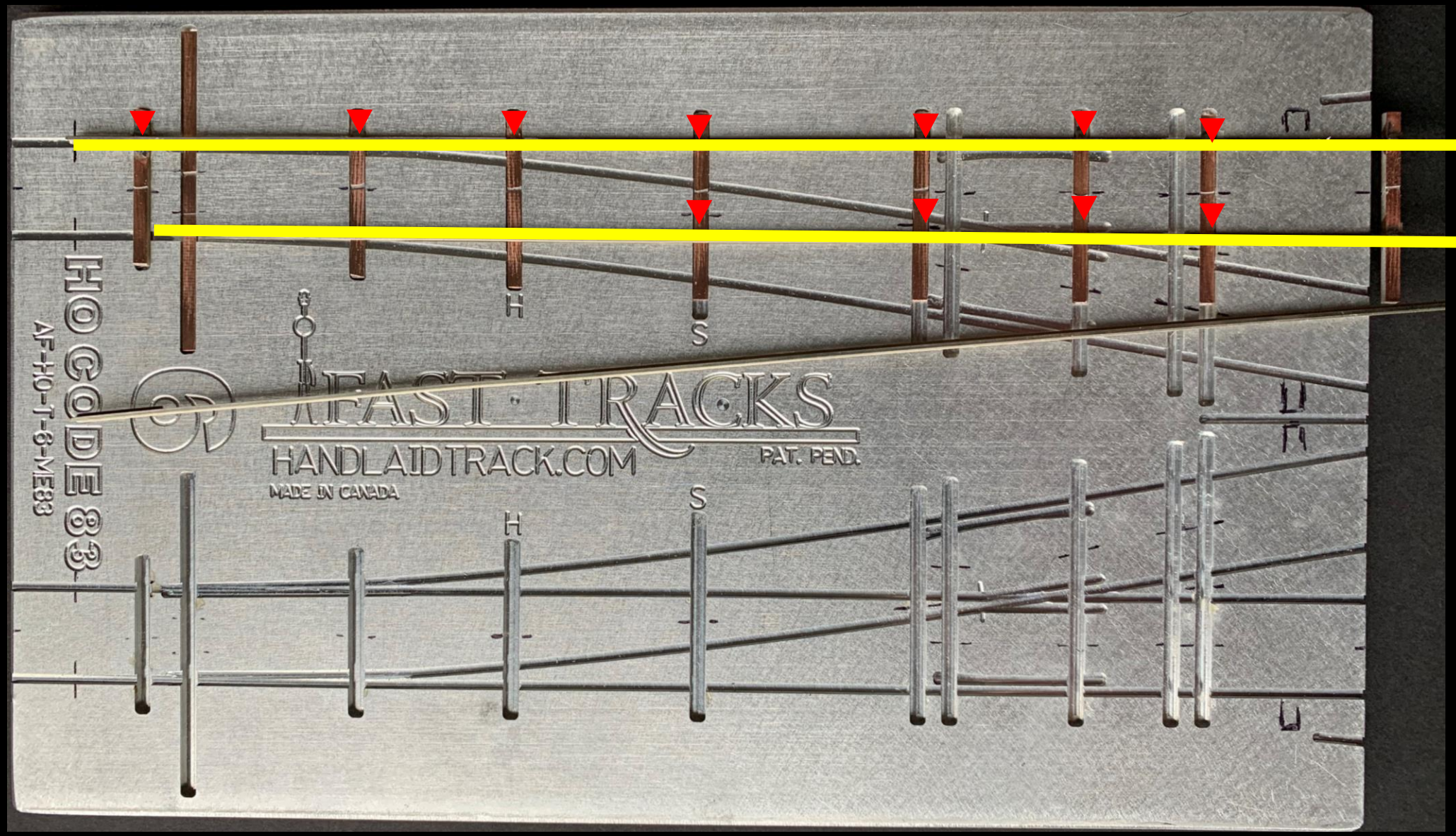

