

Housatonic Railroad – Evolution of a Layout Design, 2012 Edition



By Craig Bisgeier

Housatonic Railroad – Evolution of a Layout Design

I have been planning to model the Housatonic for almost 20 years in one form or another

Original plan was a 1950's freelance design –
Canaan, CT to Pittsfield, MA

Plan included many 'Newbie' layout features:

- Double-deck with narrow aisles
- Direction-reversing Helix to connect levels
- 10 Lbs. layout in 5 Lb. Bag – too much

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In 1989 I had a “Crisis of Faith” about stricter prototype modeling – I was for it

- Changed eras to 1892
- Scrapped old plan and started anew
- Planned to make a better, not necessarily bigger model railroad

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New 1890's plan Givens and Druthers:

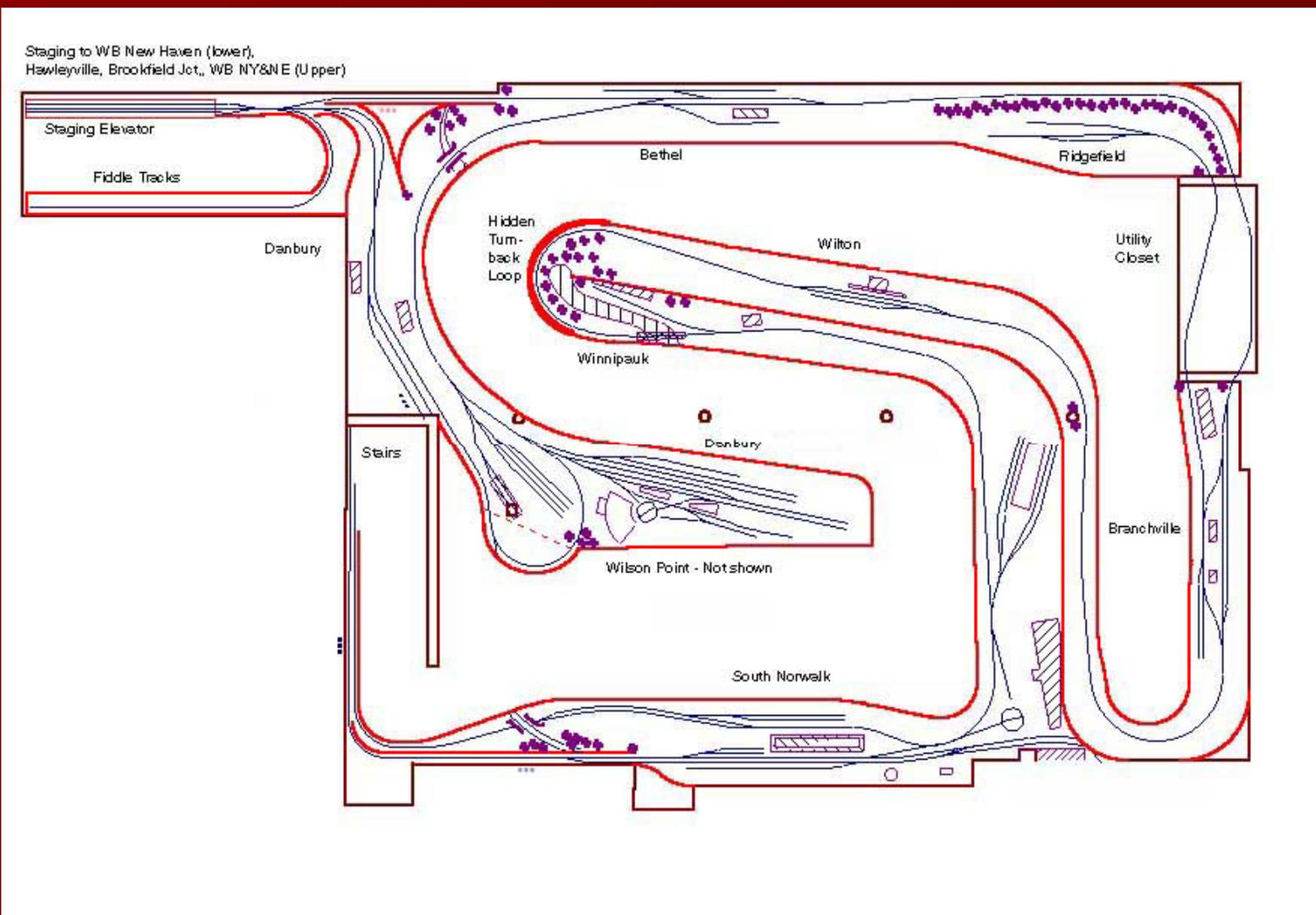
- Model South Norwalk, CT to Danbury, CT
- P2P plan, around walls – 2 peninsulas
- WIDE aisles an absolute MUST
- Single deck – easier to build and maintain
- Comfortable to work around and operate in
- Historically significant location and operation

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New 1890's plan Givens and Druthers:

- Include rail-marine operation
- Strong Fidelity to Prototype, but...
- Operations-oriented, priority over fidelity
- New plan conceived mostly from one book –
“In the Shore Line's Shadow - the Seven Lives of
the Danbury & Norwalk Railroad” by L. Peter
Cornwall

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Using Cornwall's book had a strong influence on the layout design, being the only resource:

- New design heavy on passenger train operation, through freight
- Light industry count, mostly because of a lack of good data on local businesses

Left plenty of room between towns to provide room to work areas without interference

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Design Features – South Norwalk:

- Active interchange with New Haven RR
- Signature scene at Passenger station – team tracks, interchange tracks
- Large scene, had to flip freight house, industries to fit and not overwhelm the rest of layout

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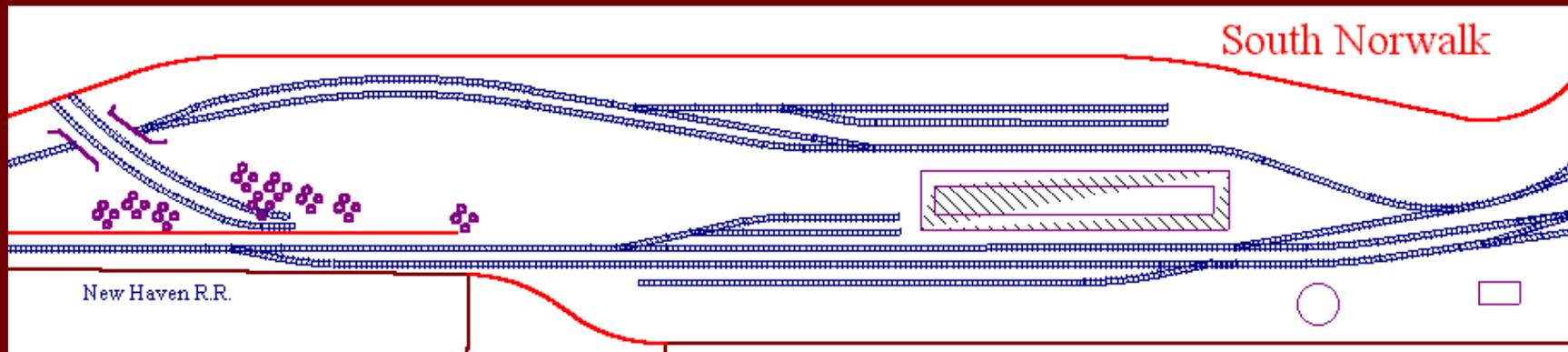
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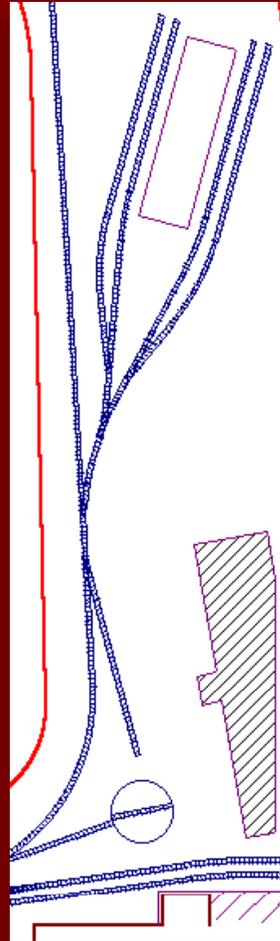
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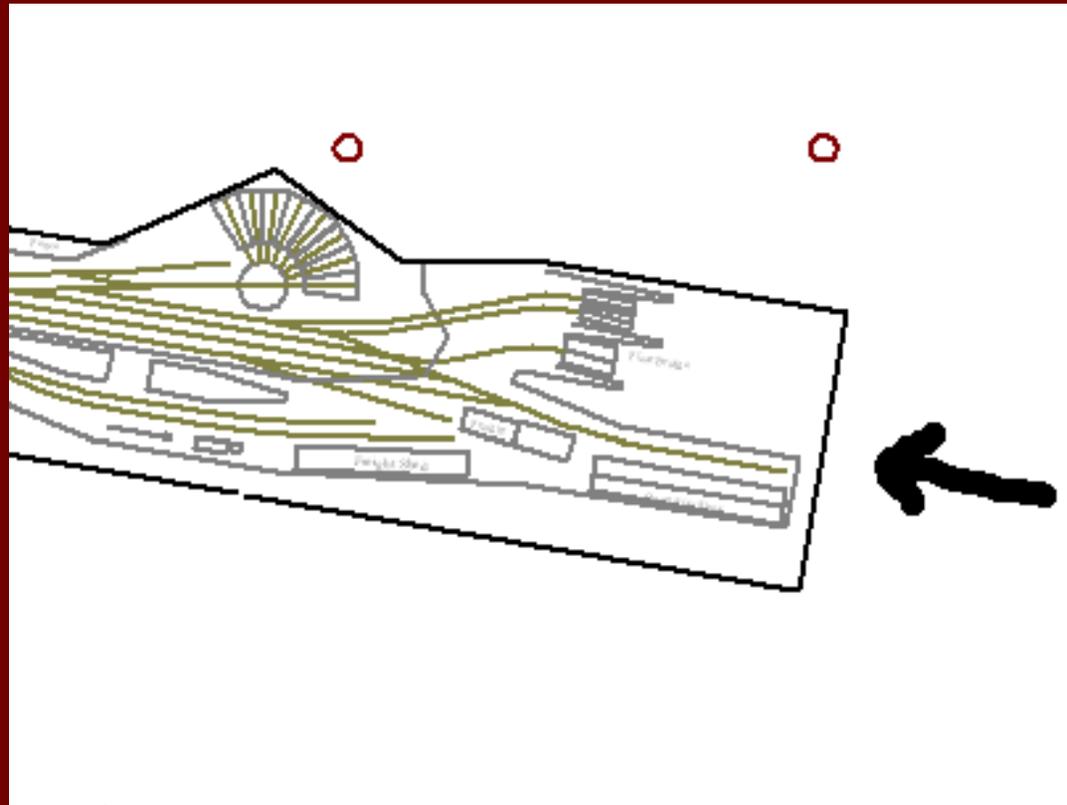


