

Session #: 18

Design Study: New Track Geometry

2003 BricksWest

Carlsbad, California

Session #: 18

Presenter: Ben Fleskes

Sunday, Feb. 16, 2003 @ 9AM

Overview

- Wish List
- 9v LEGO train track mods
- Final suggestions

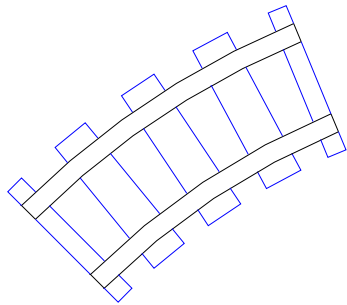
New Track Geometry Wish List

- Flexible track length
- Improved switch geometry
- More radius options
- Different crossings

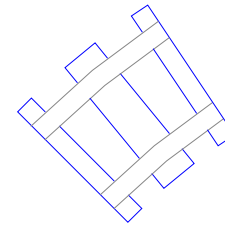
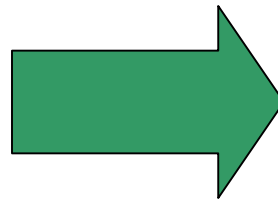
Criteria

- Compatible with existing track
 - Maintain tie spacing ~ two studs between ties
 - 16 stud offset
- Durable
- Play well together – with other pieces

One Possible Answer: Track Mods

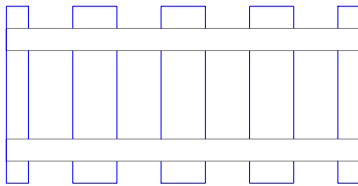


40S R 22.5 deg curve

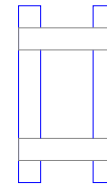
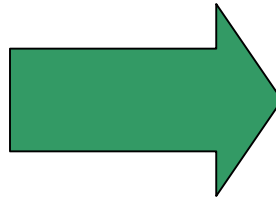


40S R 11.25 deg curve

Or:



16S straight



4.35S straight

Why 4.35?