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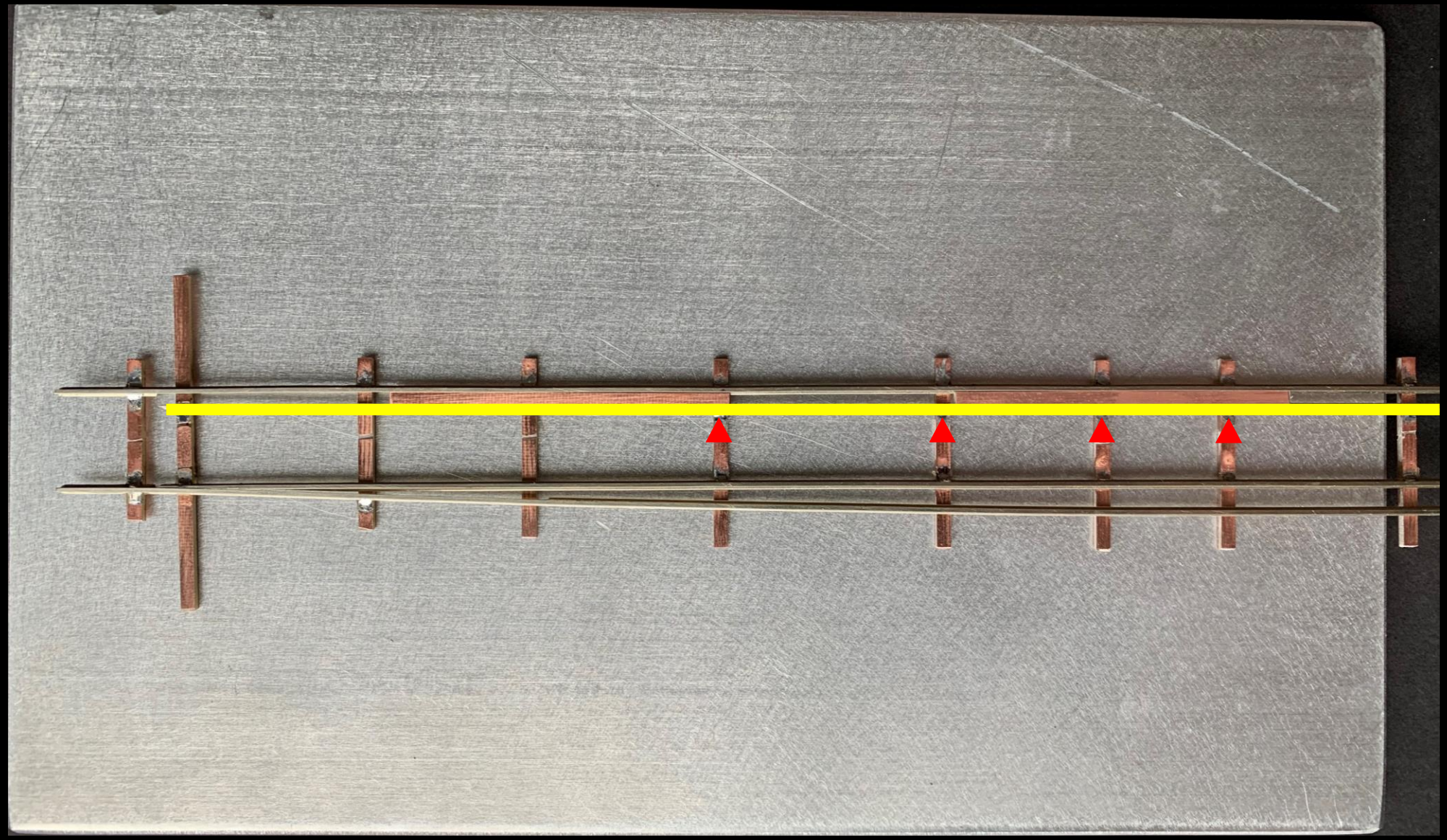