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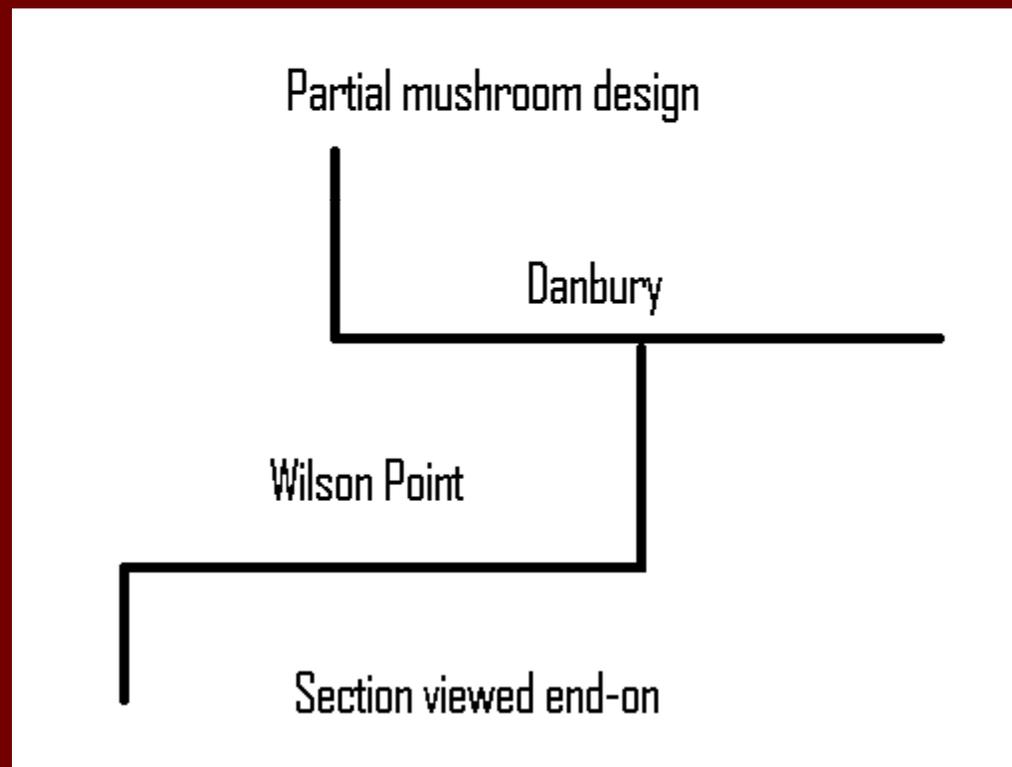
Design Features – Danbury:

- Located above Wilson Point – intended to use partial Mushroom design (Stacked decks w/ opposite side access) offset for better access
- Included fold-down loop track allowing trains to reverse and head back into staging
- No turnback loop at Wilson Point or Danbury allows peninsula to be narrower

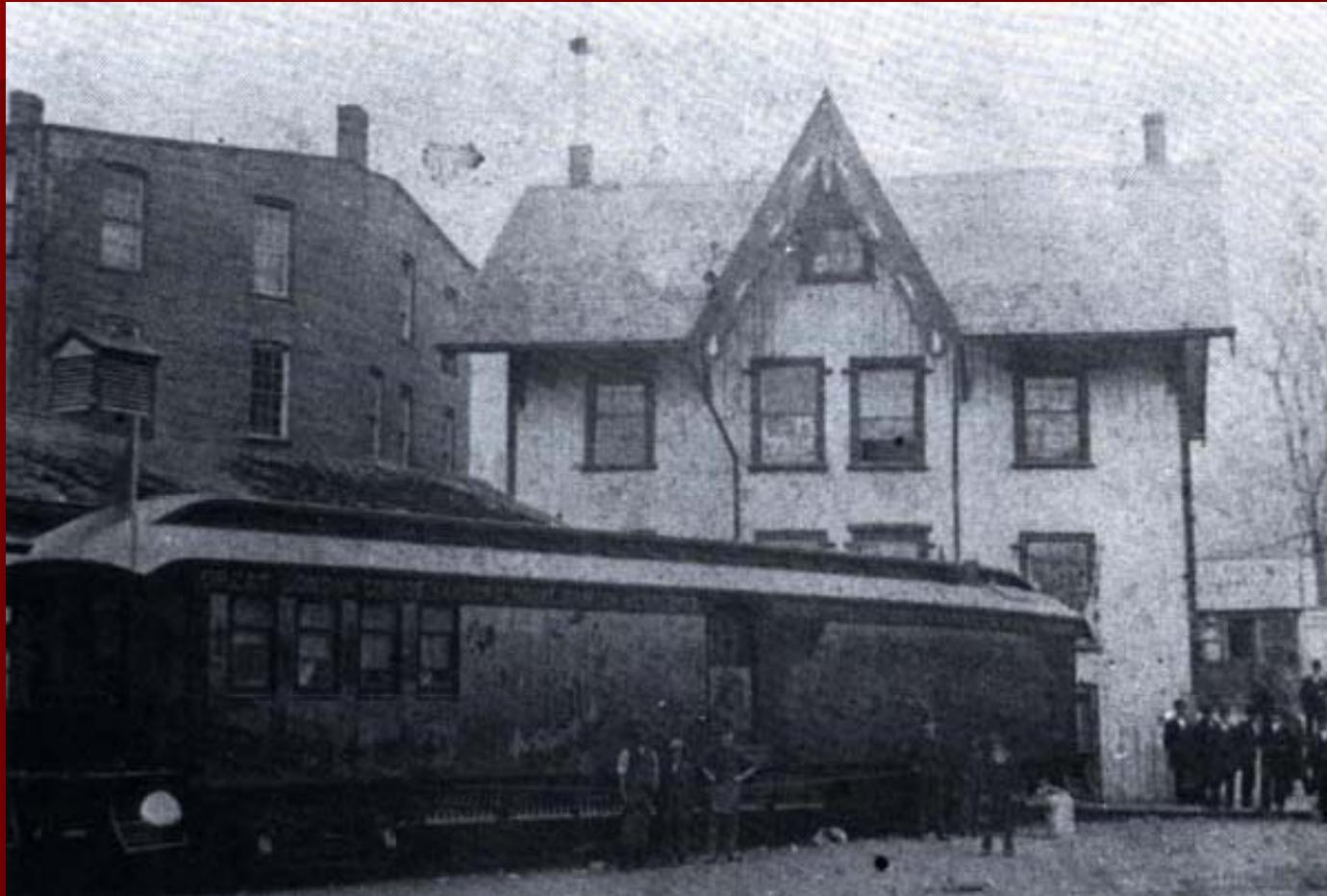
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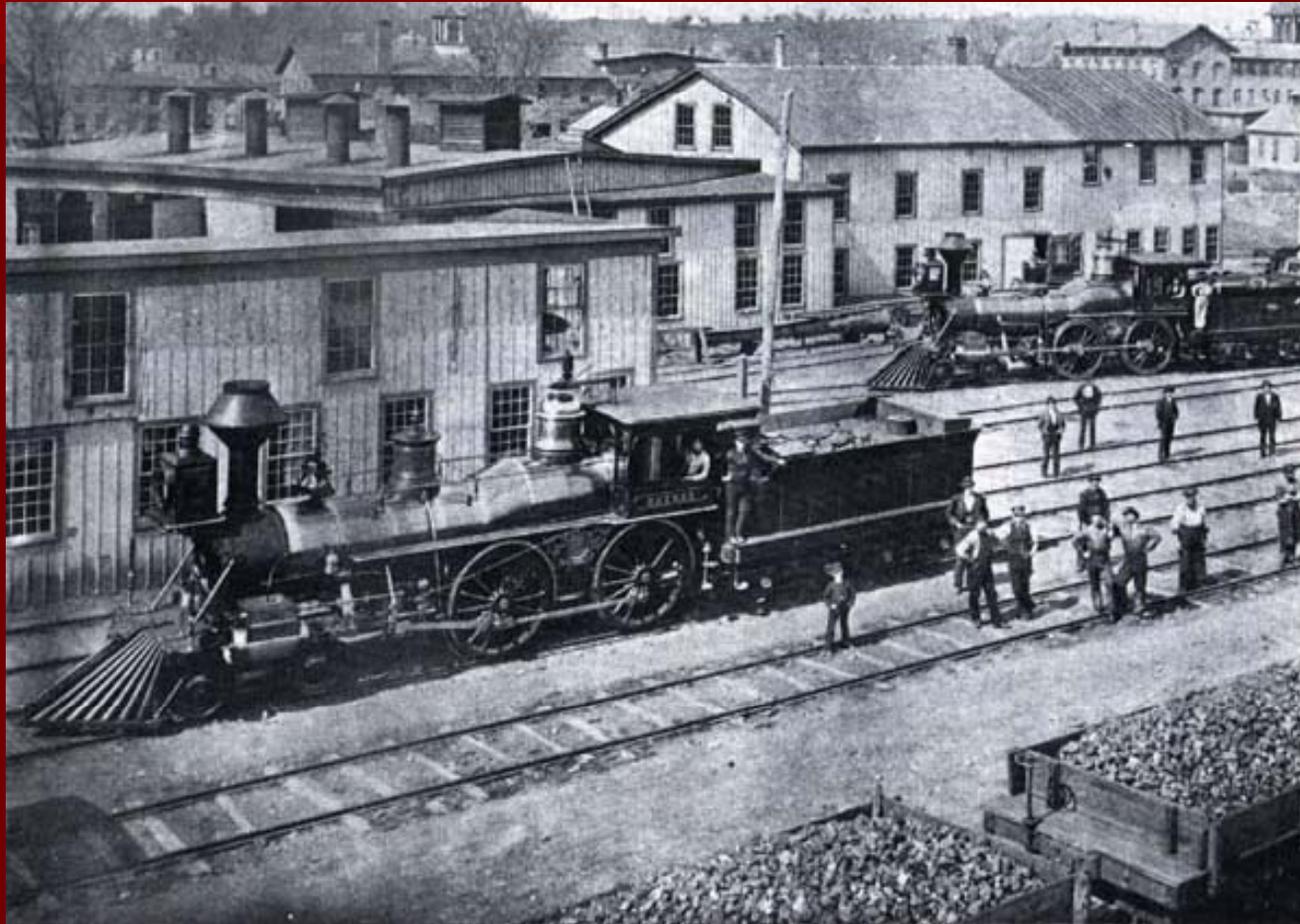
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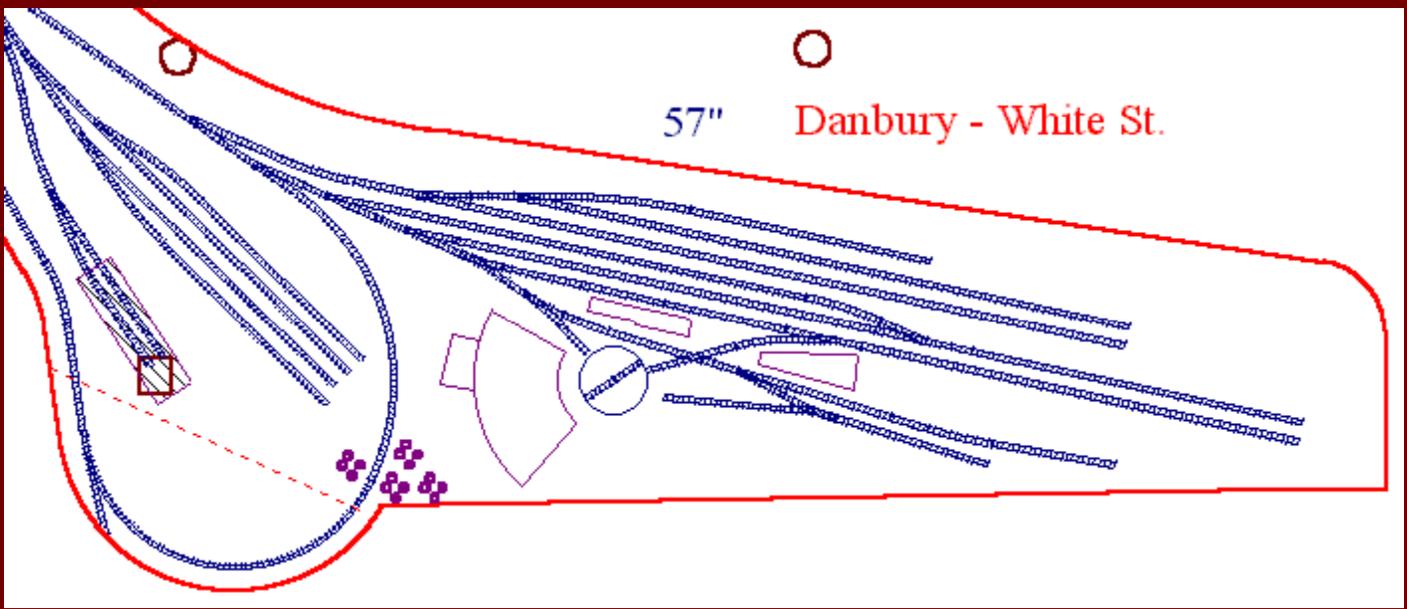
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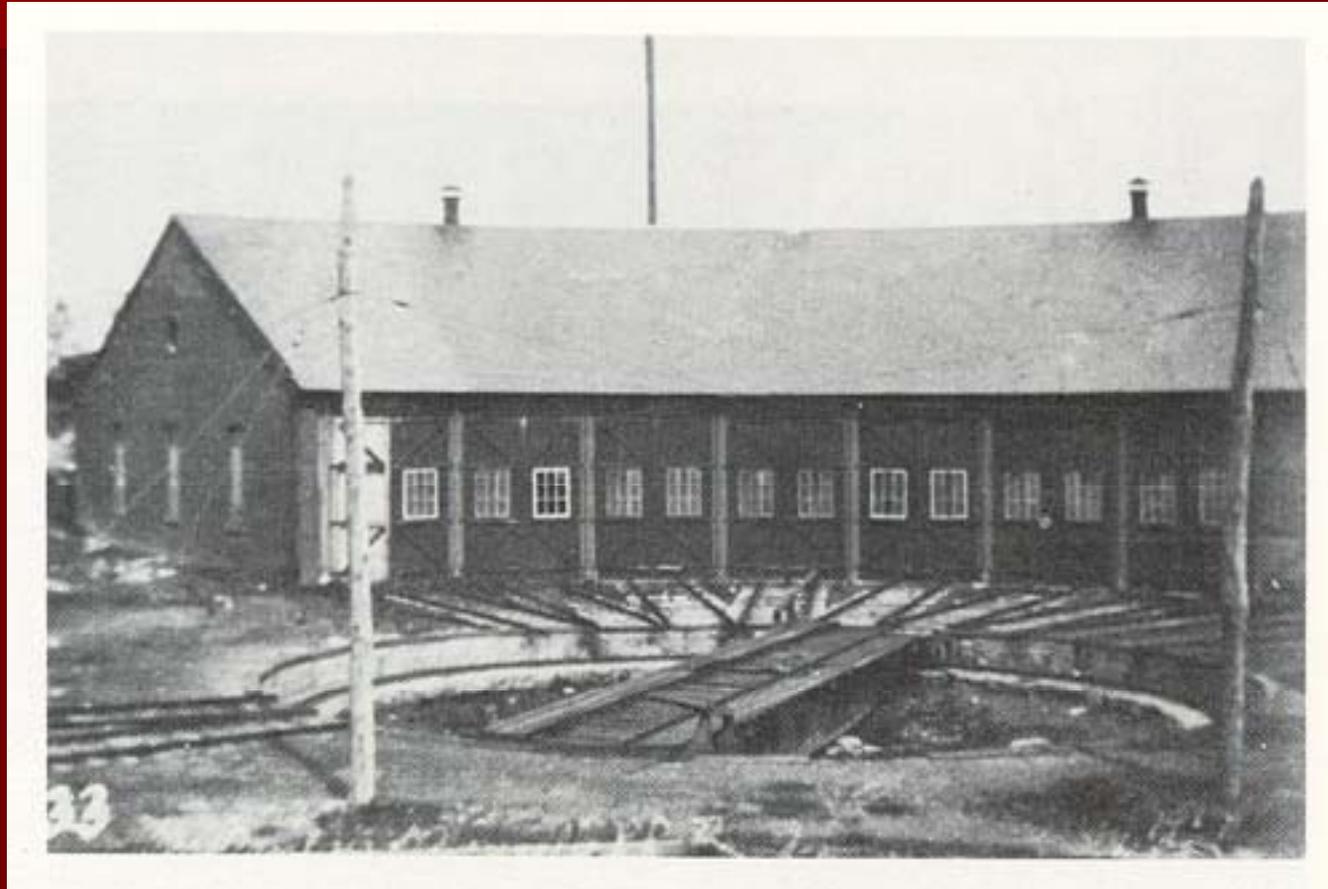