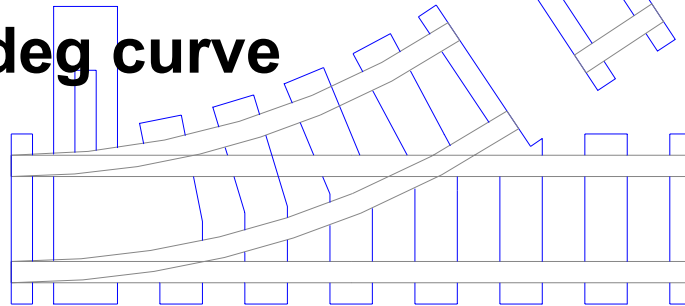
40S R 11.25 deg curve

+

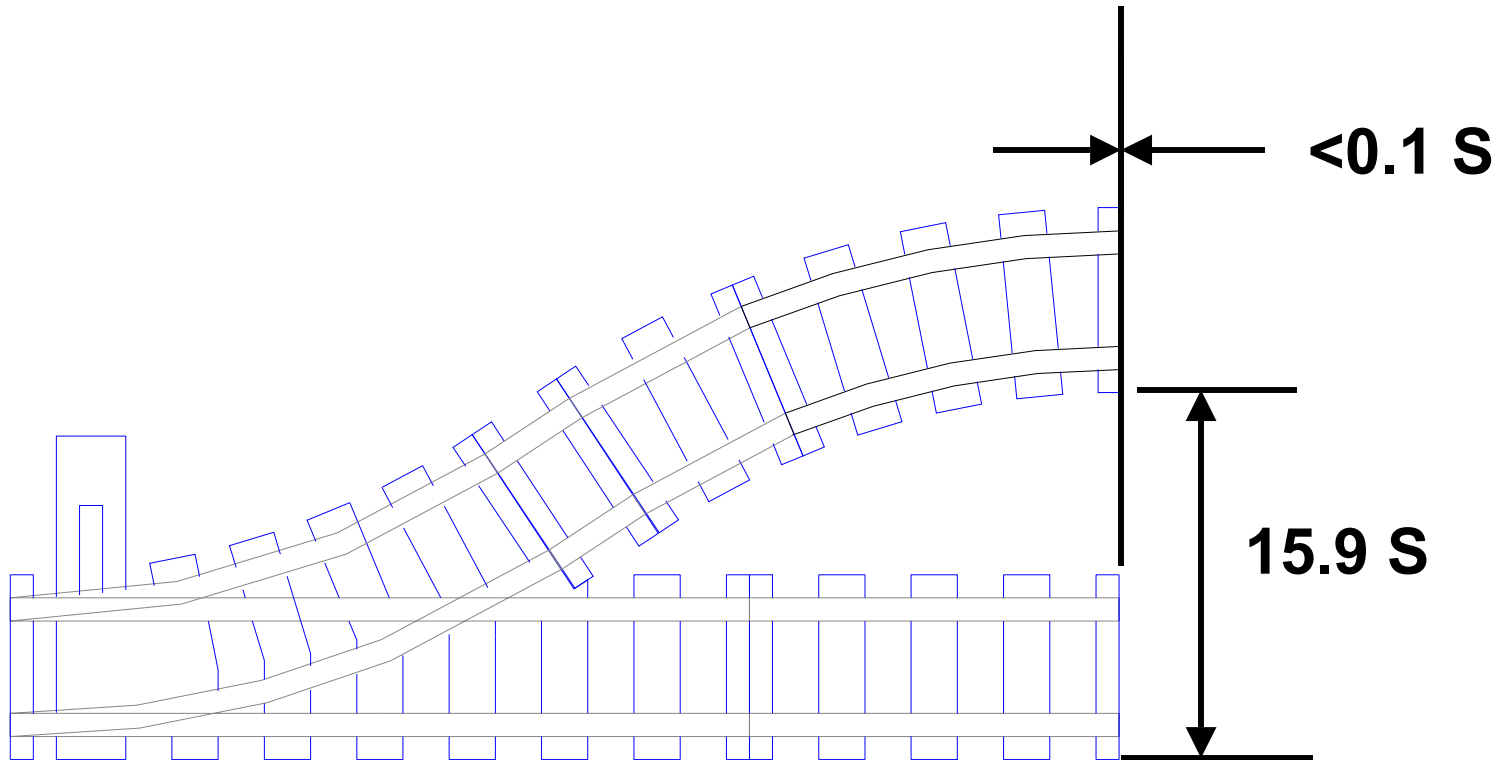
4.35S straight

+

40S R 33.75 deg curve



Pretty darn close



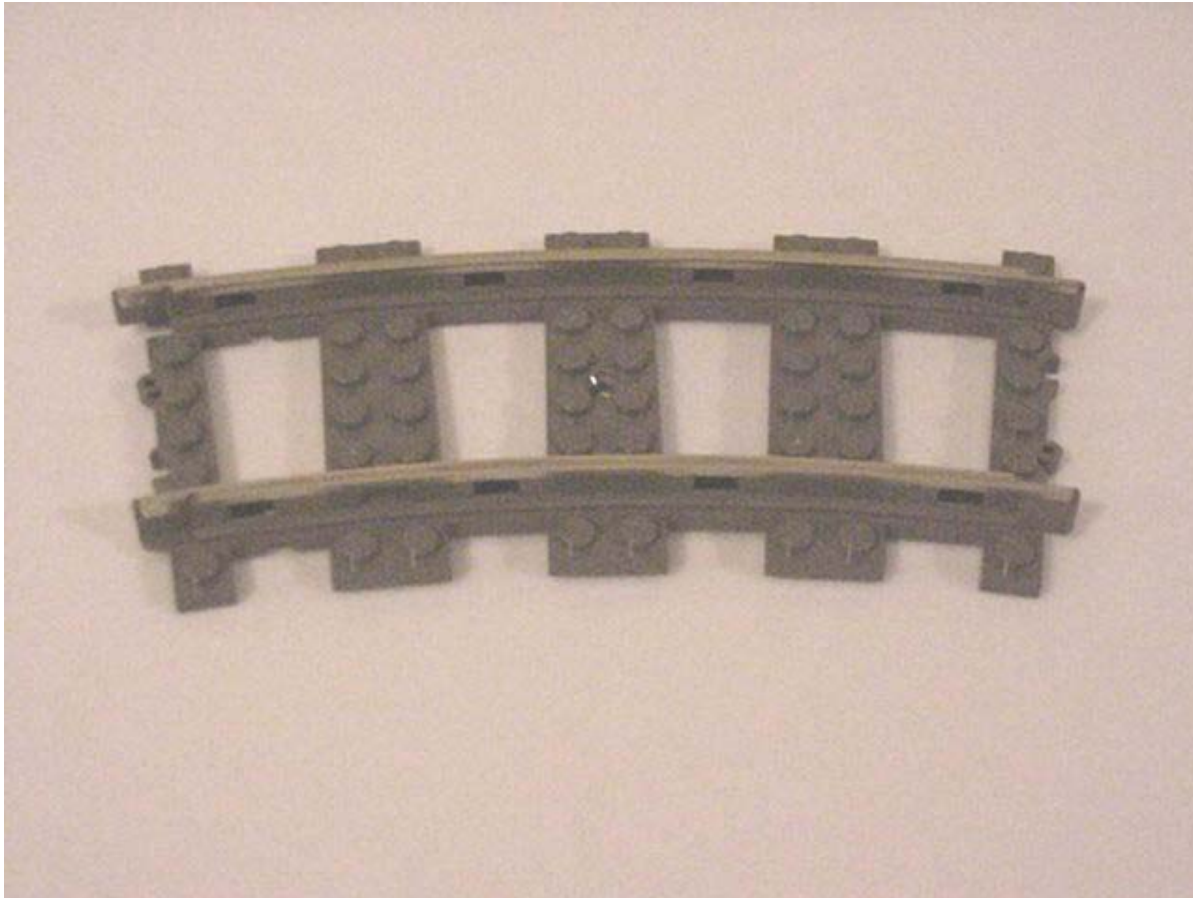
Making it happen...



What you need:

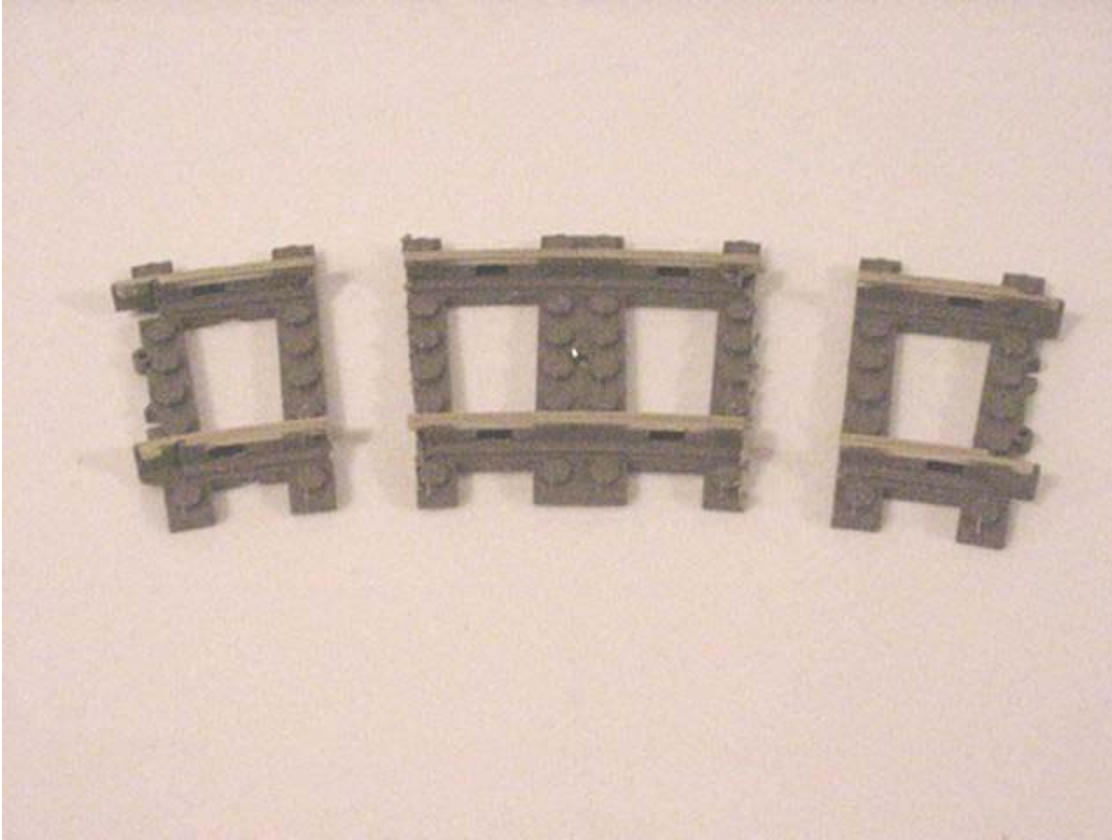
- .080" x .080" polystyrene
- Soldering iron
- Solder
- MEK (glue)
- Hack saw
- Exacto knife
- Needle files
- Flat file