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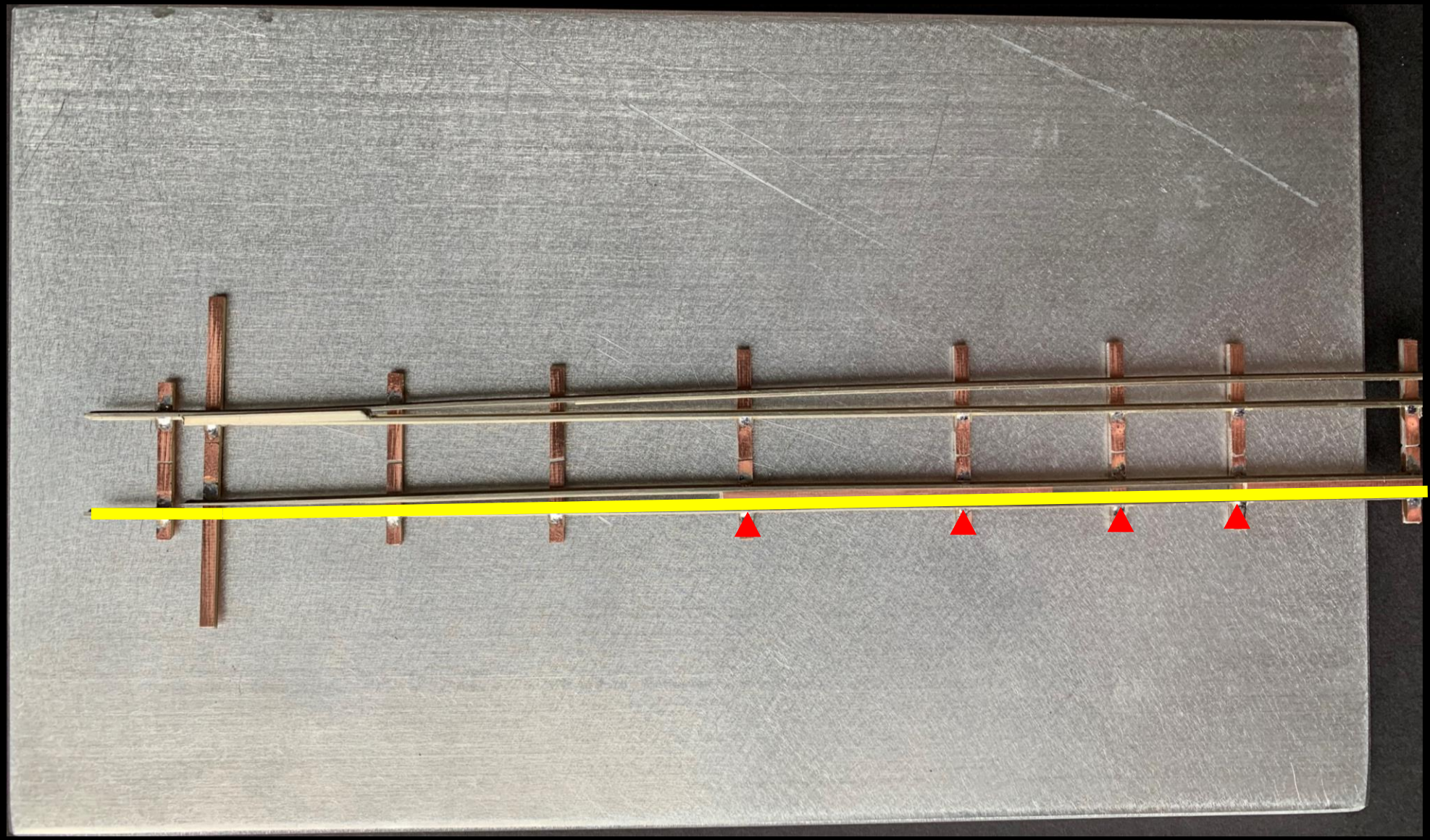