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Design Features – Wilson Point:

- Designed last among all elements because of lack of useful data
- Small yard intended only for carfloat operations
- Carfloats would act as cassette staging for south end of layout
- Bulk traffic from barges / steamships would supplement carload traffic from floats

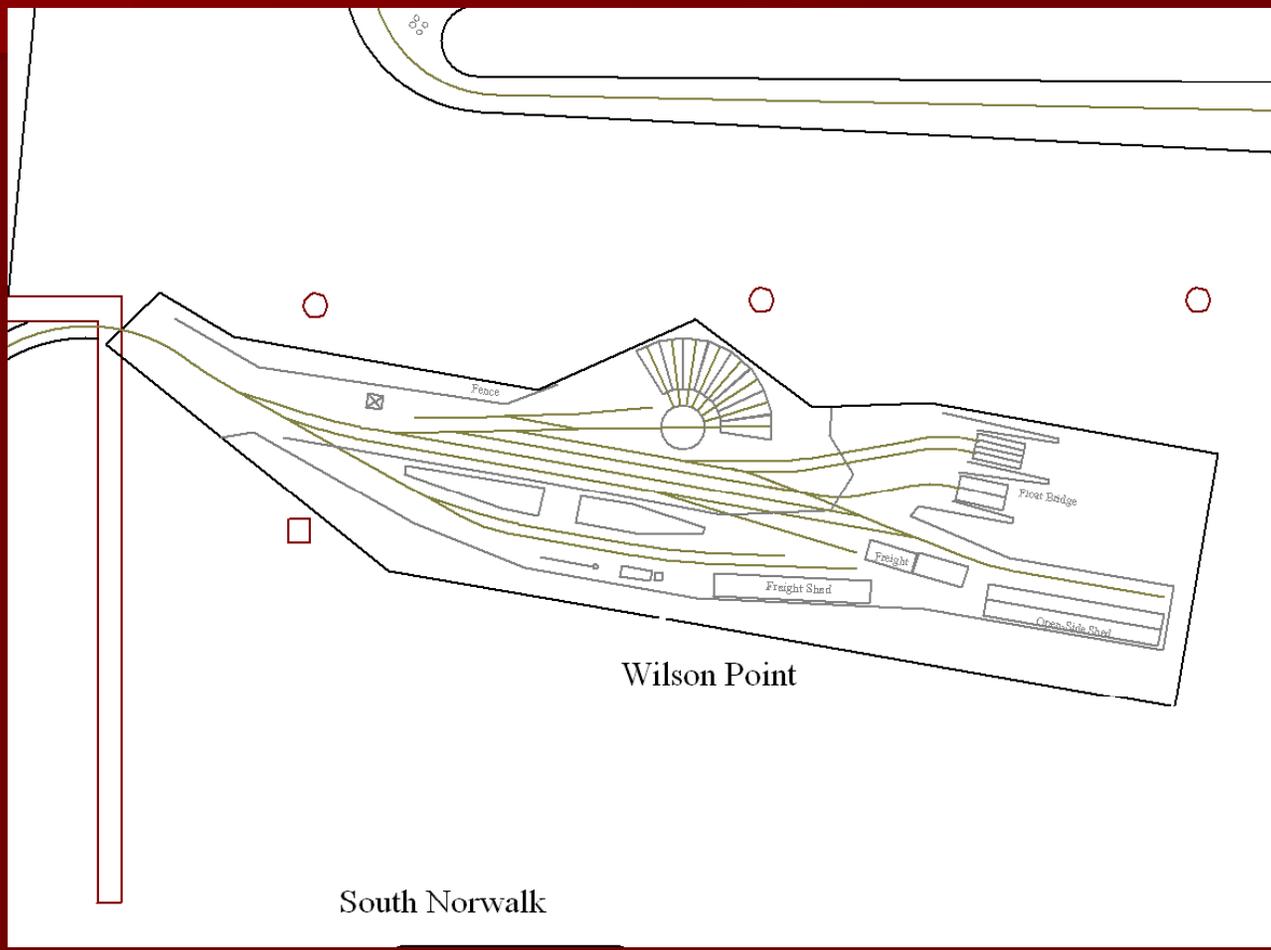
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Design Features – Staging:

Staging Elevator:

- 4 tracks wide, 7' long, 10 levels high
- 40 staging tracks all 7' in length in less than 7 square feet of floor space
- Difficult to manage but there was no other choice, had to make it work!