Step 1: Start with a regular curve track



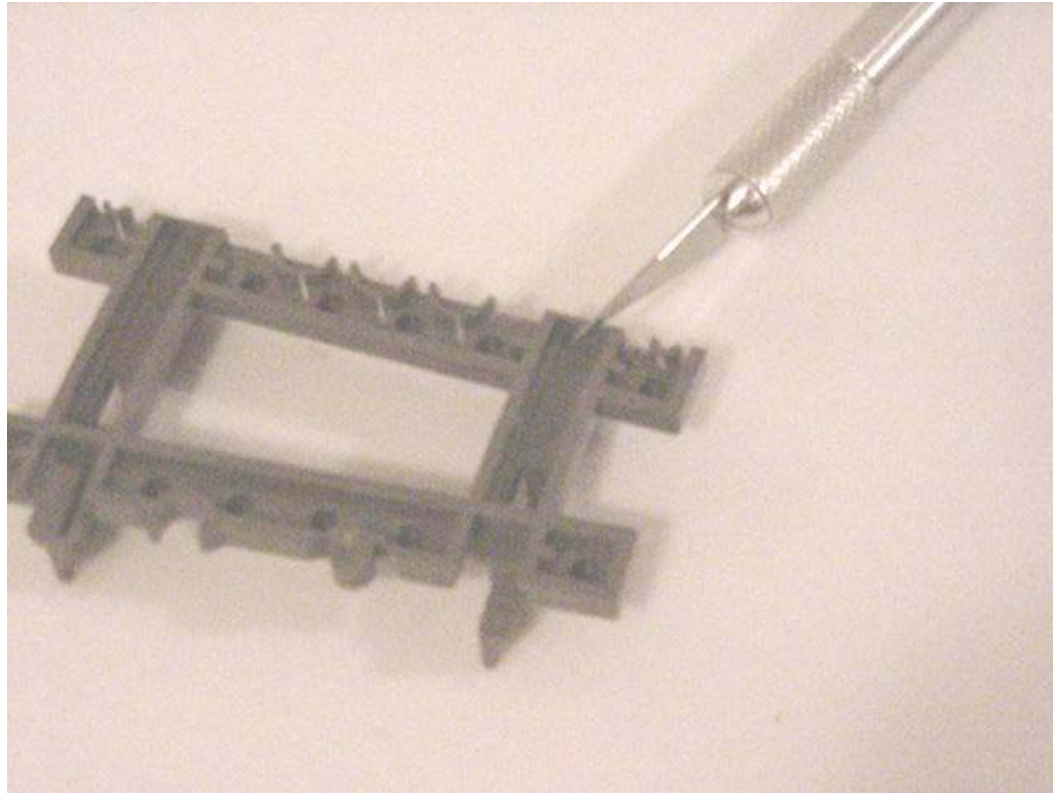
Ben Fleskes: Design Study: New
Track Geometry

Step 2: Cut it apart



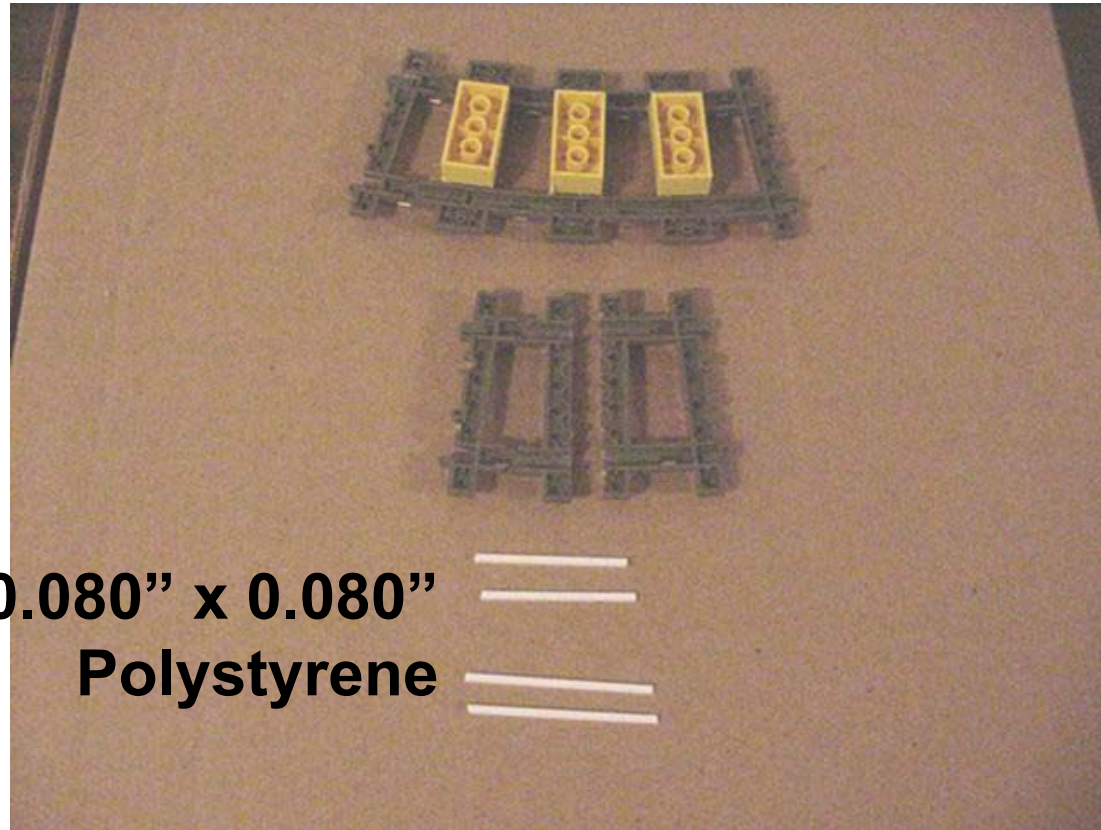
Hint: A Dremel tool with a cut-off wheel works really well.

Step 3: Trim inside flanges



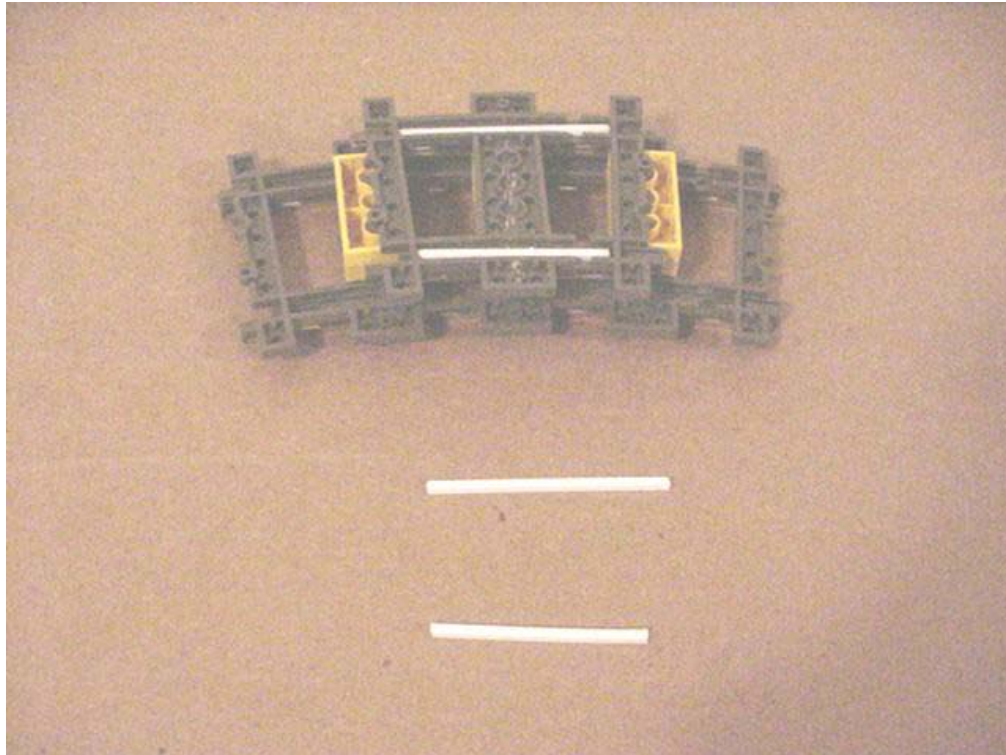
Ben Fleskes: Design Study: New
Track Geometry