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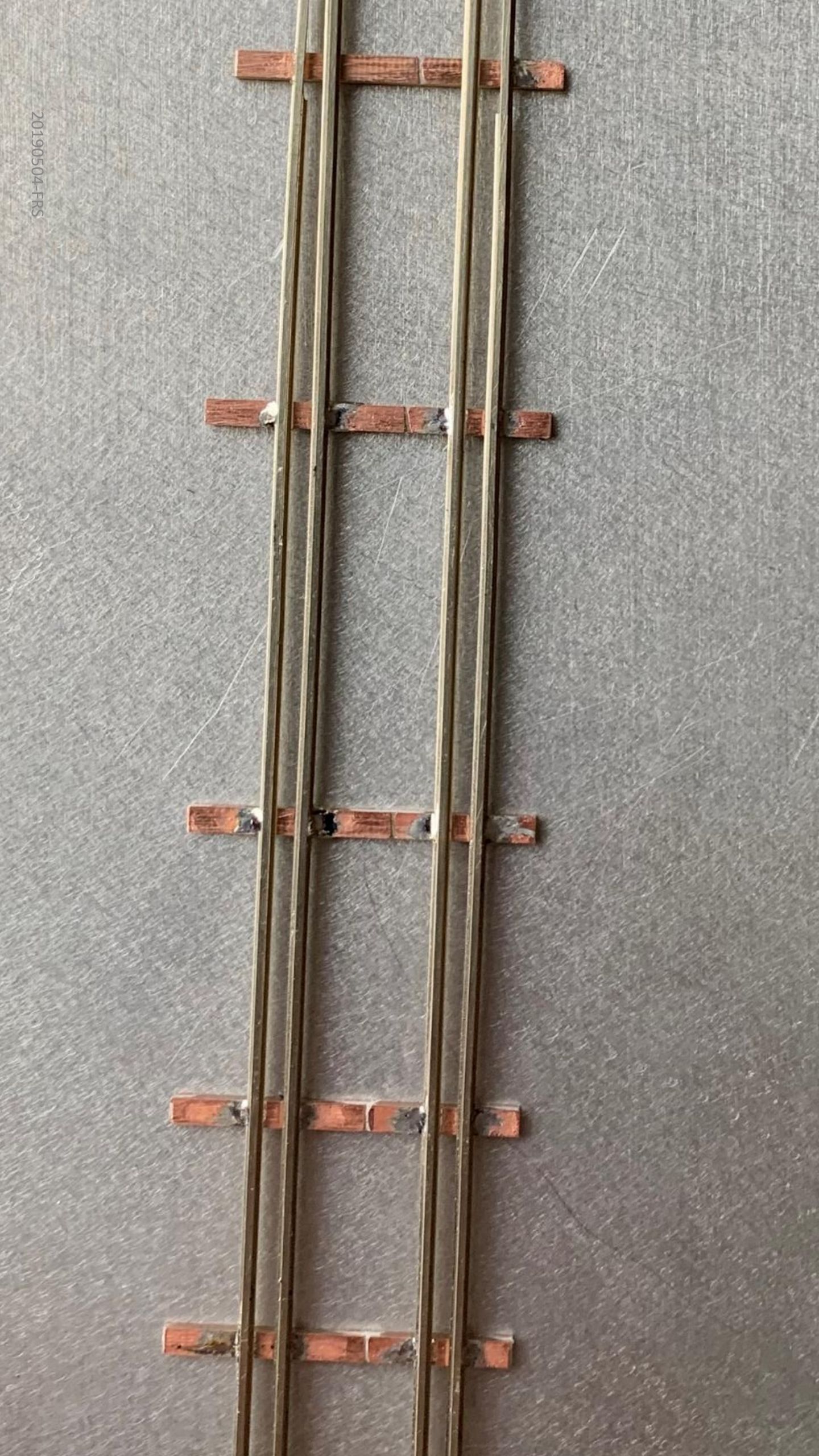
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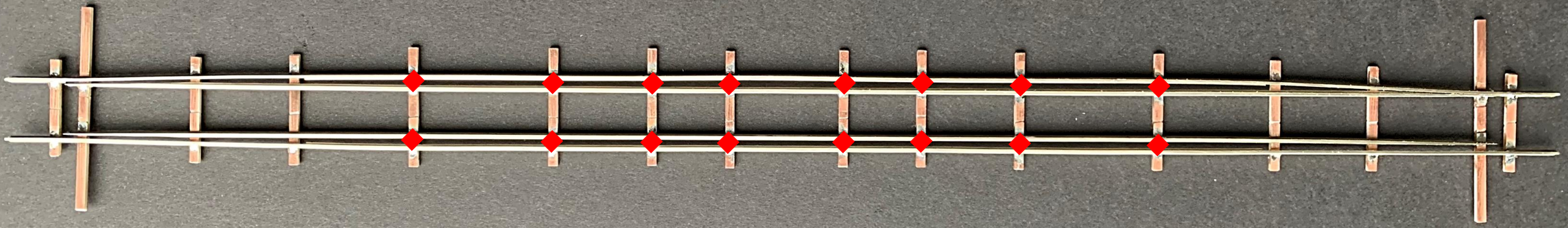

