



# Palmetto Division Clinic November 10, 2018

## Adding a Yard to the Pennington Junction RR

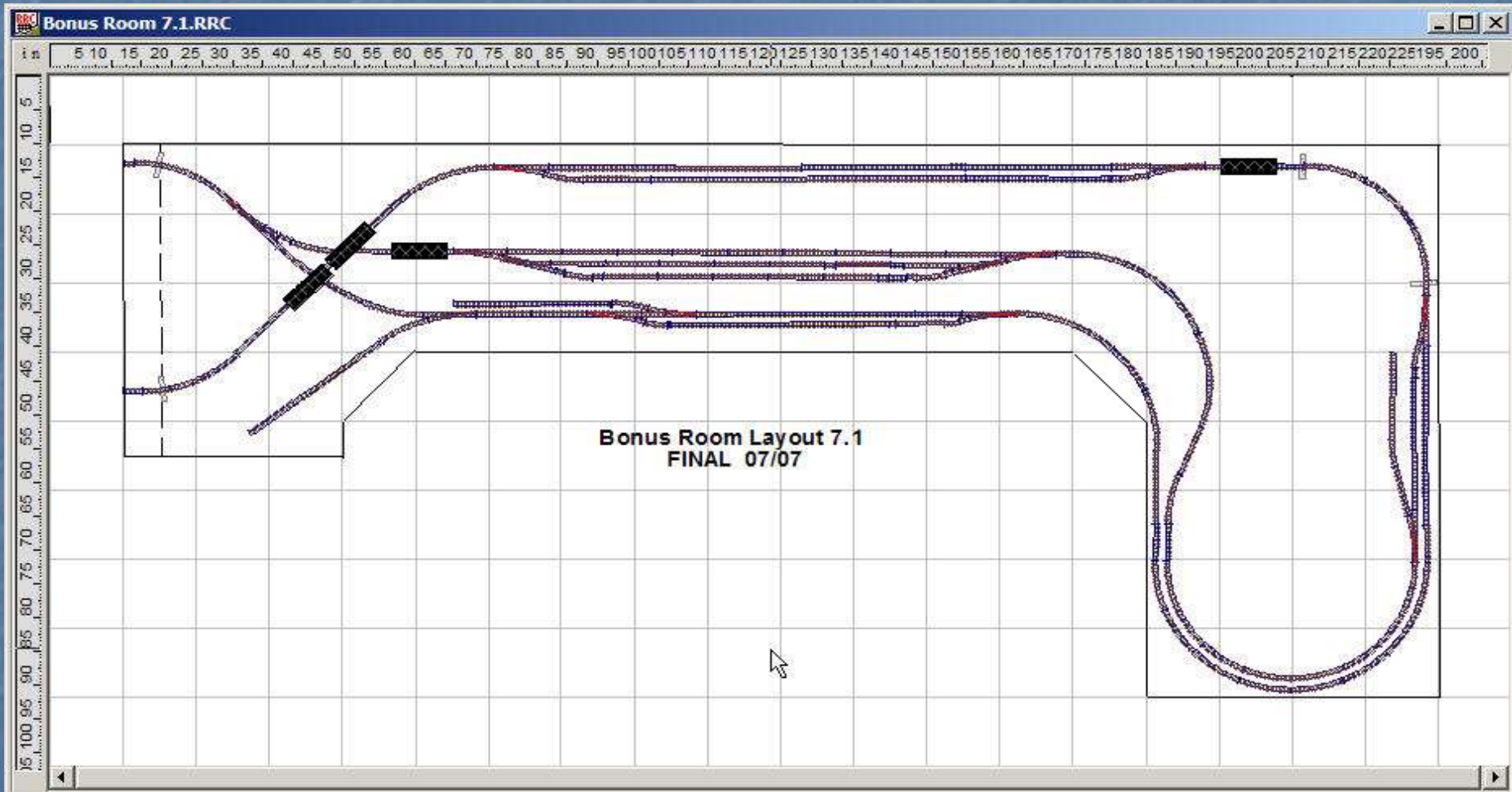
# Topics

- Background
- Planning & Design
- Building the Yard
- Constructing the Helix
- Conclusions, Tips, References