Step 4: Stage for assembly



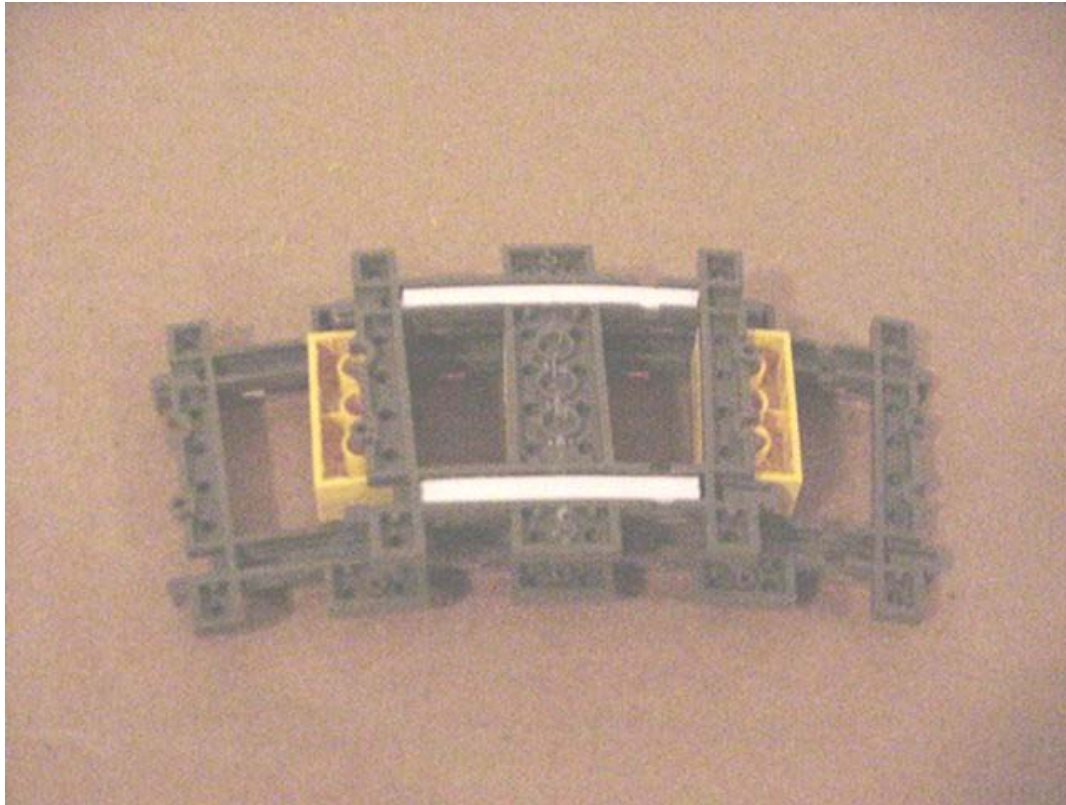
Note: the track with yellow bricks provides alignment

Step 5: Begin Assembly



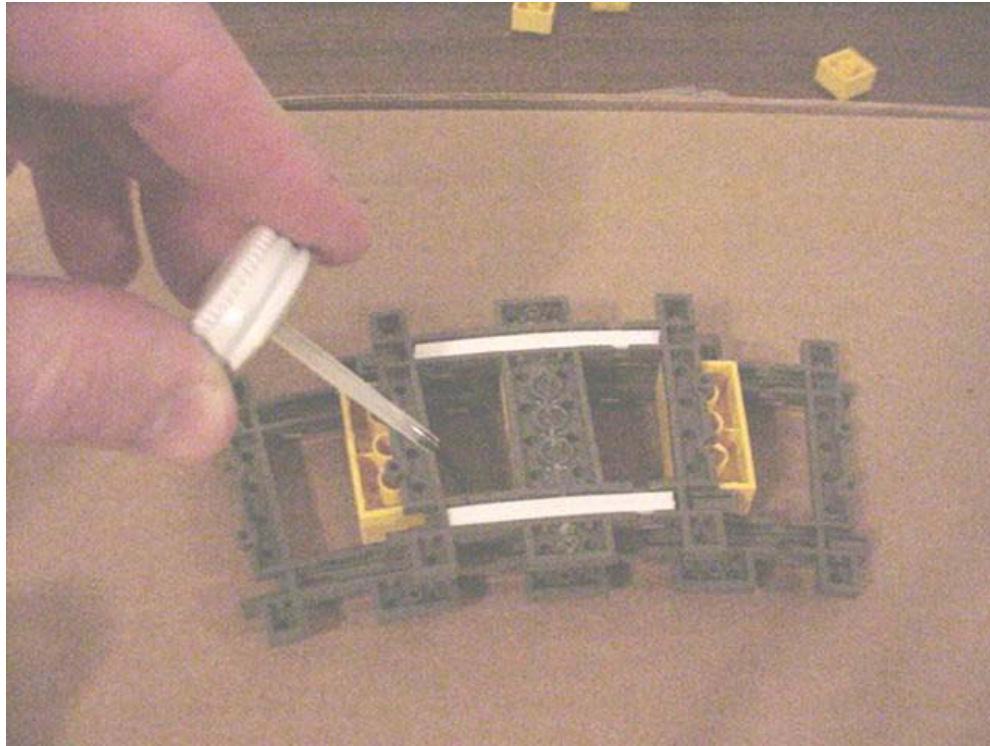
Ben Fleskes: Design Study: New
Track Geometry