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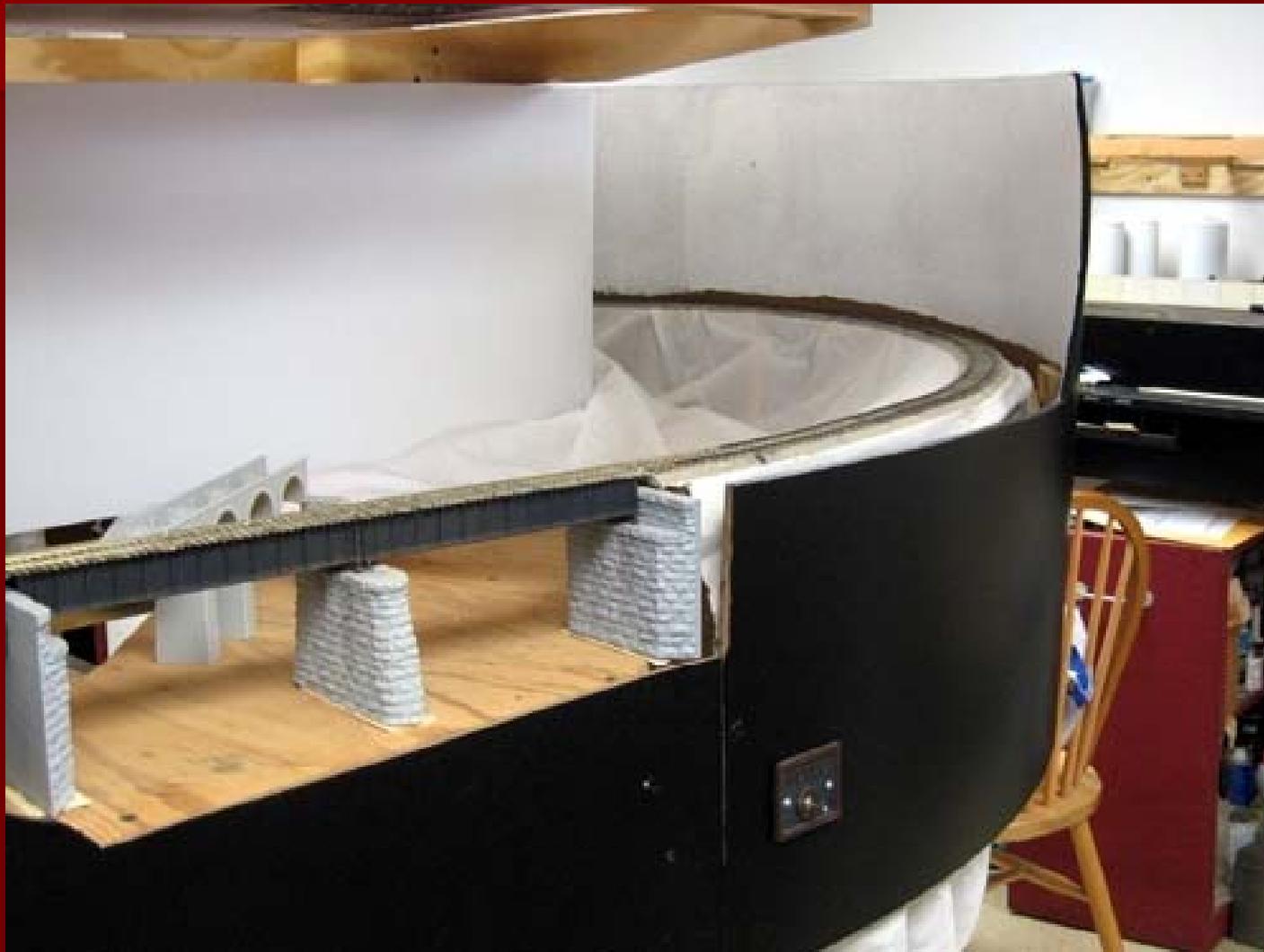
Design Features – Rest of Layout:

- Long peninsula utilized a Bellinadrop, a curved backdrop / viewblock at end of turnback loop
- Bellinadrop allowed tighter non-visible track radius – saved aisle space, solved turnback loop convention
- Most towns spaced with 2 to 2-1/2 train lengths between, allowing long runs between locations

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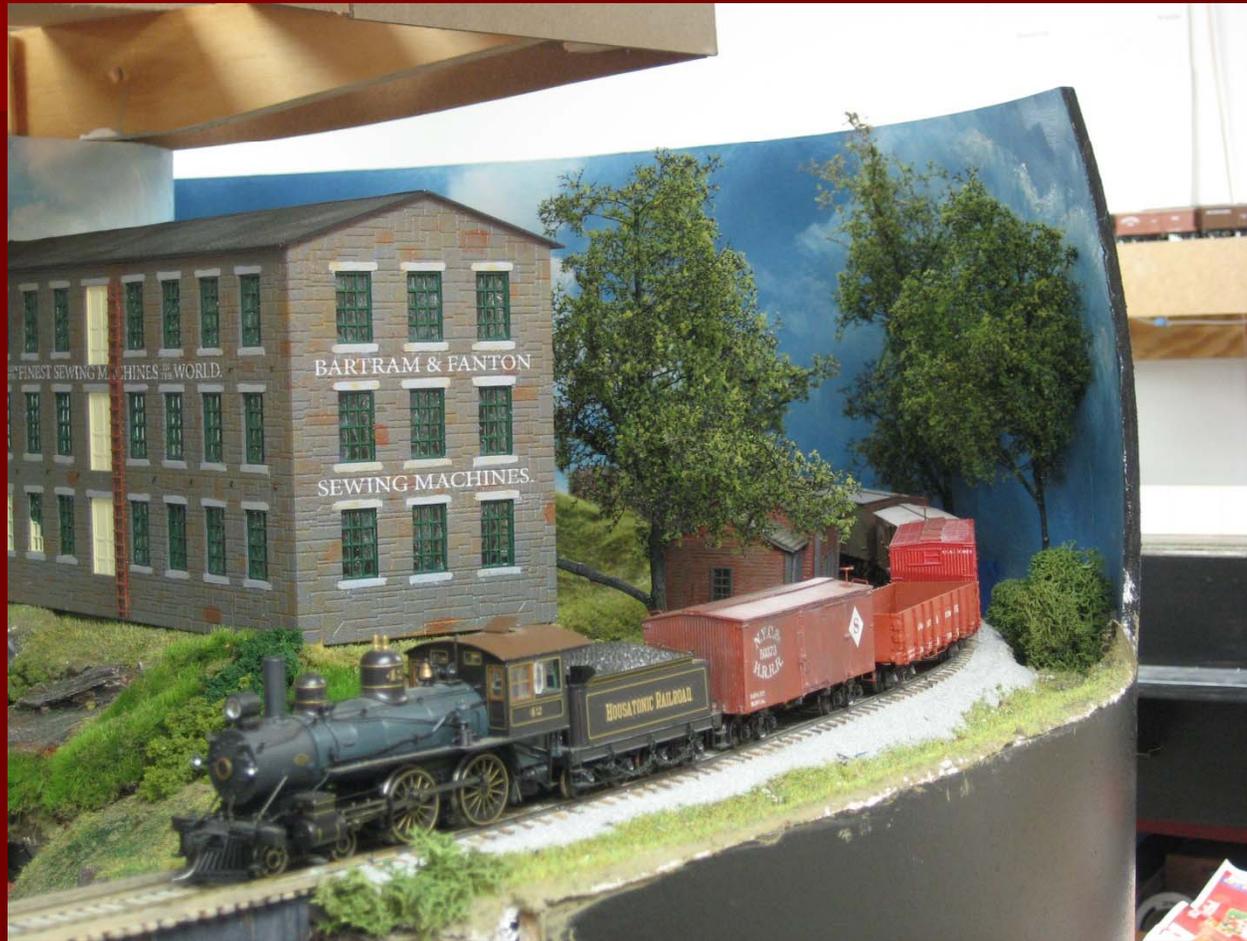
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Known problems with this 2003 layout design:

- No major yard – Adequate track / opportunities for passenger trains but not for freight
- Not much opportunity for freight operations – lack of data on local industries
- Staging issues likely to be problematic
- Emphasis on South Norwalk in terms of size relative to rest of layout an issue

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Going to War – December 2003

Decided to build Wilson Point first

- Would work as a test bed for handlaying track, testing locomotives, cassette staging, construction methods
- If concept did not work out for larger layout, could be used as a stand-alone switching layout
- Helped solve “Where to Start” dilemma

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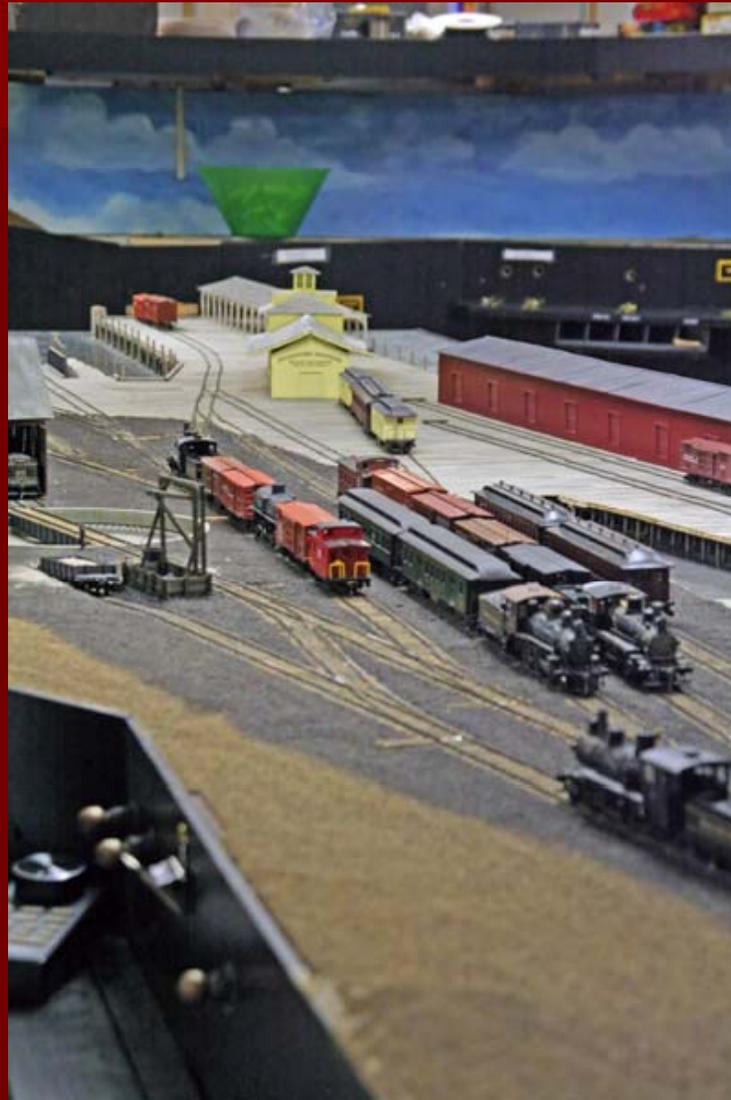
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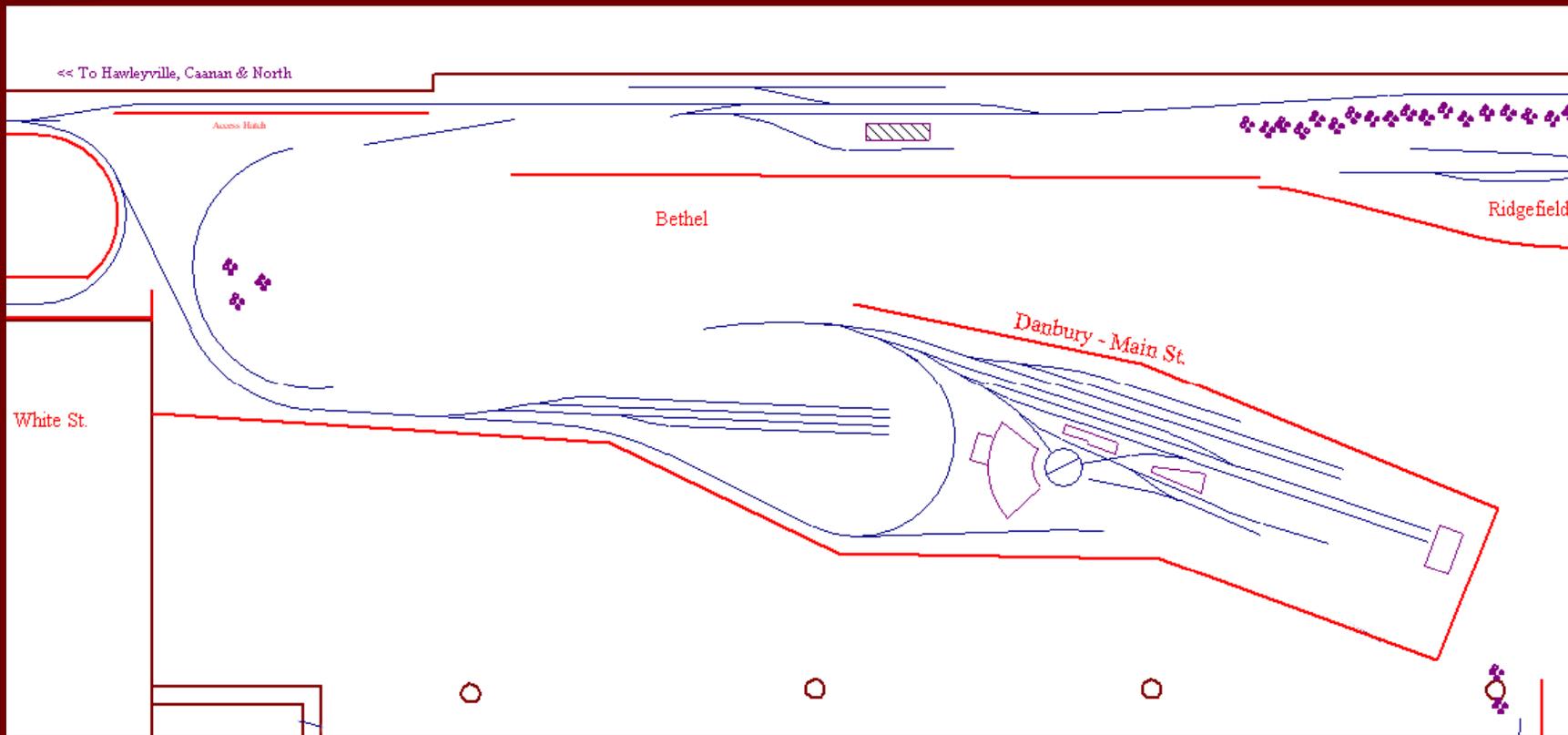
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The Rumbblings of Revolution - 2004