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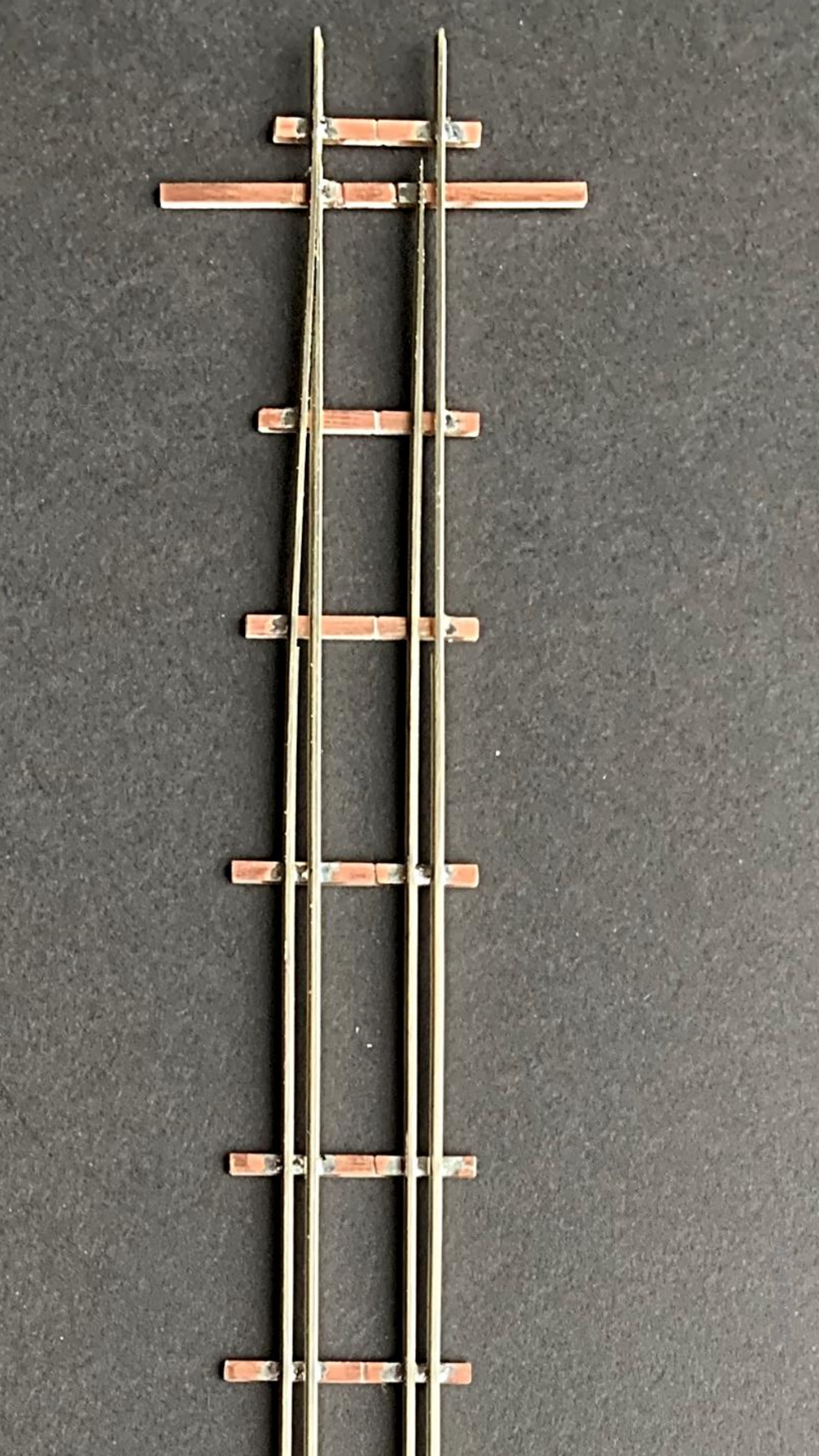