Step 6: Final assembly



Hint: use a small blunt object to press the polystyrene firmly in place

Step 7: Glue



**Danger! MEK
fumes are
harmful!
Follow all
recommended
precautions!**

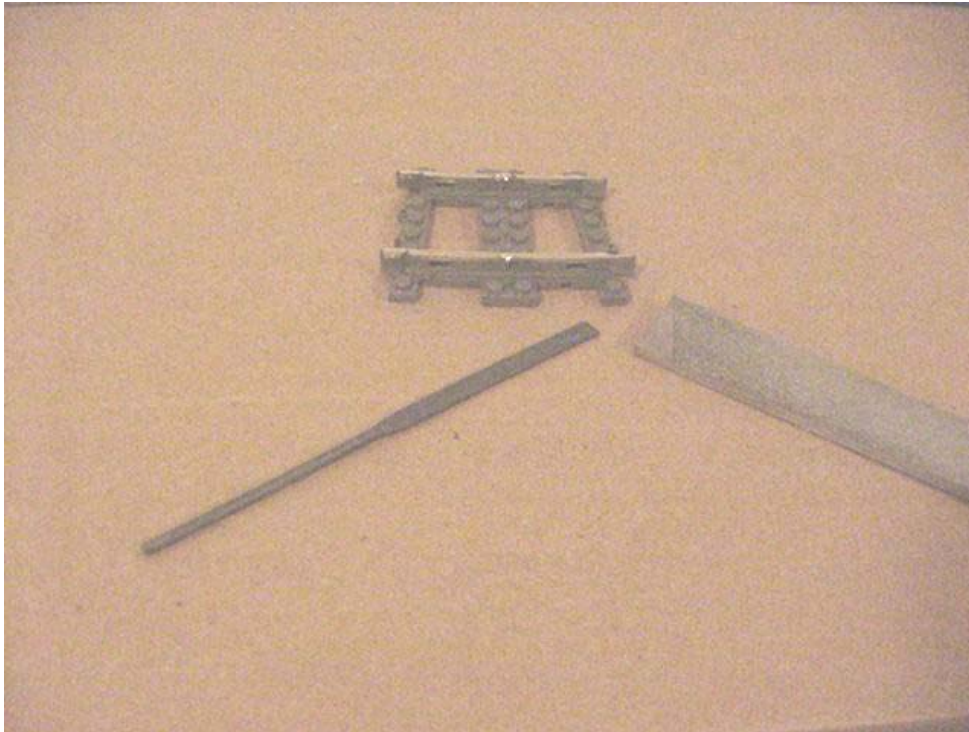
MEK: Methyl Ethyl Ketone

Step 8: Solder



Hint: solder
top and
sides of
each rail

Step 9: File



- File the excess solder away

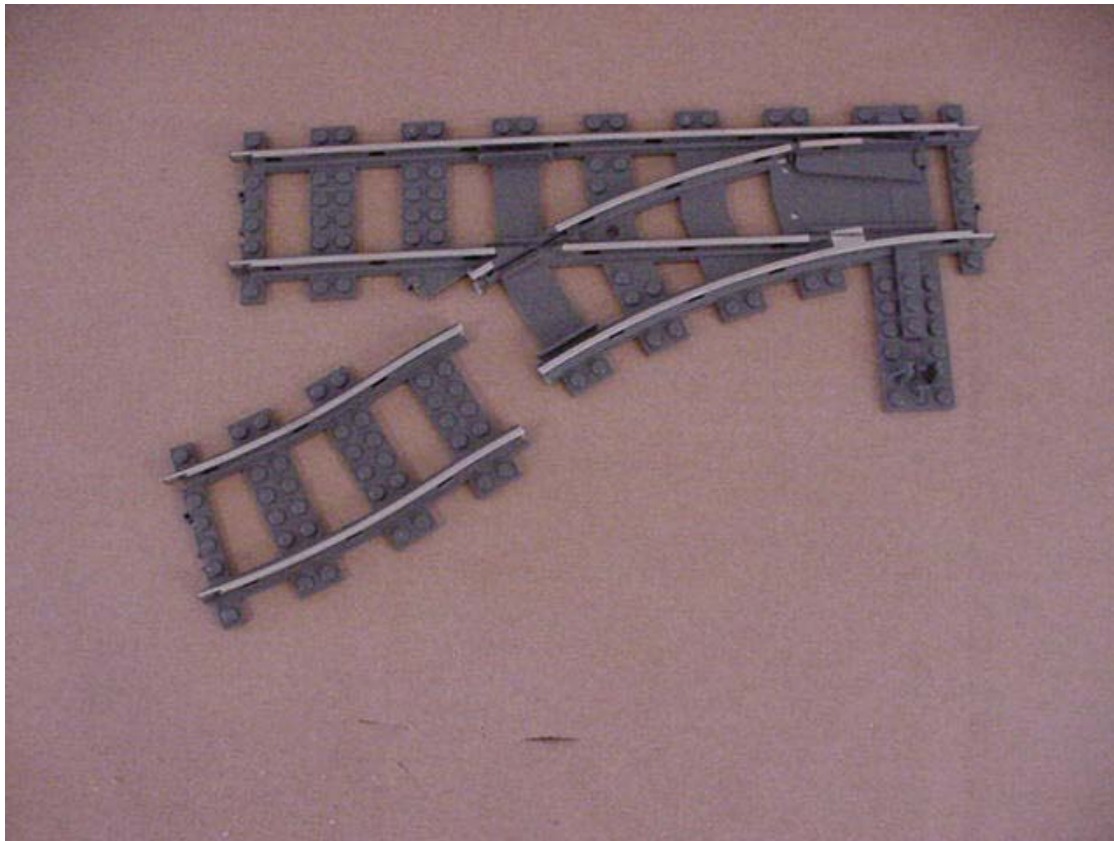