# Background

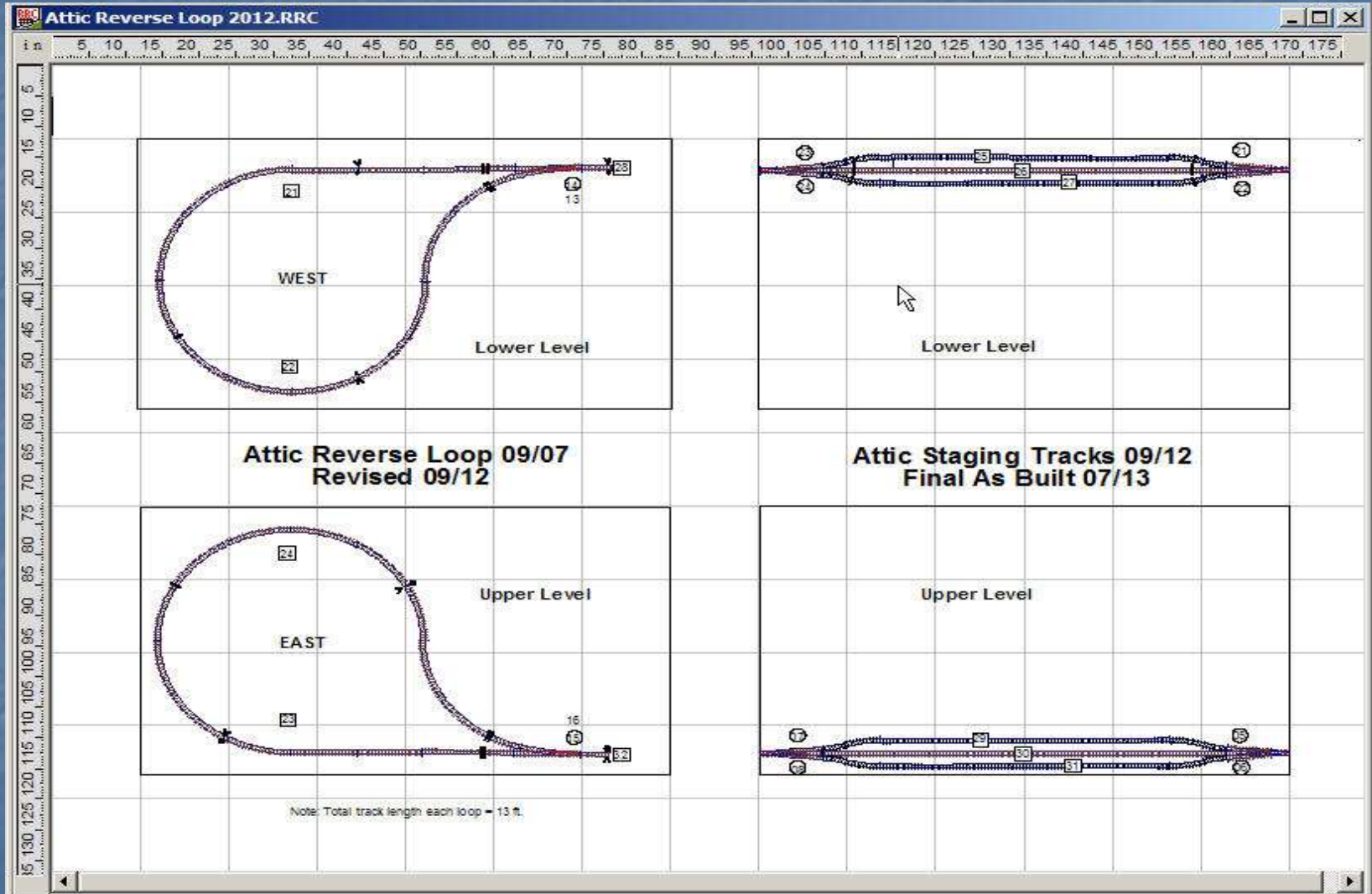
# Existing Layout Track Plan







# Attic Hidden Track Plan



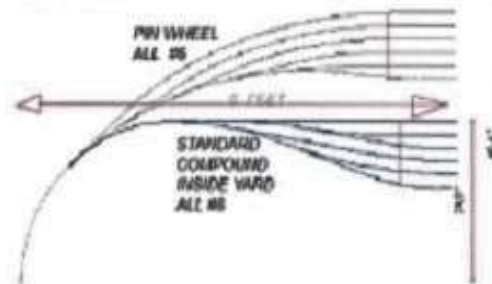