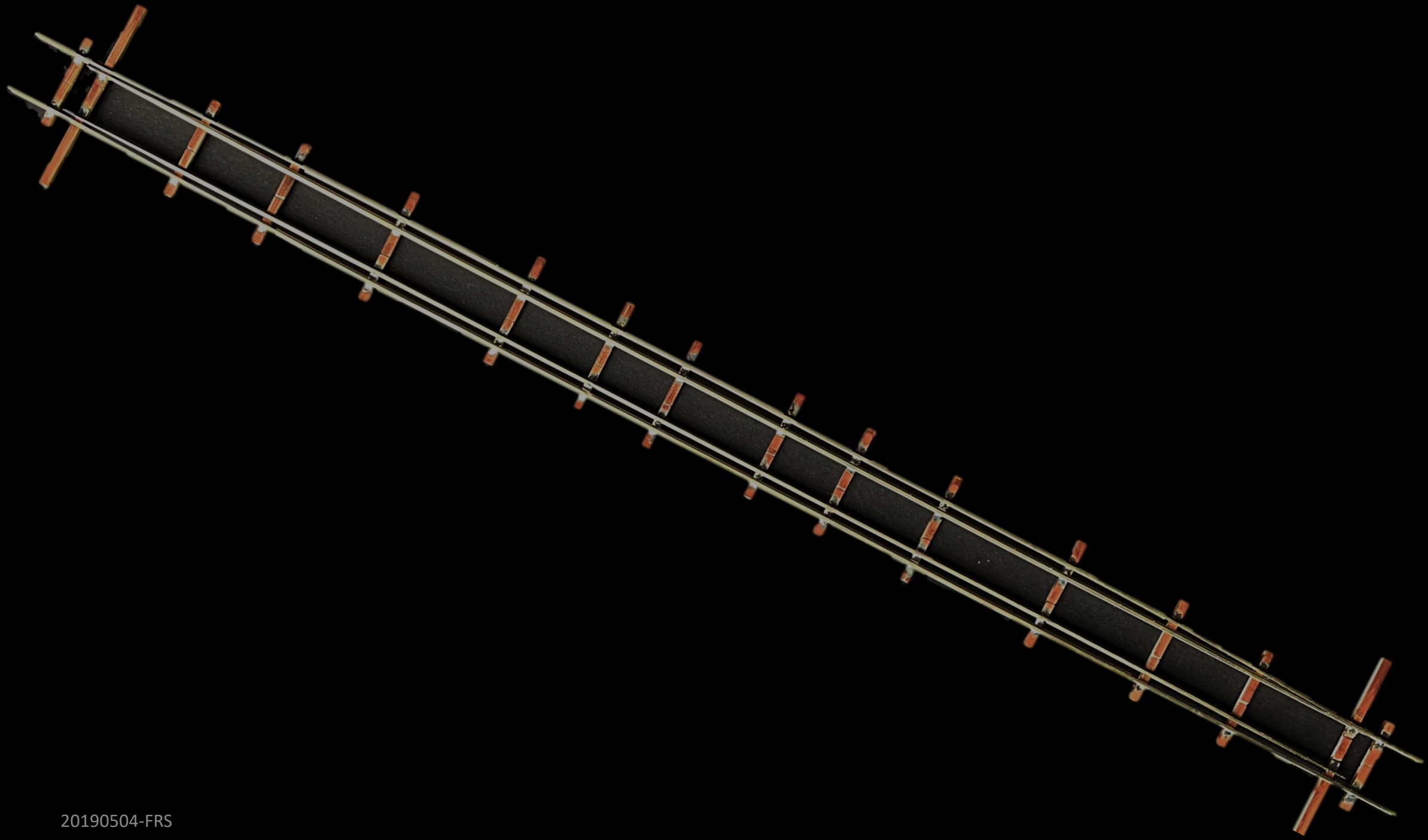

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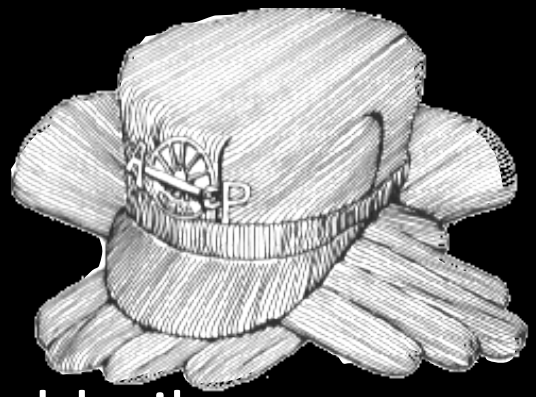
Finishing Part 1 - Mechanical