Step 10: Done



Ben Fleskes: Design Study: New
Track Geometry

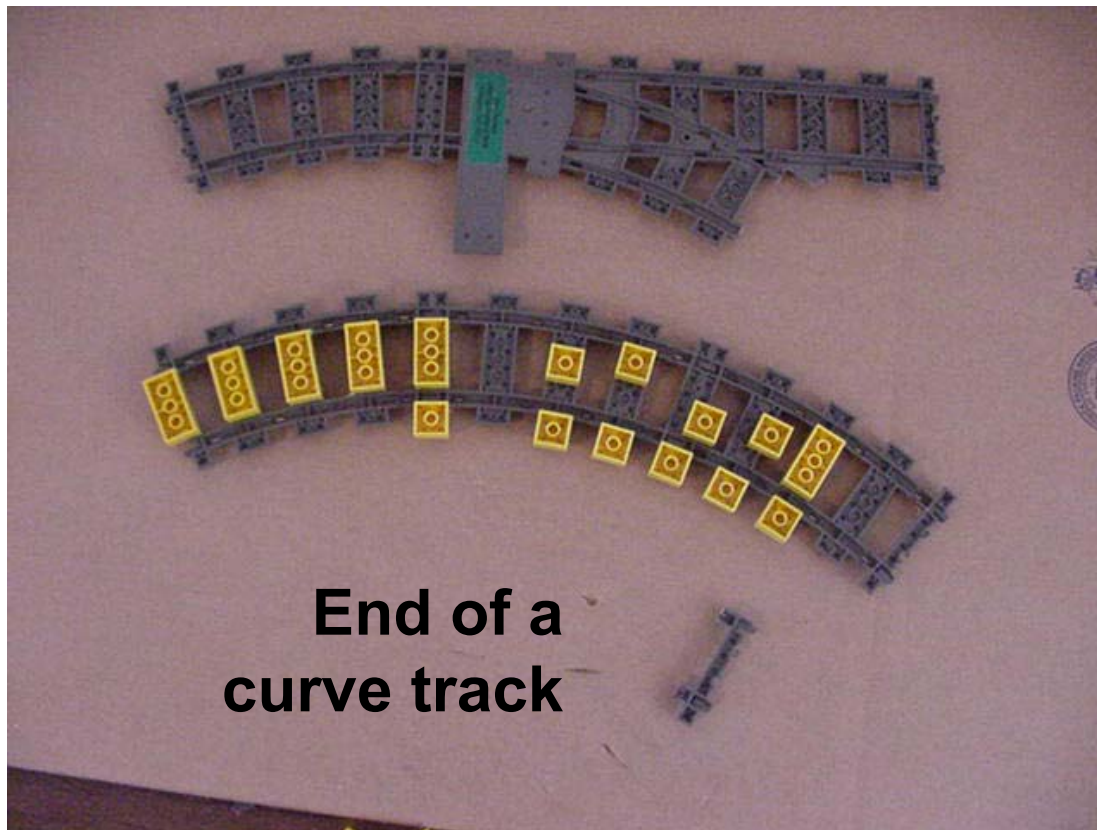
Something a little more Complicated

Switch Mod 1: Cut the track



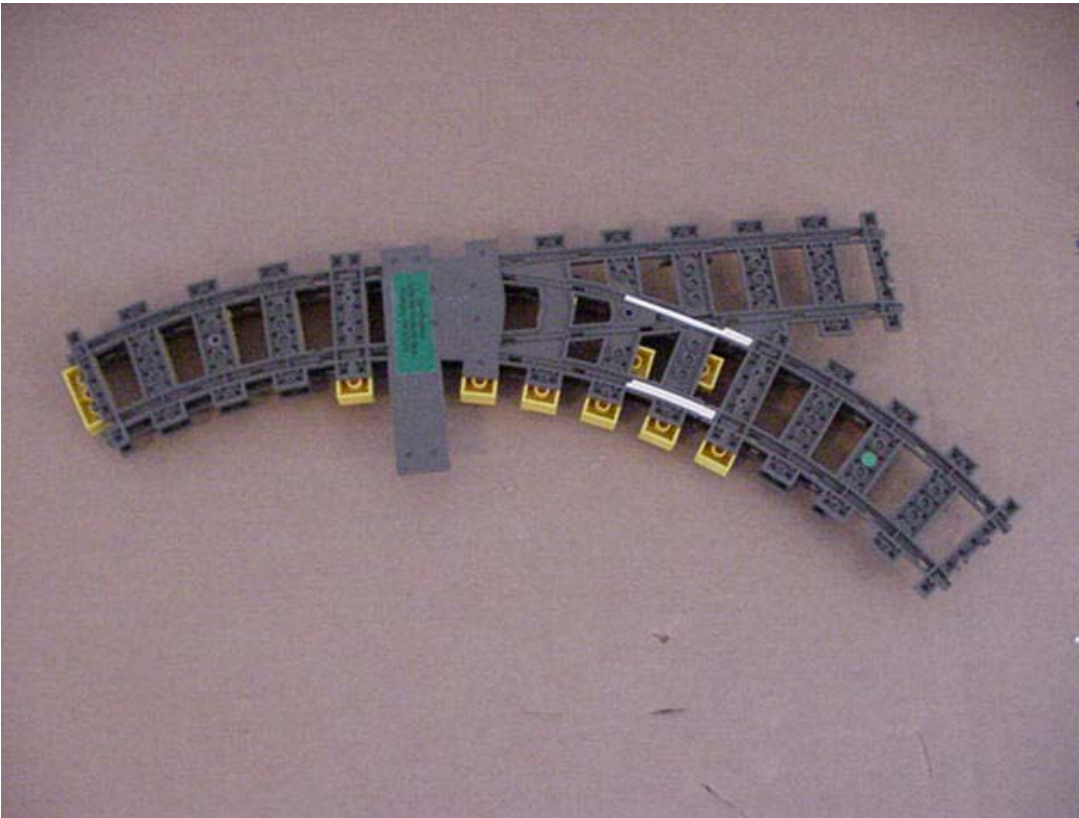
Ben Fleskes: Design Study: New
Track Geometry

Switch Mod 2: Prep for assembly



Hint: the remnant from a switch left can be used to modify a switch right.