Crews working on Wilson Point begin insisting it cannot be covered up after all their hard work, it has become the signature scene of the layout

- Well and good, but what to do with Danbury?
- First ideas are to relocate Danbury over main peninsula instead, but it means a duckunder to get there

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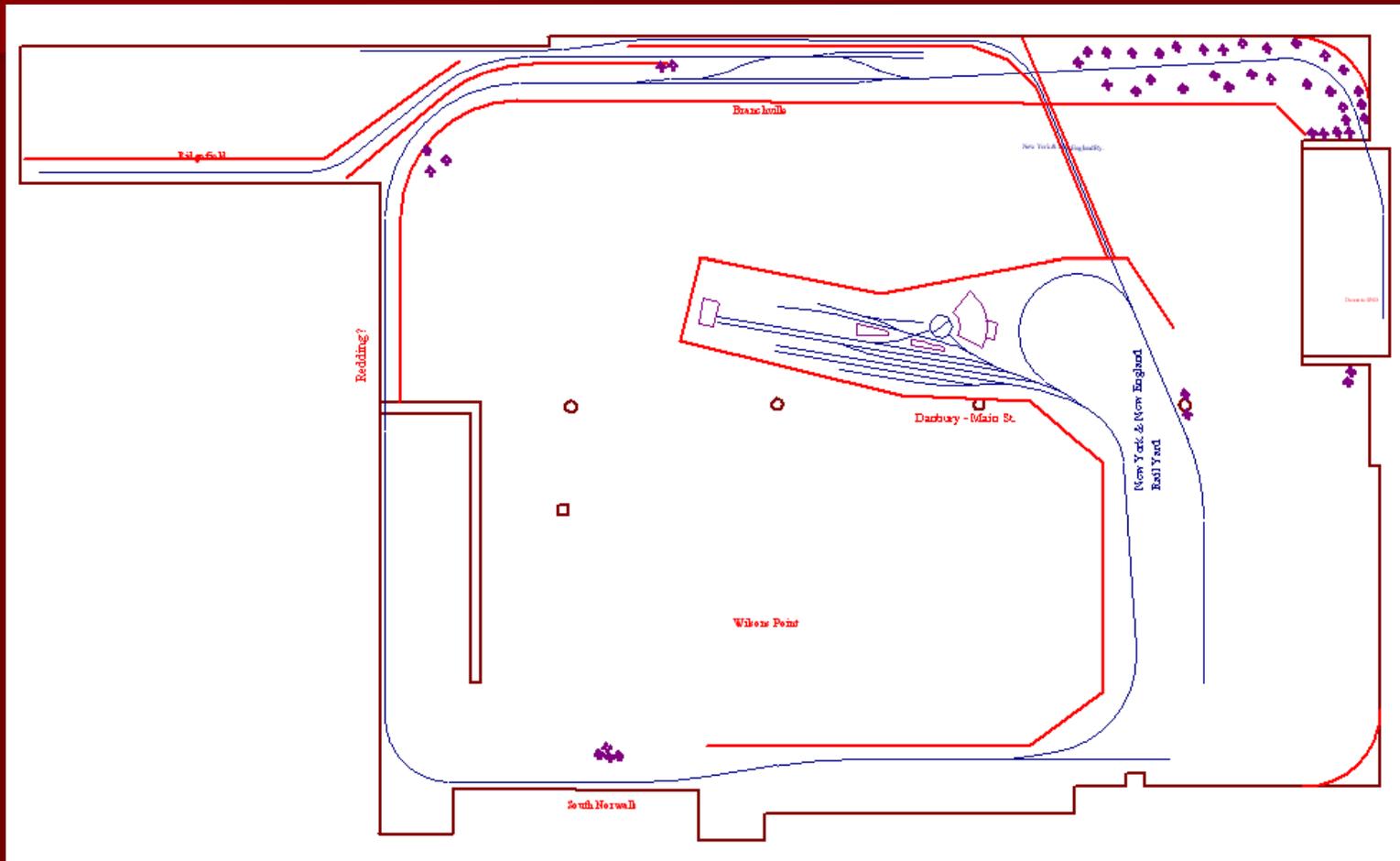


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The Rumbblings of Revolution - 2004

- Dave Ramos suggests rotate scene 180*, extend run thru stairs and around to base of long peninsula, breaking no double deck rule
- Idea adds 50' of mainline, solves duckunder issue, allows inclusion of Georgetown
- Reallocates Branchville to northwest corner, improving access to staging for branch line and sets stage for huge design change later

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The Rumbblings of Revolution - 2004

Design change presents one glaring problem that gets overlooked – How to get trains back to staging after leaving Danbury?

- Question elicits the Scarlett O'Hara quote: "I'll worry about it tomorrow!"
- *In case you were wondering, this is never a good answer.*

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The Eureka Moment – Spring 2005

A trip to the New Haven RR Archives in Storrs, CT with Henry Freeman yields a treasure trove of data from 1915 Valuation maps

- New data on industries, railroad trackage, terrain features
- As of Feb. 2009, all New Haven Val Maps from UCONN Storrs now available online!

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The Eureka Moment – Spring 2005

- New info on industries, track arrangements, operating features – in short a gold mine
- Also started to investigate other sources of industry information, like Danbury City Directory of 1890 – full of industries all around area
- All the new data provides an opportunity to rethink some design choices

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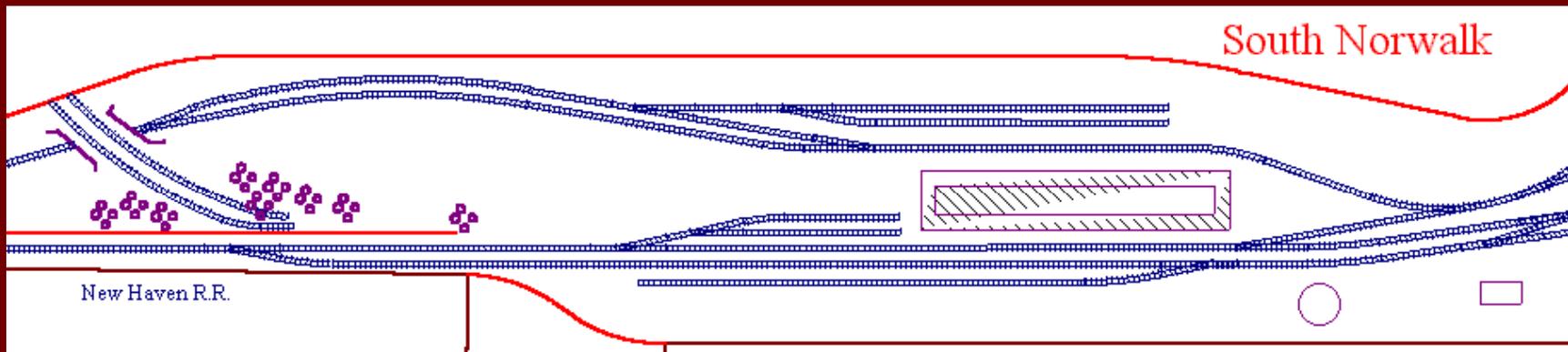
The Eureka Moment – Spring 2005

South Norwalk gets re-designed

- Station / interchange scene not working from operations POV
- Housatonic and New Haven bitter rivals, little interchange took place here
- New data shows Dock Yard better choice, includes more industries and better switching opportunities

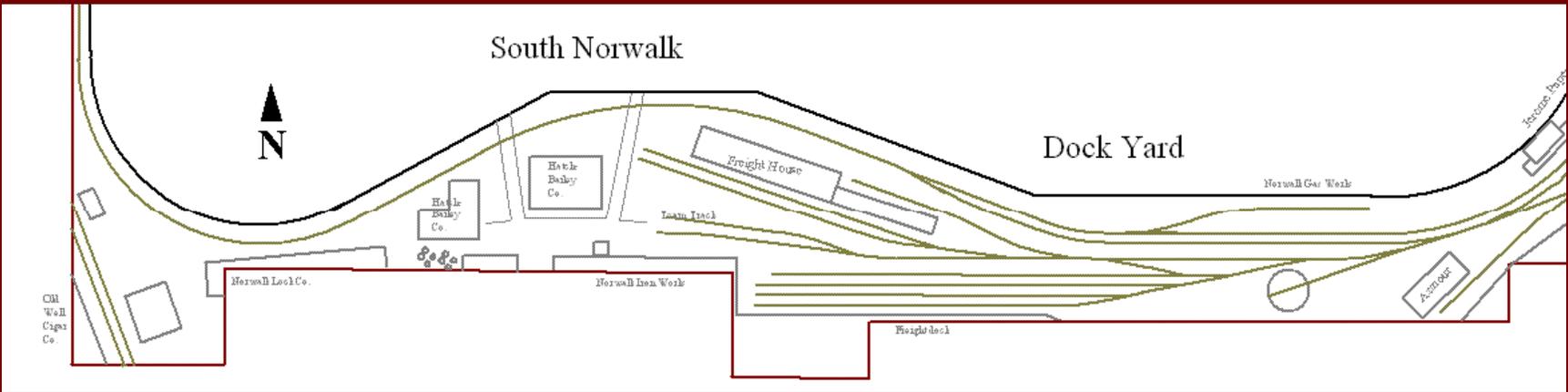
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BEFORE