# Planning & Design

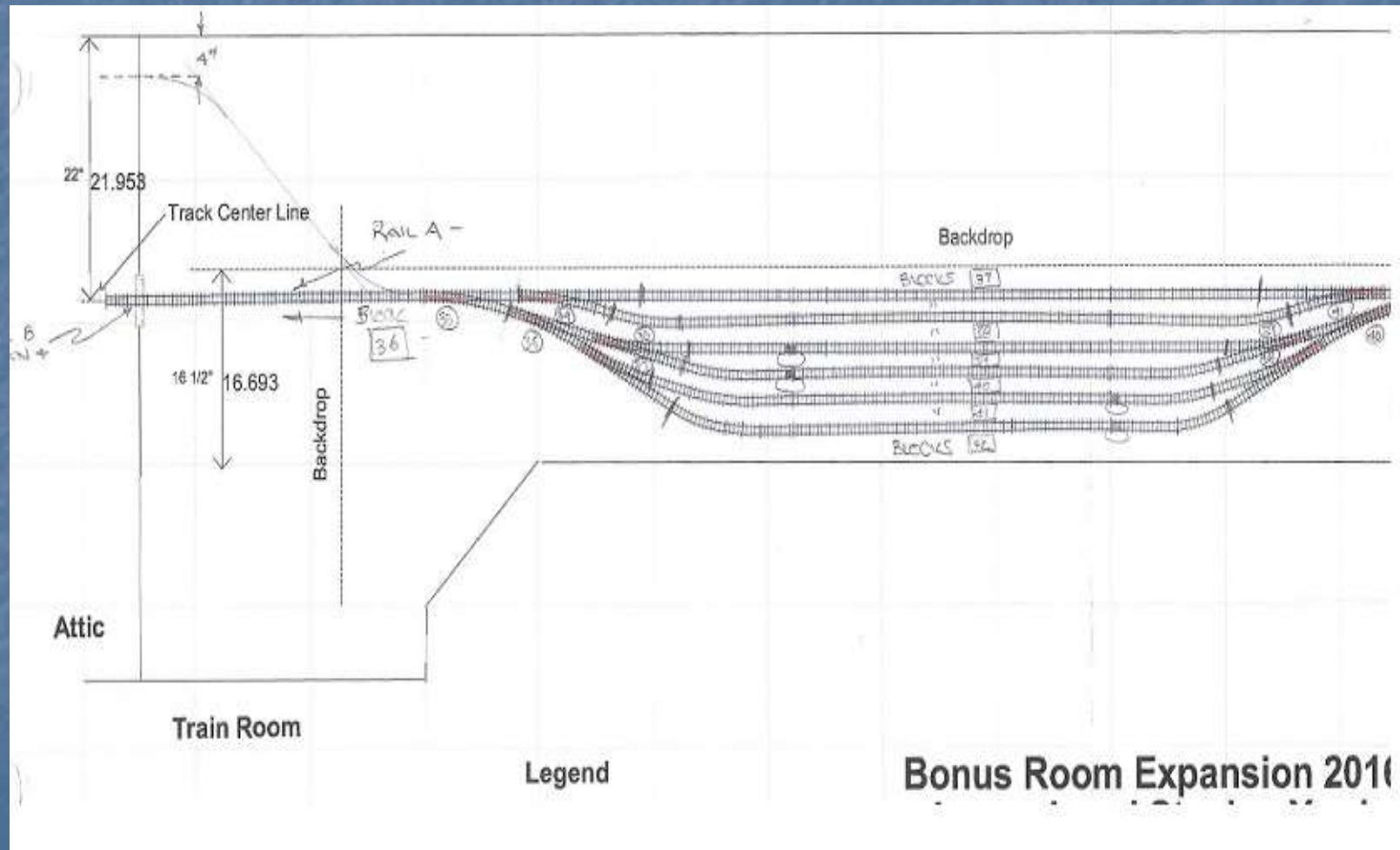


# Yard Ladders

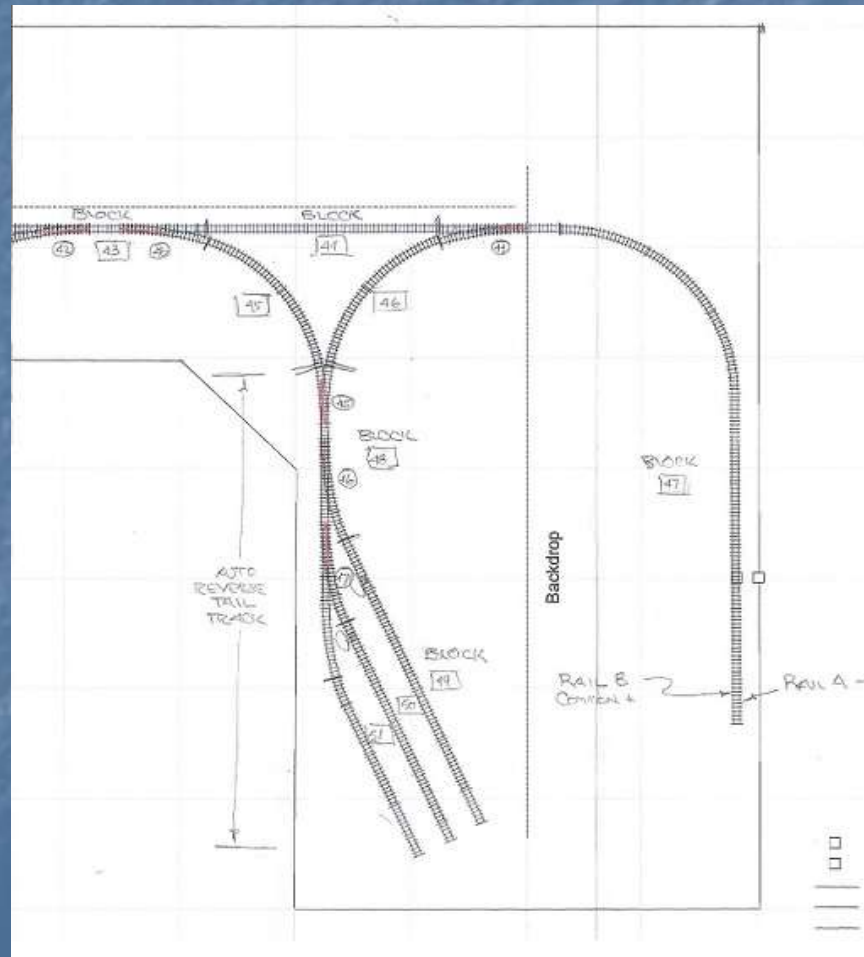
examples of yard-ladders:



# Yard Plan

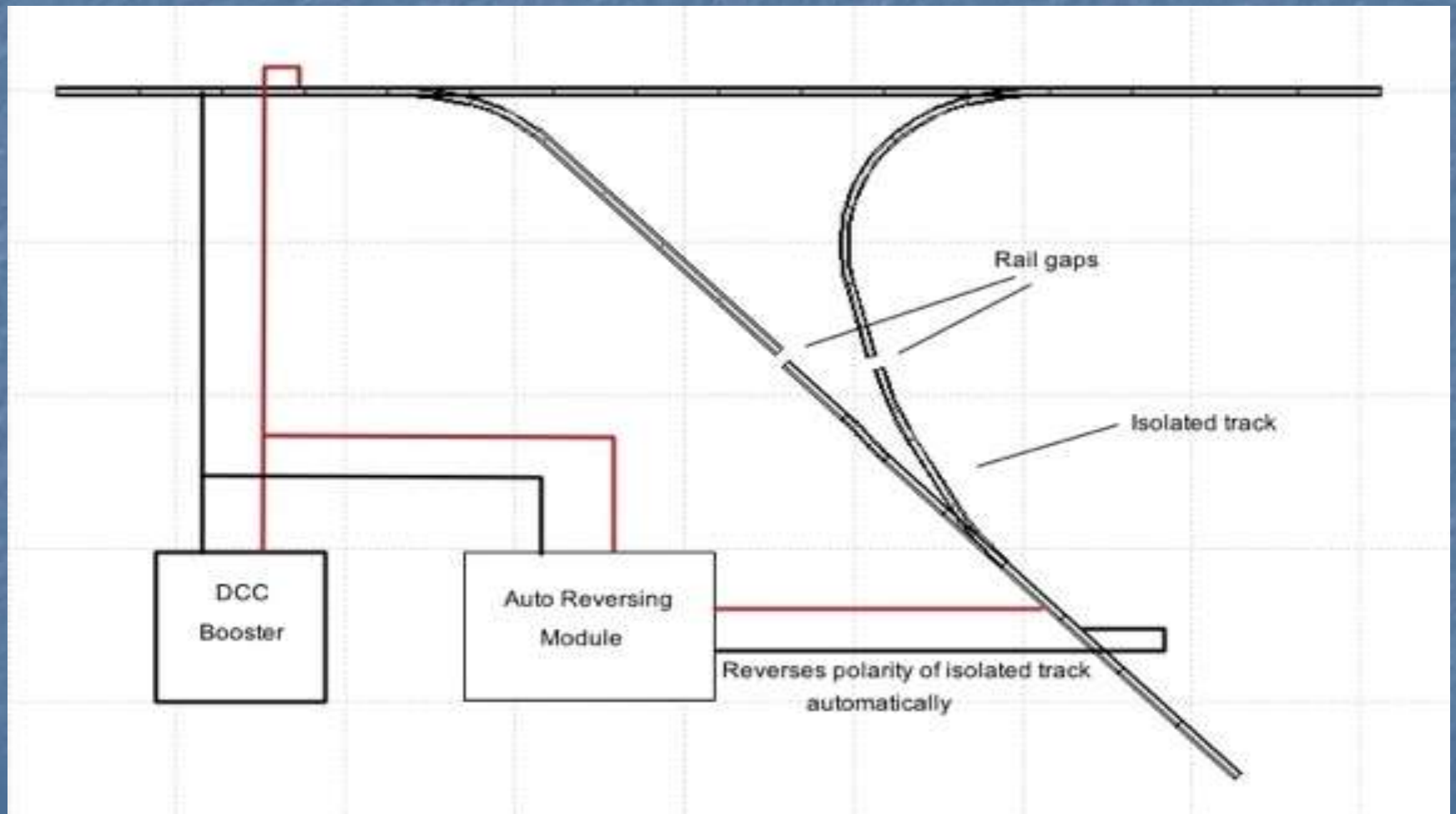


# Reversing Wye





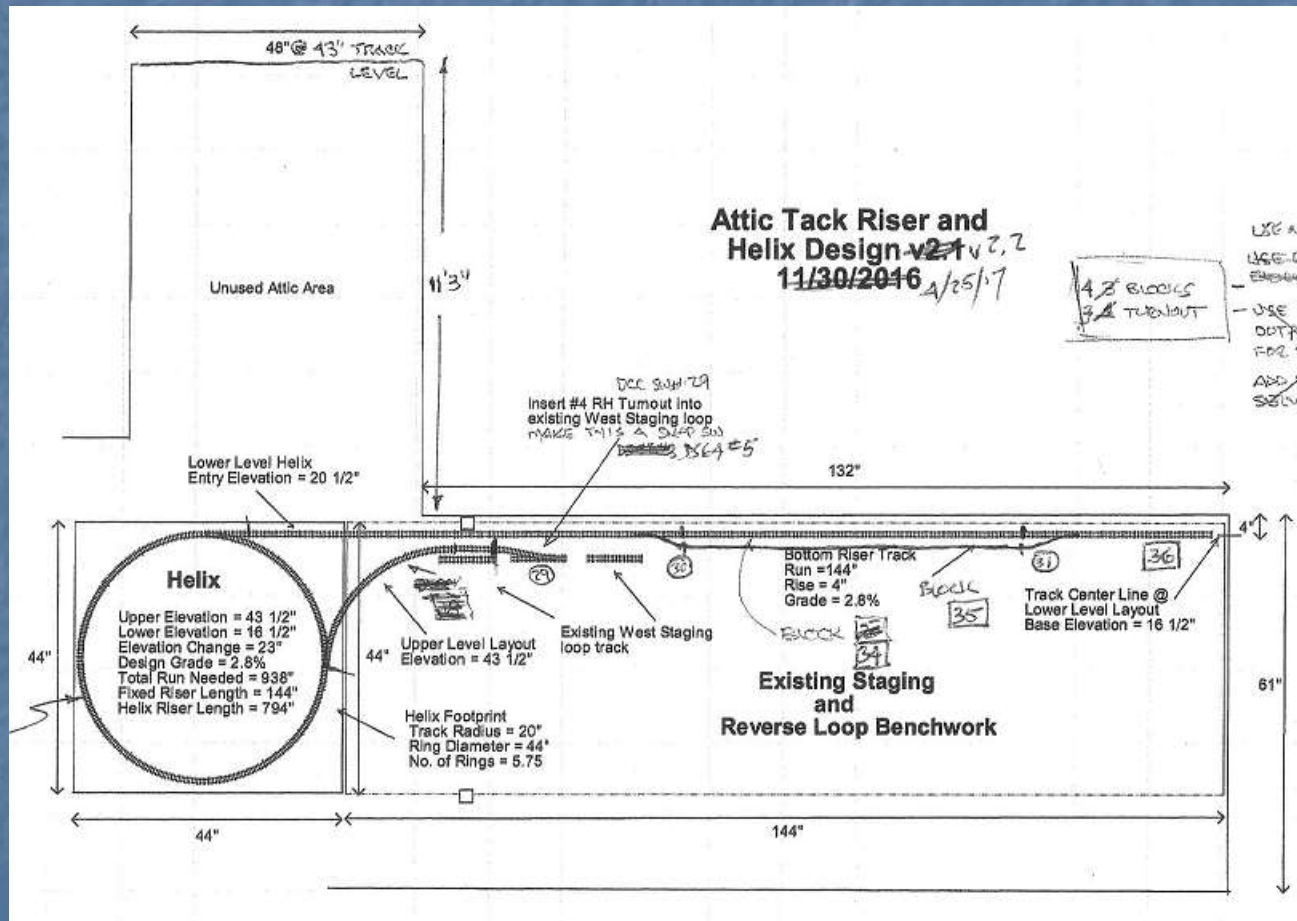
# Auto Reversing



# Typical Model Railroad Helix

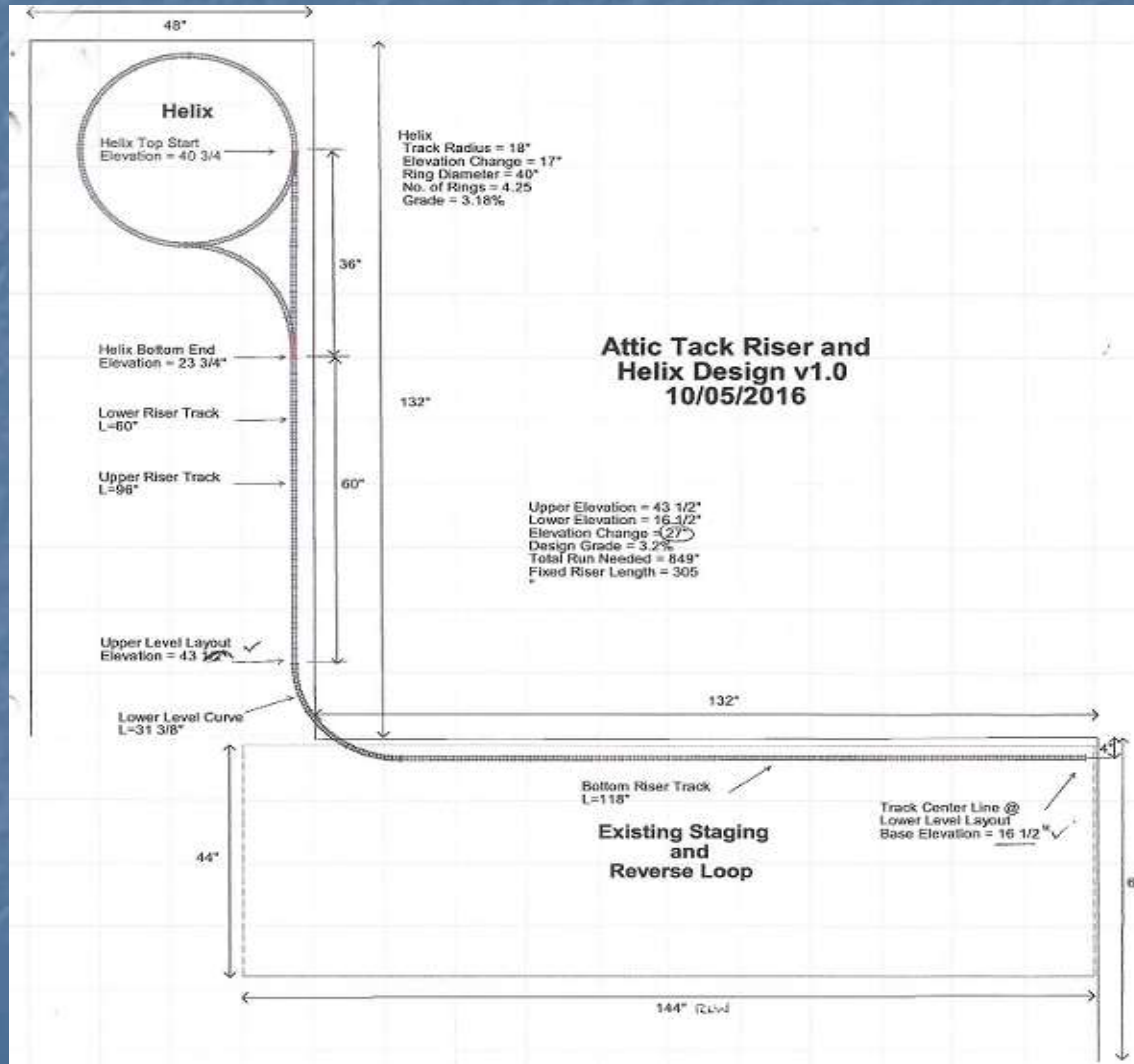


# Helix - Planned





# Helix - Actual



# Doing The Math

## HELIX CALCULATOR

**A.** Enter Track Radius (inches)

from 4 to 100

**B.** Enter greatest height of train (inches)

from .5 to 50

**C.** Enter total height to climb (inches)

from 3 to 96

**D.** Enter width of ring (inches)

from 1 to 24

**E.** Select segments per layer (a whole number)

from 2 to 8\*

Calculate

Reset

**F.** Ring diameter is

inches

**G.** Vertical distance between rings is

inches between rings including 1/2" thickness of ring

**H.** Ring circumference is

inches per each ring

**I.** Grade is

%

**J.** Rings needed is

rings

**K.** Length each segment (based on segments in E)

inches

**L.** Total material length is

inches.

**M.** Total Material Required

sq.ft.