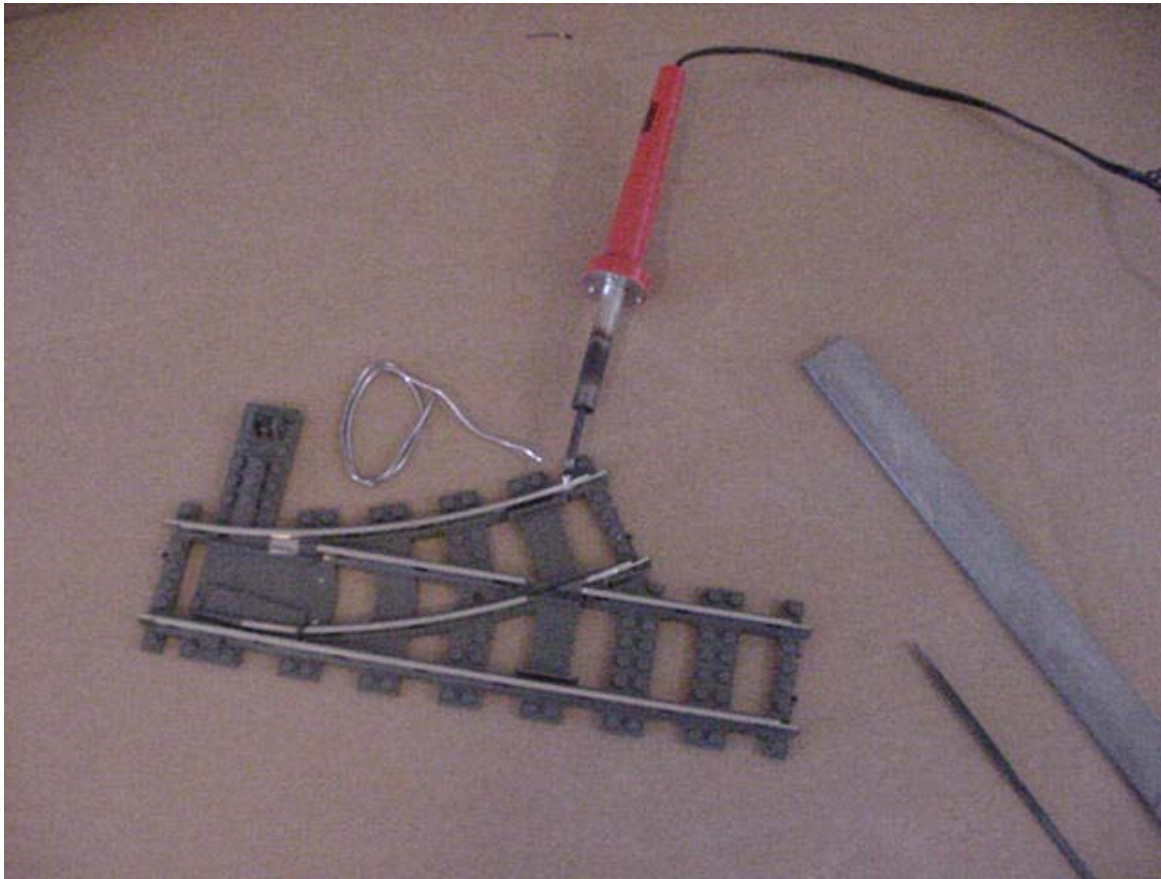
Switch Mod 3: Reinforce and glue



Hint: Use
extra curve
tracks to
keep pieces
aligned.

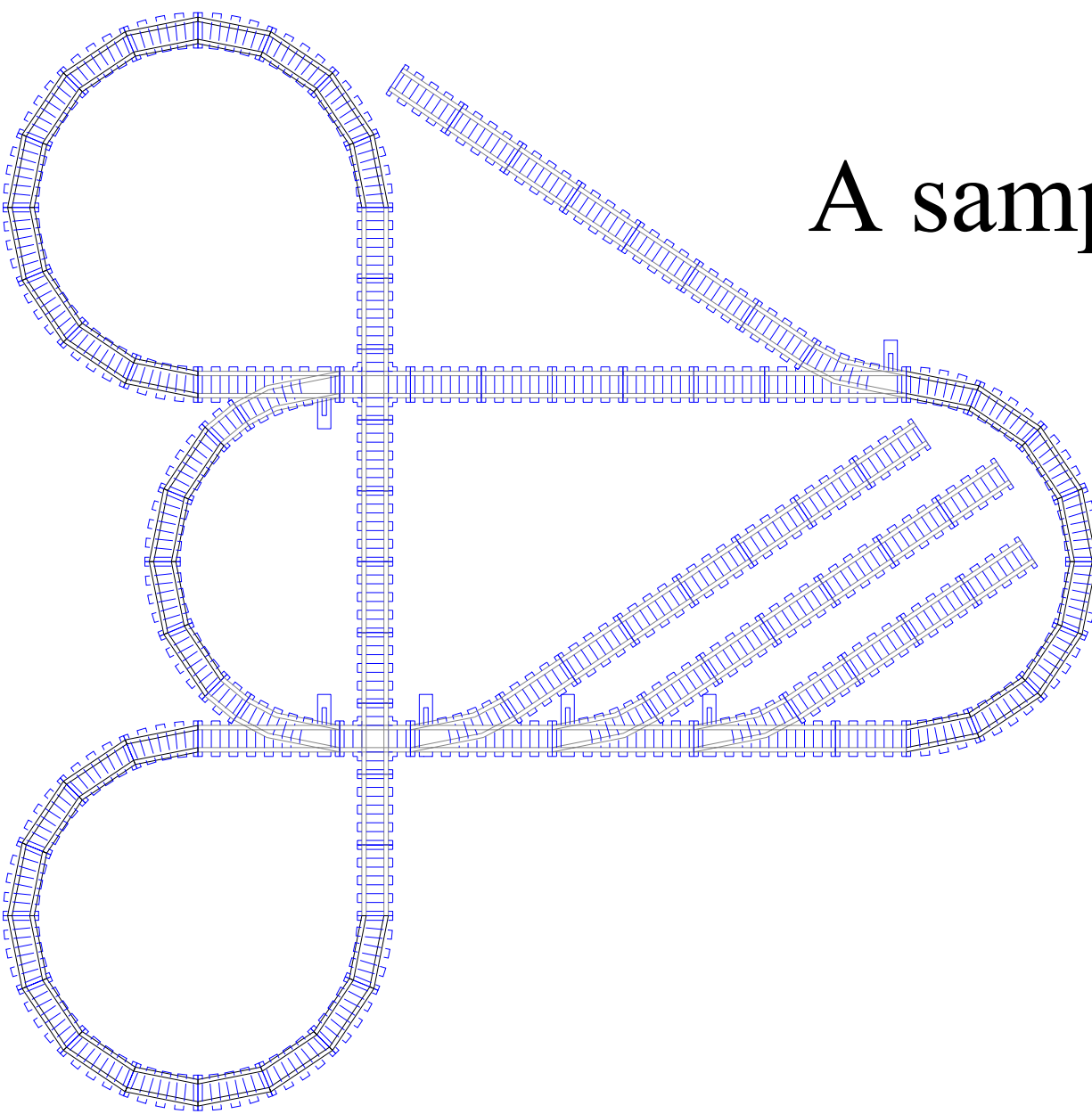
Hint: Be
careful not
to glue the
tracks
together

Switch Mod 4: Solder and File



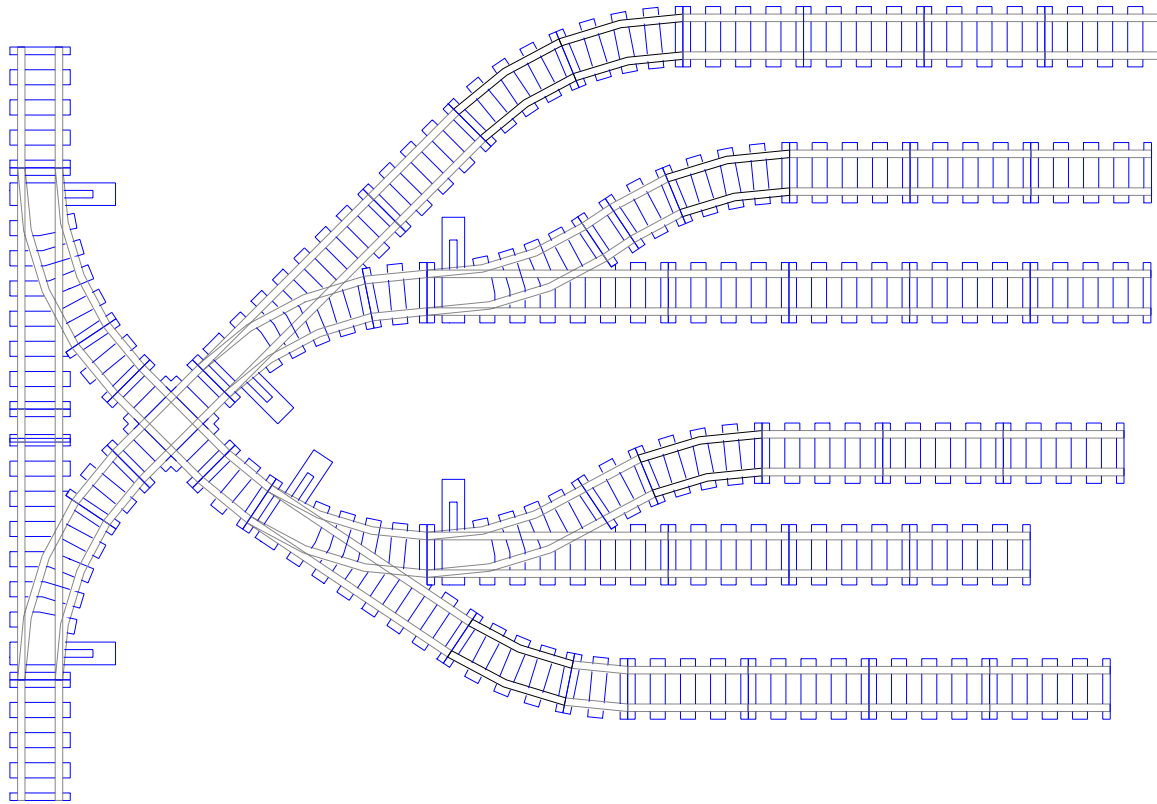
Hint: Be
careful not
to dislodge
metal rail
when
soldering