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AFTER

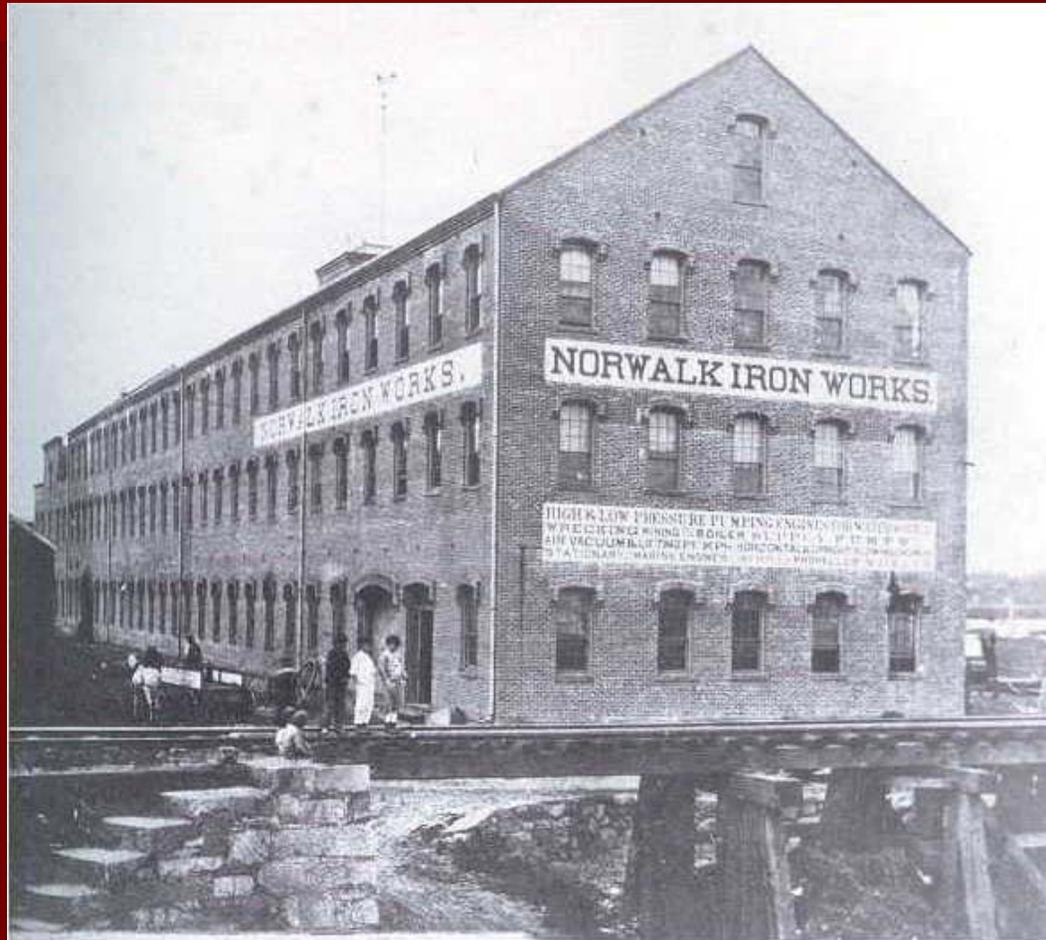


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The Eureka Moment – Spring 2005

- Station relegated to stairway wall flat; NH tracks, interchange yard dropped
- New yard design includes freight house and industries in proper orientation
- Possible to include more industries
- Provides location to classify freight, now understood to be sorely missing from old plan

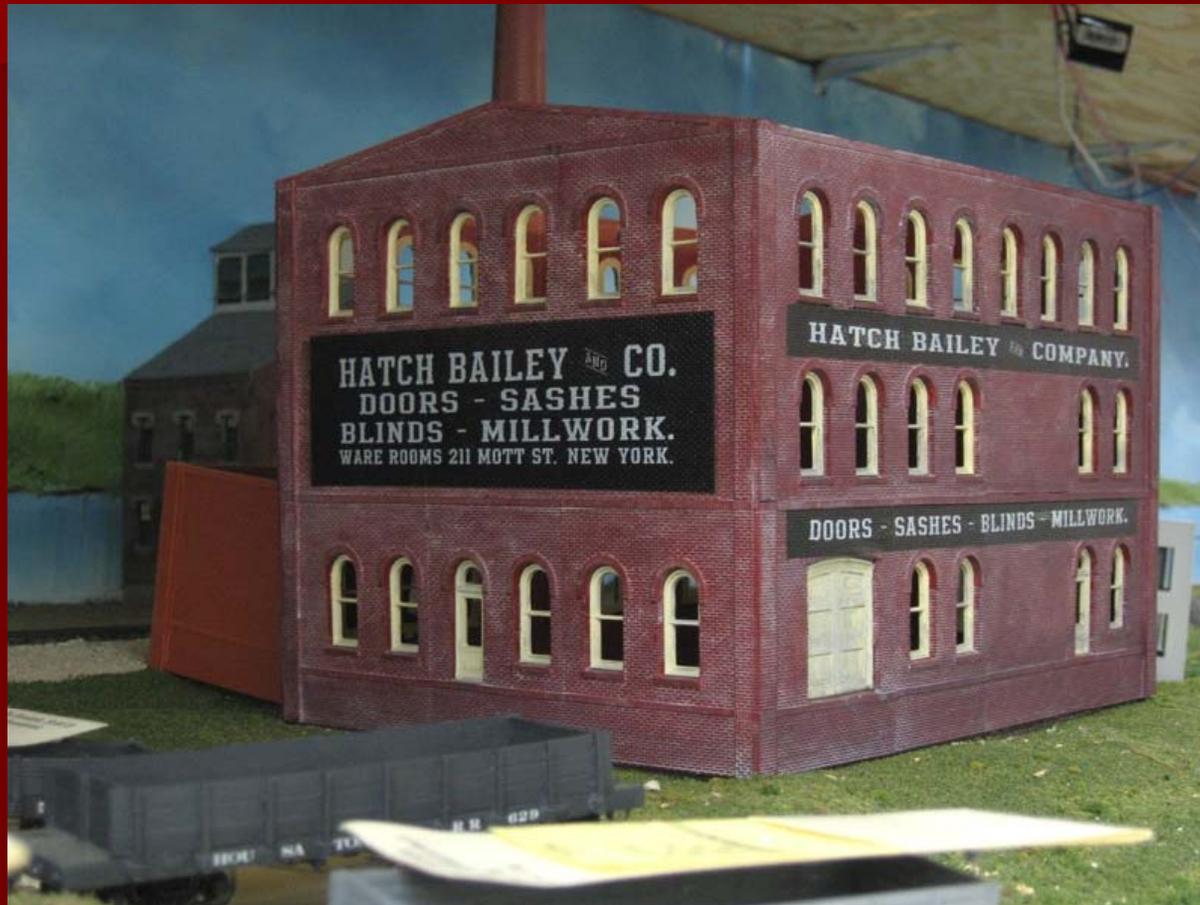
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The Eureka Moment – Spring 2005

- SoNo, Danbury renovation provides opportunity to relocate, add new towns / industries
- Winnipauk, Branchville and Wilton moved north
- Georgetown inserted between Wilton and Branchville – Pickup of Gilbert & Bennett
- Branchville now by staging, easy to run
Ridgefield branch off w/ no hidden track

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The Eureka Moment – Spring 2005

- Changes to design possible because wide aisles allow changes, expansion where needed
- Long distances between towns increased instead of filling space with even more new towns
- Both features beneficial to allowing changes to design, preventing overcrowding

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Staging Issues – 2006

Lower level benchwork and track completed, time to start building staging elevator

- Crews concerned for reliability, usefulness
- Would require dedicated elevator operator
- Many staging methods considered, most not very good ideas – long serial staging tracks overhead, vertical turnouts to stacked yards

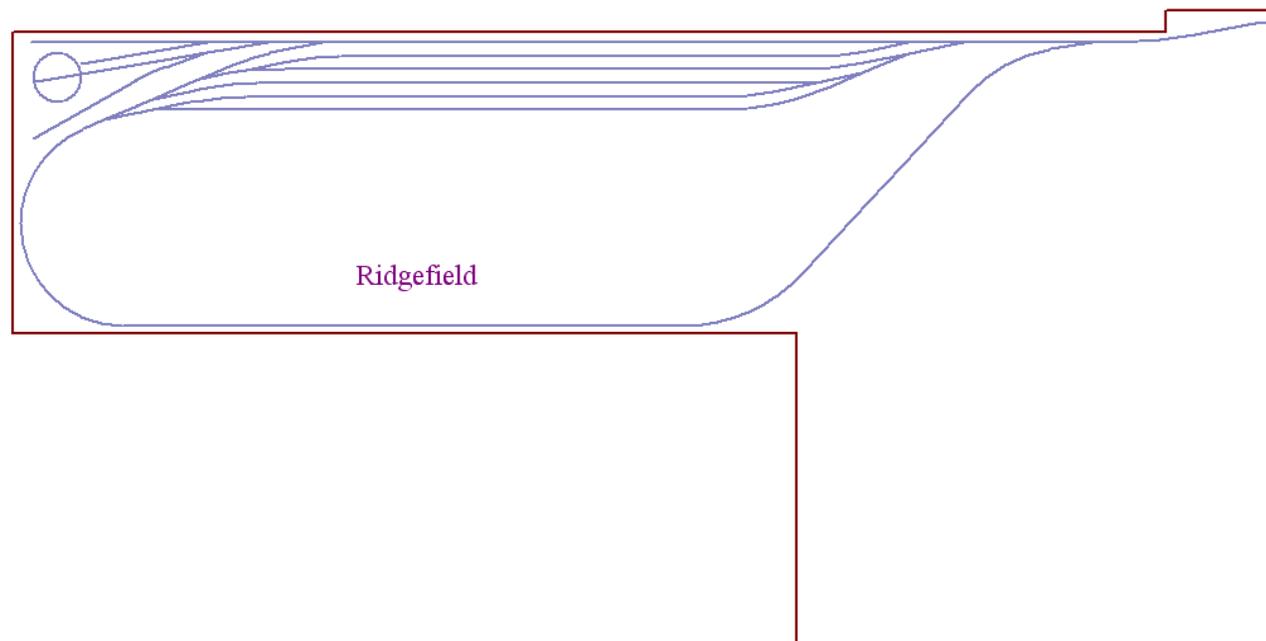
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Staging Issues – 2006

Active staging idea revisited, was part of original plan but not enough room to implement

- New diagonal orientation for Branchville provided more space in staging area, 5-6 track double-ended yard now fit in space available
- Room for loop track behind also provides ability to turn or re-use trains without handling
- Helps solve car shortage / re-use problem

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Northward Ho! – 2007

All the changes made now require expansion beyond Danbury to the north

- Problem – never planned for expansion, which introduces several traffic management issues
- NY&NE trains ran through Danbury east to west, had to account for that
- Also meant additional classification at Danbury