- Follow the Fast Tracks recommendations for clean-up
  - Trackwork
  - Tools
  - Fixture
- Throwing the points
  - Ground throw
  - Bluepoint
  - Tortoise
  - Something else

Finishing Part 2 – Makin’ it look GOOD

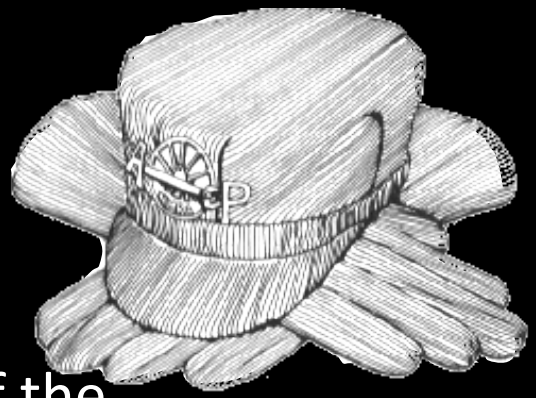
- Ties
  - Your choice – Wood or Plastic
  - Stain before adding to the Gauntlet Track
  - Pliobond to attach to bottom of rail
- Paint the rail web
- Scale House/Shed
- Strip plastic between rails
- Digital/Electronic simulation of weighing rolling stock

NMRA AP Program



- Gauntlet Track may be used as one of three required scratchbuilt pieces of trackwork for Model Railroad Engineer - Civil
- You MUST be able to run an engine on its own power through all pieces of the trackwork
- It MUST conform to the NMRA track gauge
- If you built turnouts and they met the requirement, this will, too!

NMRA AP Program



Construct for Merit Judging, scratch built scale models of any three of the following, and demonstrate their satisfactory operation:

- Turnout
- Point or Stub
- Crossover
- Double Crossover
- Single Slip Switch
- Double Slip Switch
- Crossing
- Gauntlet Track
- Gauntlet Turnout
- Dual Gauge Turnout
- Gauge Separation Turnout
  - Narrow gauge splitting off from dual gauge.
- Double Junction Turnout
  - One set of parallel tracks diverges from another.
- Three-Way Turnout
- Spring Switch
- Operating Switch in Overhead Wire
- Other

A Few Additional Fast Tracks Tips

- Foam-backed, bendable nail files – Sally Beauty Supply “after holiday” sales
- Nichols files for most filing
- Cheap file for removing burrs & finishing materials from PC board ties
- Add another cross tie behind the last one, but inside the turnout fixture, when building turnouts
- Scrap rail across the fixture when using weights to hold rail down for soldering
- Scrap rail on the other side of the Point forming tool
- Saved filings make a nice gondola open load or two

What’s in the Division 8 Toolbox?

- Assembly Fixture, Code 100, HO Scale, #6 Turnout
- Assembly Fixture, Code 100, HO Scale, #Slip Switch Turnout
- Assembly Fixture, Code 100, HO Scale, 30 Degree Crossing
- Point Filing Jig for Code 70 to Code 100, #6
- Point Filing Jig for Code 70 to Code 100, 30 degree crossing
- Point Filing Jig for Code 70 to Code 100, #6 Slipswitch
- StockAid Stock Rail Filing Tool for Code 100 Rail
- Nicholson Points Finishing File, 8" Mill/Bastard w/o Handle
- Printed Reference Materials

References

- March 1977 Model Railroader Article – “Ultrareliable handlaid turnouts” by John Lukesh
- September 2002 Model Railroader Article – “Build a Scale Track” by Bill Darnaby
- January 2018 Model Railroad Hobbyist Article – “Build a Scale Track” by Michael Anteau
- https://en.wikipedia.org/wiki/Gauntlet_track - Wikipedia article
- https://www.nmra.org/civil - NMRA Civil Engineer Requirements
- http://www.handlaidtrack.com/building-turnouts-video-series - Videos
- https://www.bouldercreekengineering.com/docs/track_scale_talk_handout.pdf - Additional scale track references

Clinic Handout/Outline/Slidedeck

tech_trainer@rocketmail.com

SUBJECT: Gauntlet Track Clinic

- OR -

https://tinyurl.com/FredSowardClinics

Create a Gauntlet Track using FastTracks Tools

Fred Soward