A sample layout



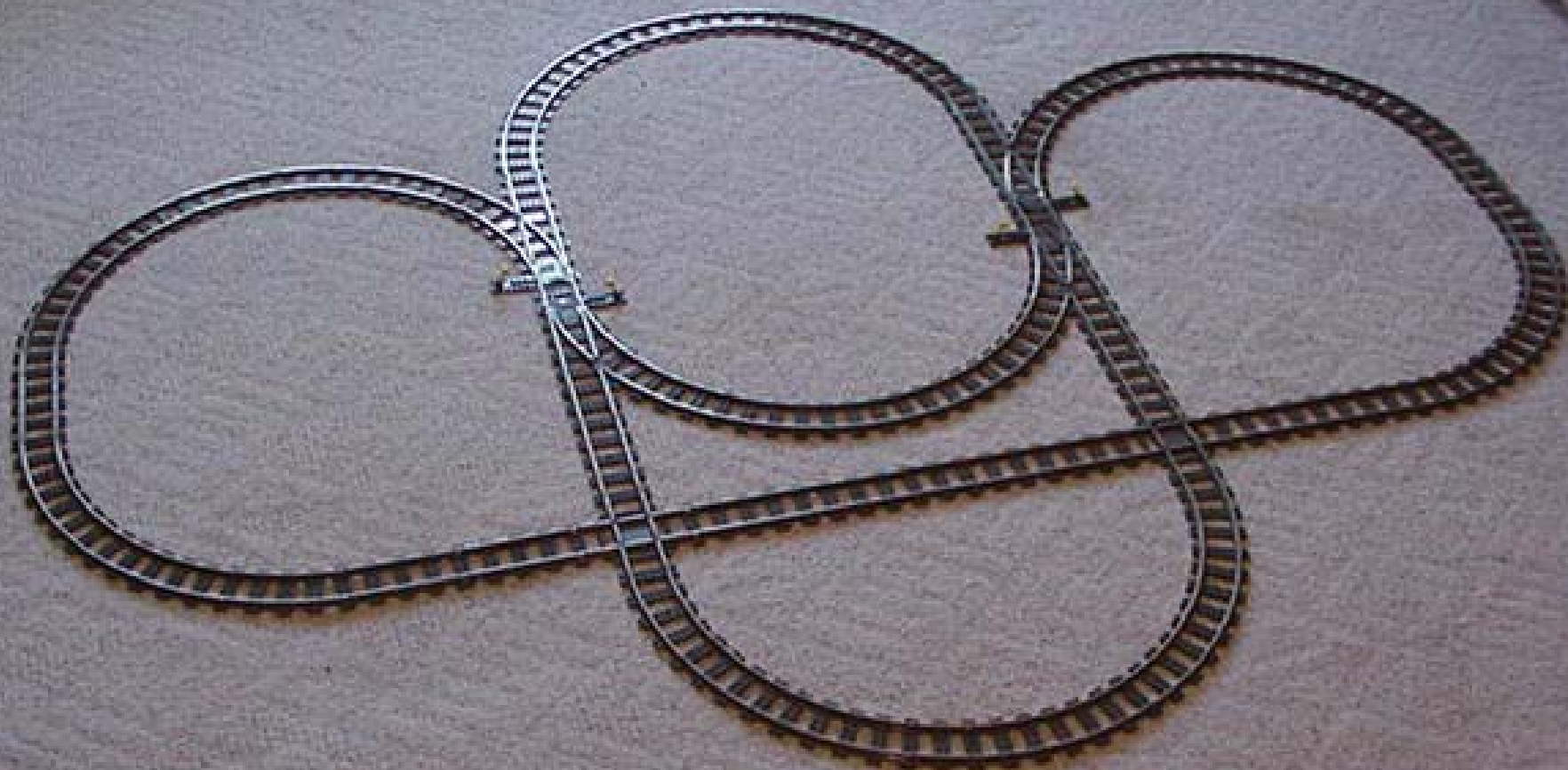
Ben Fleskes: Design Study: New
Track Geometry

Another option

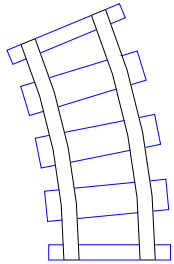


Ben Fleskes: Design Study: New
Track Geometry

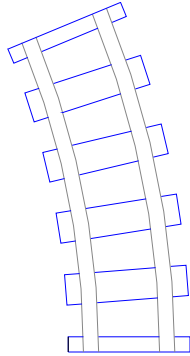
Or a real layout



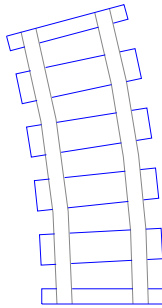
What about curves?



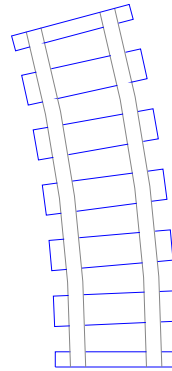
40S R 22.5 deg curve



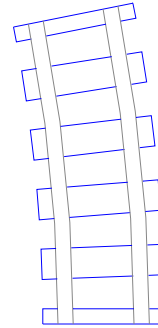
56S R 22.5 deg curve



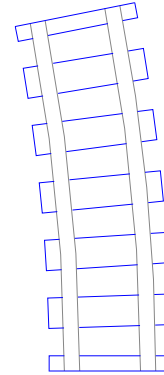
72S R 15 deg curve



88S R 15 deg curve



104S R 11.25 deg curve



120S R 11.25 deg curve

What about a crossing?

Summary

- Track mods can give you
 - Any length track you want
 - Very flexible switch track
- Track mods can't give you
 - Different radius tracks
 - No clear solution for another crossing