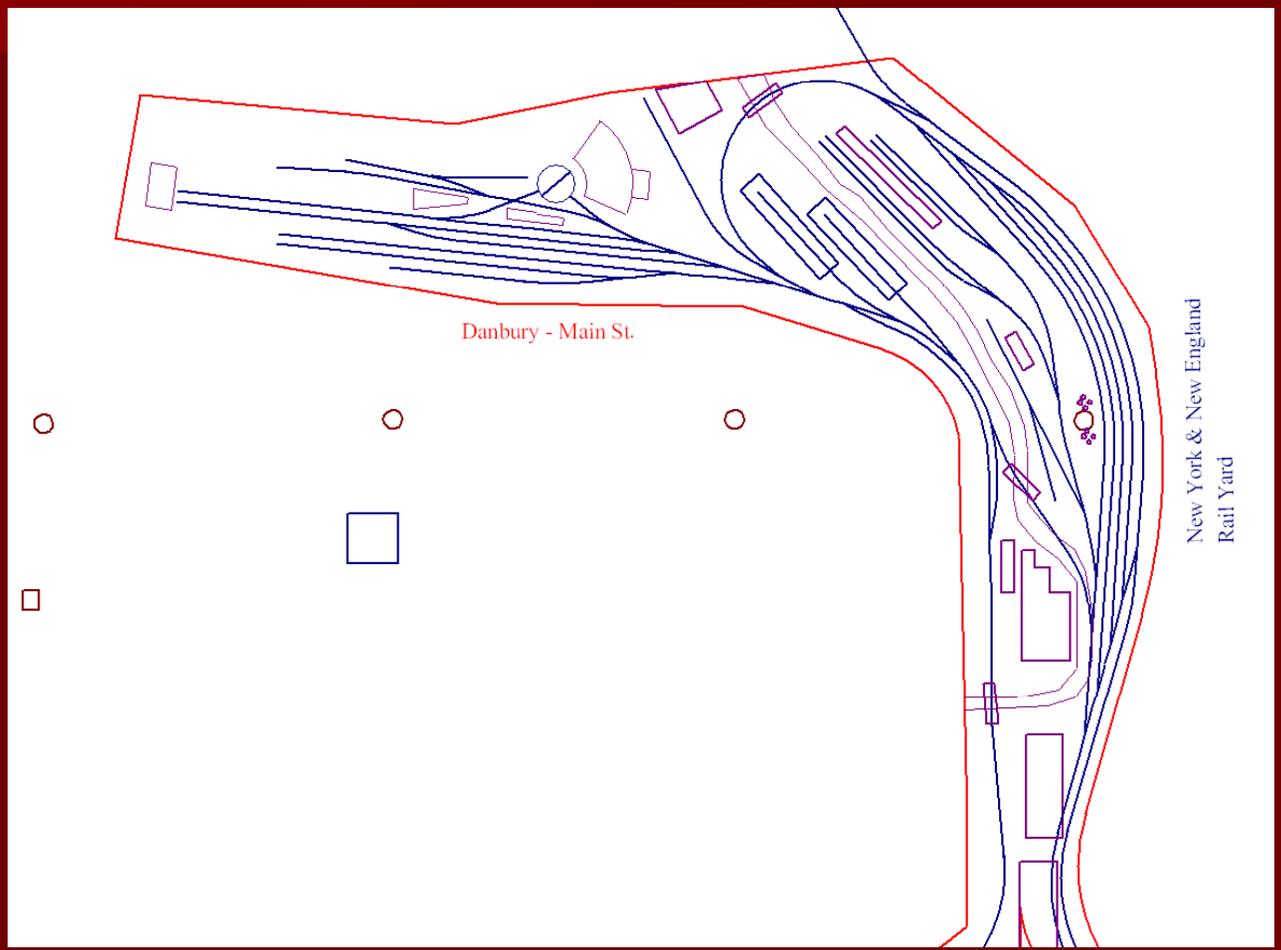
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Northward Ho! – 2007

More research shows NY&NE yard at Danbury which could be used as a live interchange

- “Small” yard fits on back of peninsula ‘east’ of old D&N coach yard, ties into reverse loop
- NY&NE trains run in from staging, bring in and depart with interchange cars
- Provides additional work for crews operating

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Northward Ho! – 2007

BUT – Live interchange requires NY&NE trains to share tracks with HRR north of Danbury

- It's an issue to operate trains of two different roads over one single track main
- NY&NE trains run in from staging, bring in and depart with interchange cars

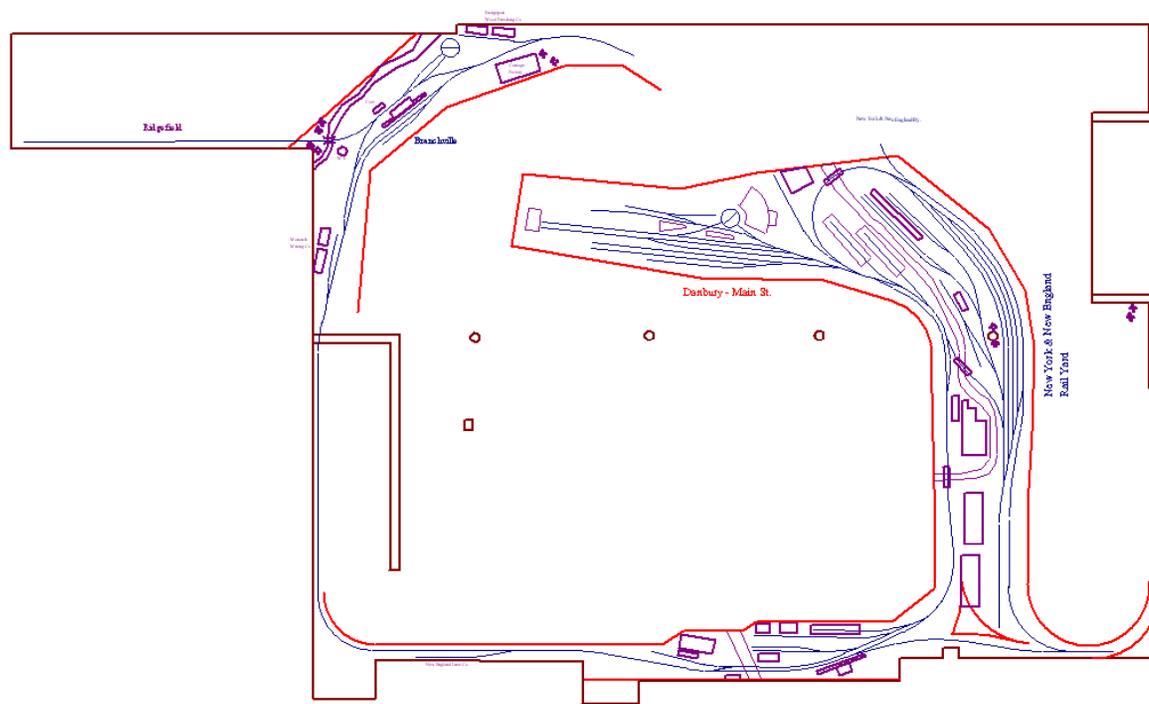
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The Chickens come home to roost – 2007

Long hidden run from Danbury to Staging along east and north walls identified as a concern

- Neil Henning suggests daylighting part of hidden run to see what train is doing
- Suggestion leads to tiered solution, with upper level scene constructed between two lower level scenes with no deck separation

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The Chickens come home to roost – 2007

- Solution like a shifted wedding cake with higher level bulging out over lower level
- Replaced a bucolic lake scene on lower level between Georgetown and Branchville
- Loss of wilderness running scene outweighed by pickup of new town on upper level, Brookfield Jct. (originally Hawleyville)

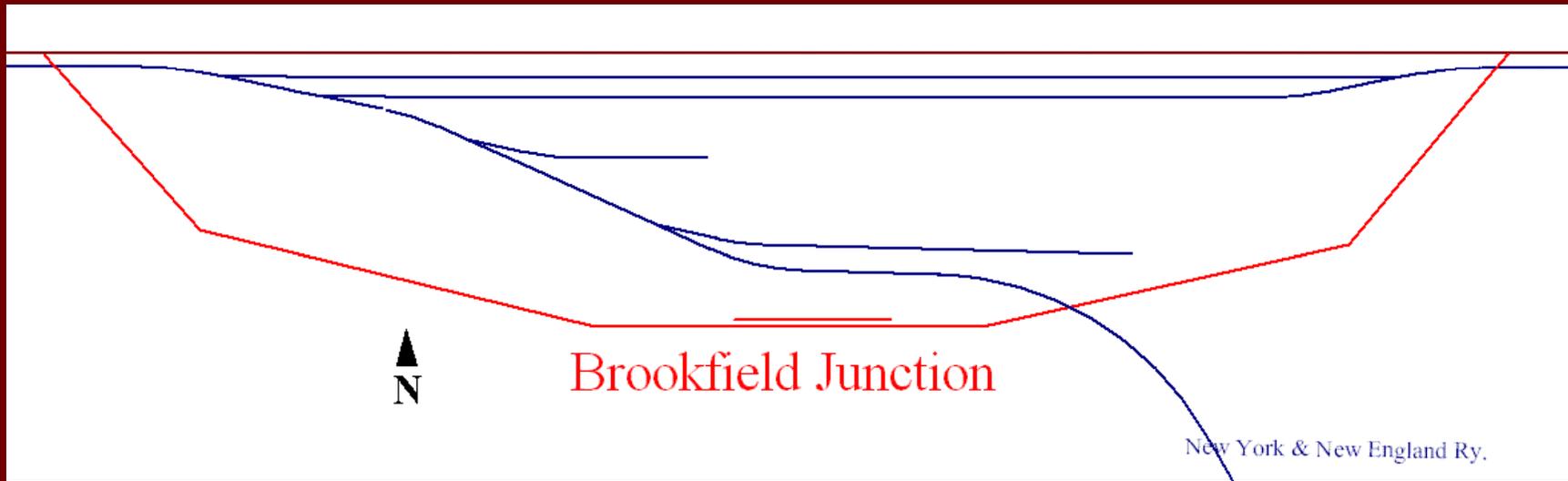
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The Chickens come home to roost – 2007

- A removable bridge used to connect into hidden track along wall to staging
- But now, Brookfield Jct. sits across aisle from Danbury at the same level
- Bridge could represent missing track link from Danbury to Brookfield Jct., act as a western escape from Danbury on the NY&NE