# Doing The Math

## HELIX CALCULATOR

- A.** Enter Track Radius (inches)  from 4 to 100
- B.** Enter greatest height of train (inches)  from .5 to 50
- C.** Enter total height to climb (inches)  from 3 to 96
- D.** Enter width of ring (inches)  from 1 to 24
- E.** Select segments per layer (a whole number)  from 2 to 8\*

- F.** Ring diameter is  inches
- G.** Vertical distance between rings is  inches between rings including 1/2" thickness of ring
- H.** Ring circumference is  inches per each ring
- I.** Grade is  %
- J.** Rings needed is  rings
- K.** Length each segment (based on segments in E)  inches
- L.** Total material length is  inches.
- M.** Total Material Required  sq.ft.



# Building the Yard







































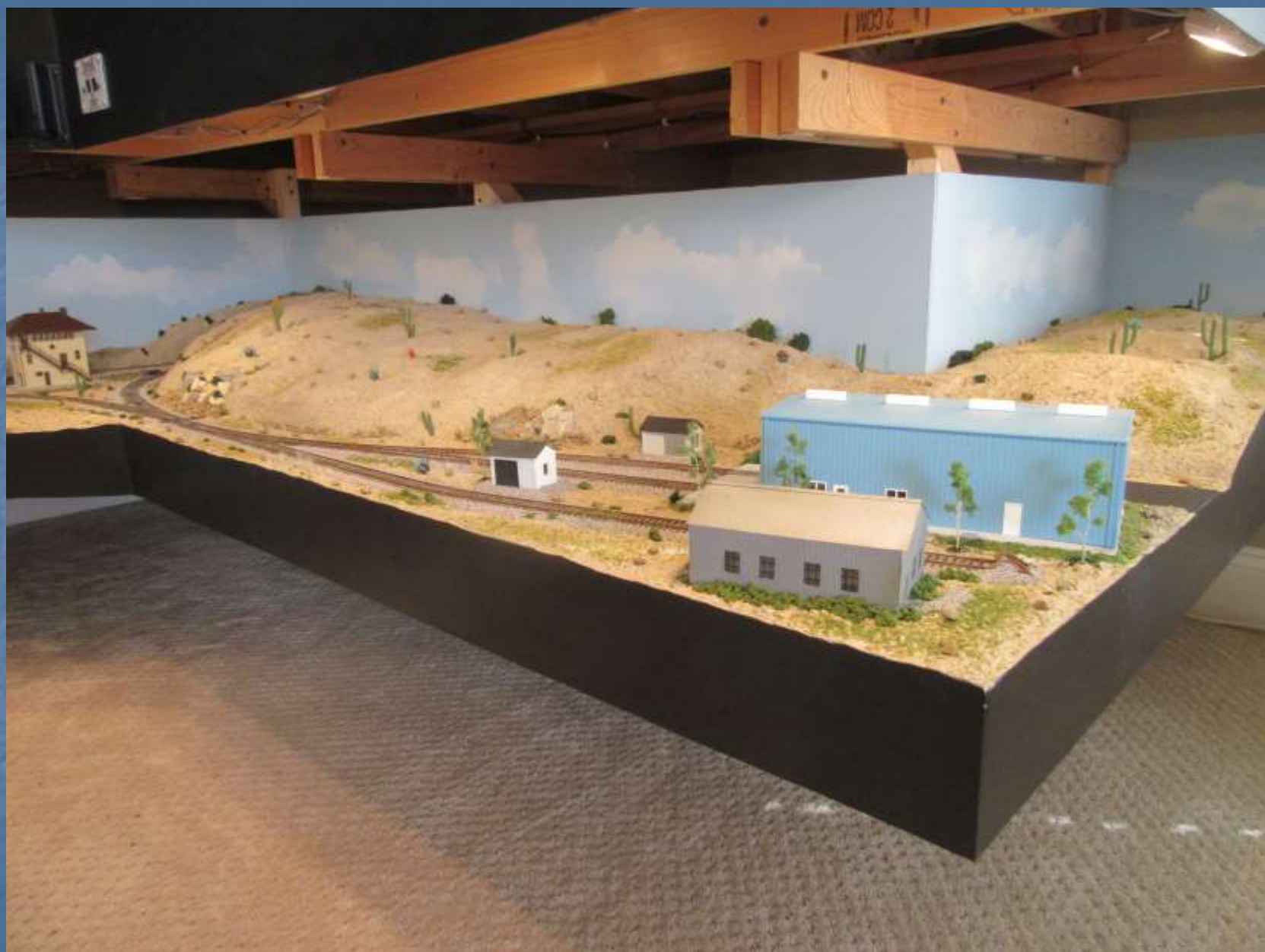
























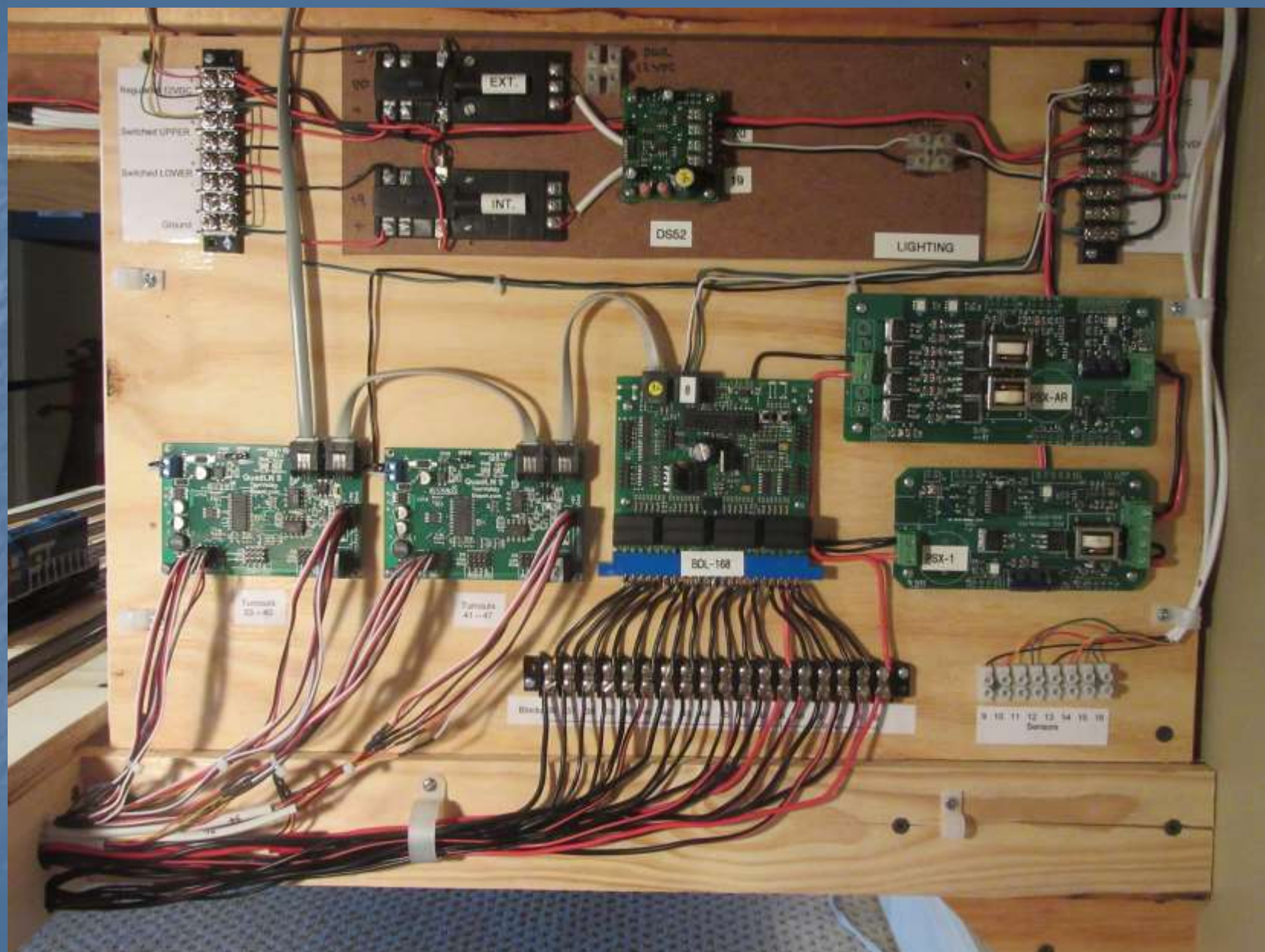














# Constructing the Helix









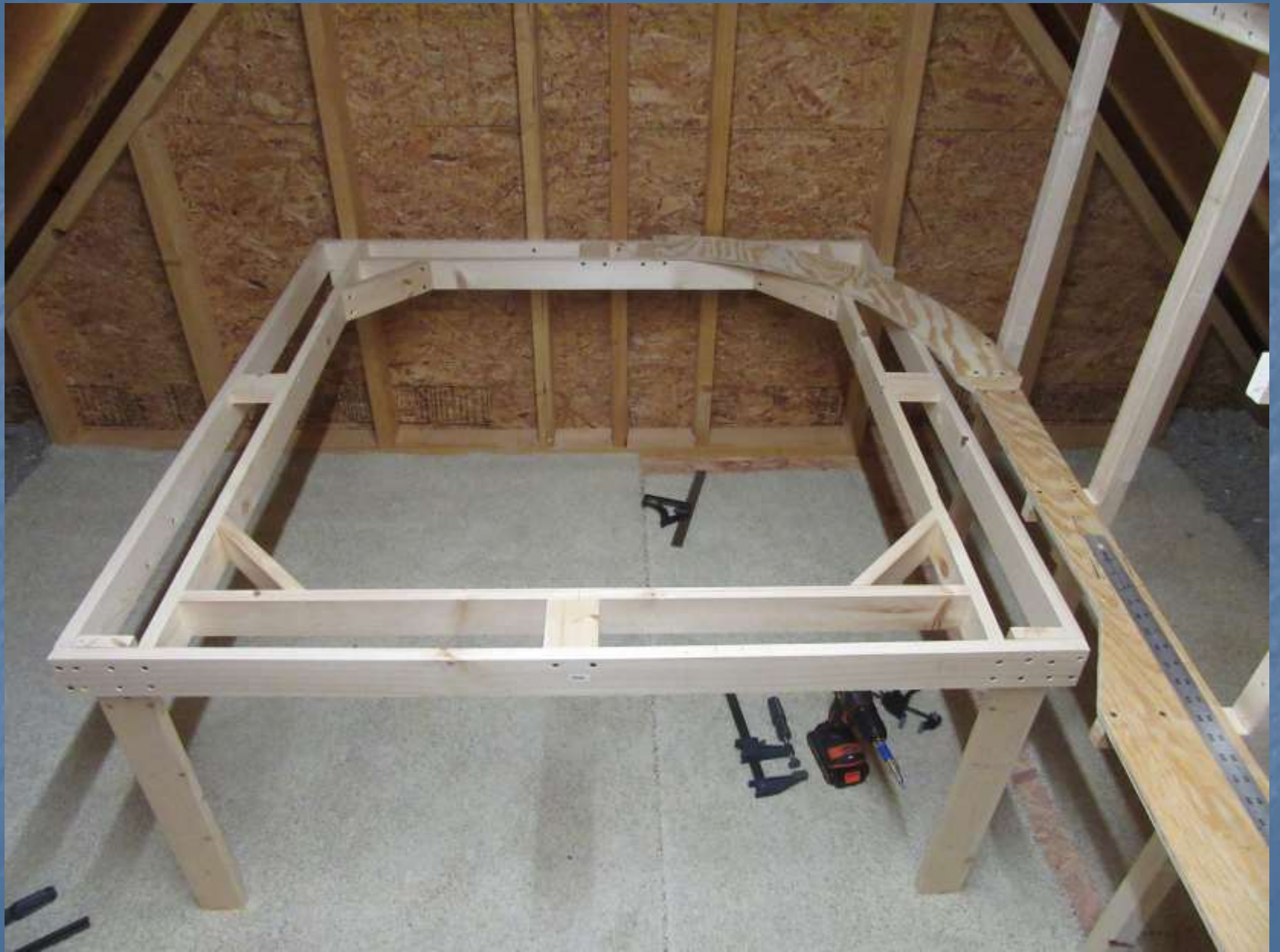












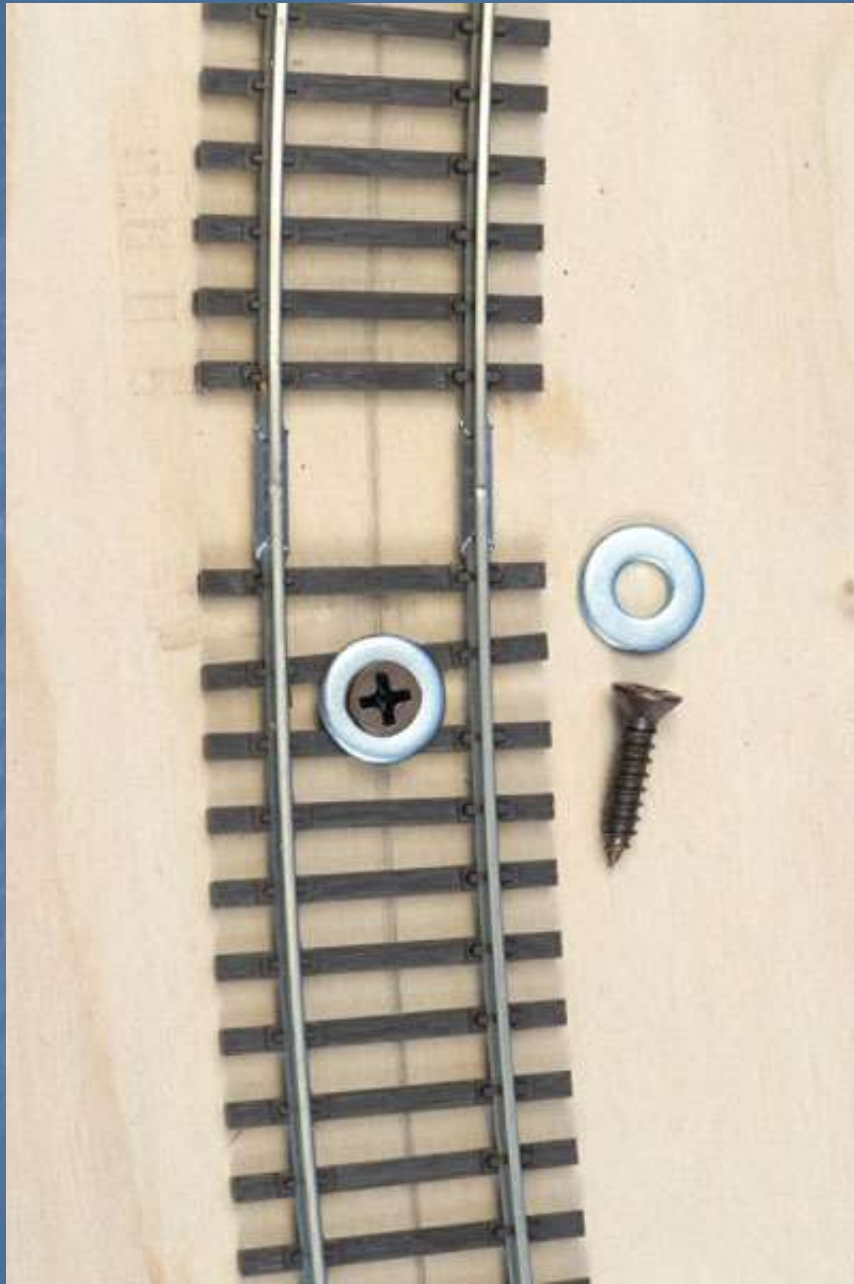






























# Conclusions, Tips, References



# Keys to Success

- Don't be afraid to experiment
- Use jigs & templates
- Test as you go – track work, electrical, turnouts, etc.
- Take advantage of standard size materials
- Check dimensions & clearances carefully
- Use good benchwork construction methods

# References

A Guide to Helix and Staging Design

By Doug Gurin

MRR Magazine September 2010

Jim Hediger's Ohio Southern RR

Construct a Simple and Reliable Helix

Jeff Johnson

MRR Magazine April 2008

How to Build a Helix

Jim Hediger

MRR Special Issue 11/2010

Helix Design Calculator

[www.modelbuidings.org](http://www.modelbuidings.org)





The End