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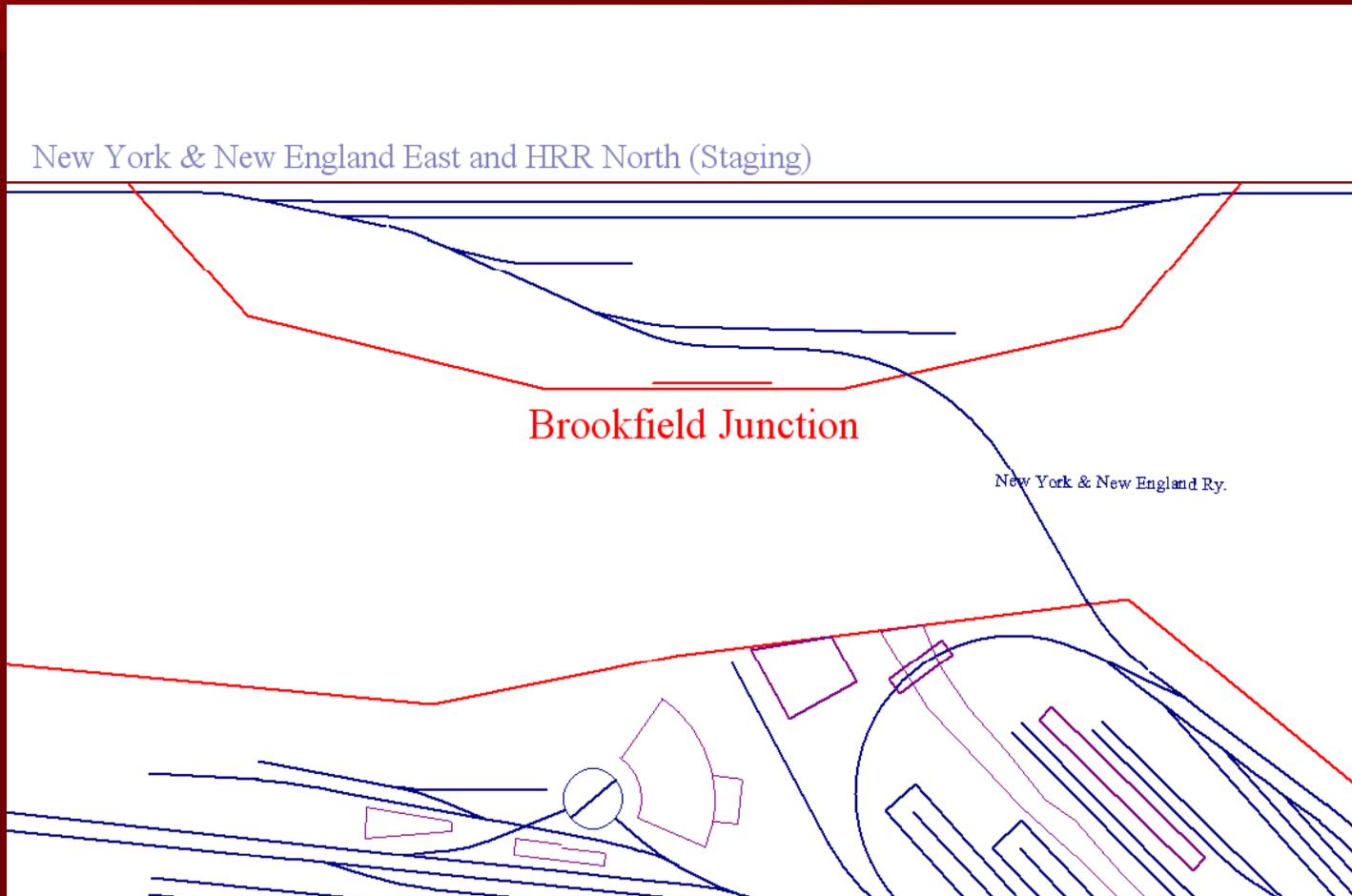
The Chickens come home to roost– 2007

- Bridge allows movements in both directions along NY&NE from staging – sort of
- But, causes headaches for DS who now has to run both directions of NY&NE thru Brookfield Jct – where they never actually went through
- Train registers at Brookfield Jct. start getting VERY confusing

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More is Better, part II – 2007

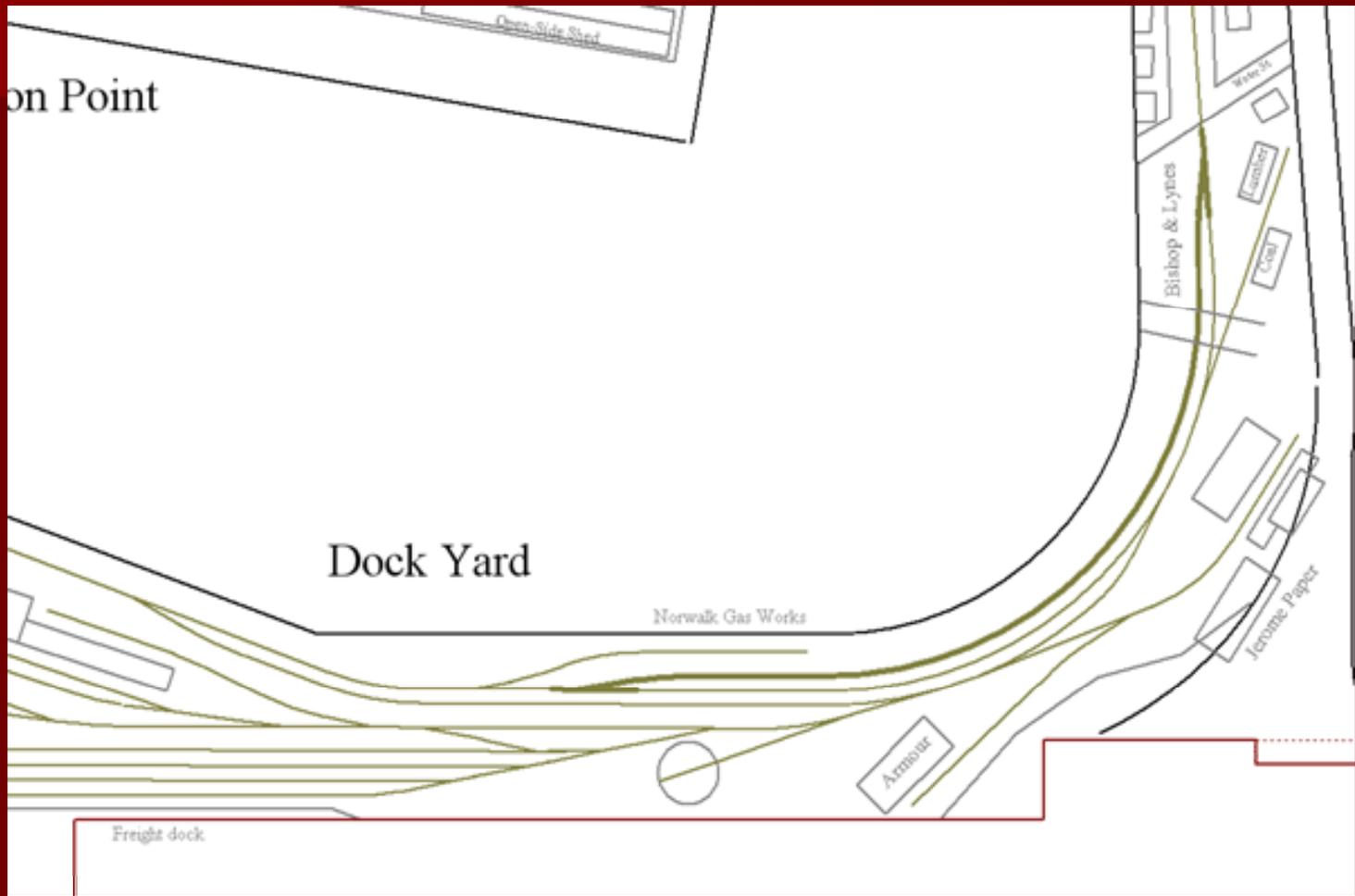
Operations showed serious bottleneck around Dock yard, causing many delays

- Revisiting valuation maps finds extra siding track compressed out in first DY design
- Second siding track restored to Dock Yard, allowing a relief valve to pass trains here

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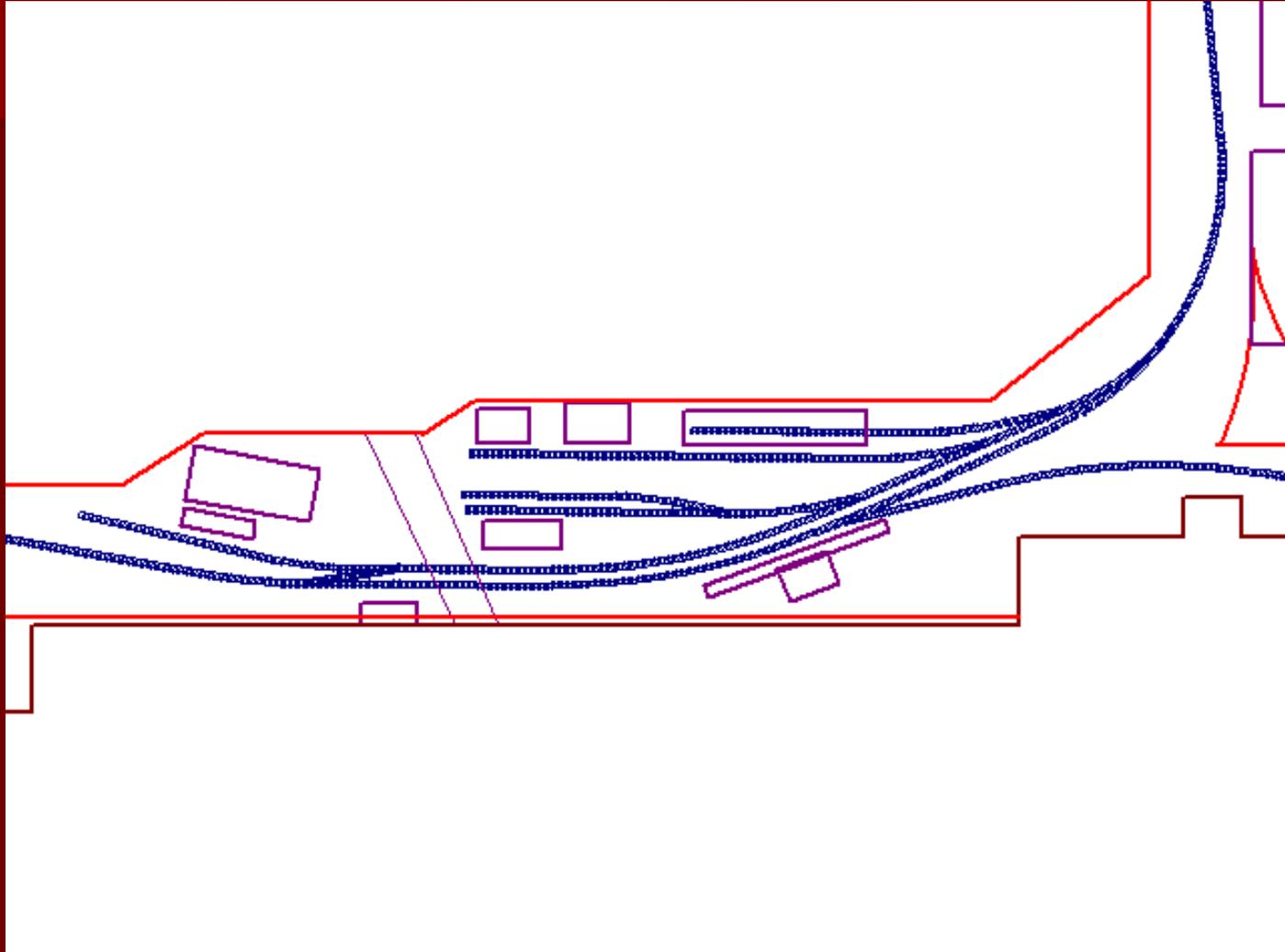
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Breaking Spatio-temporal Laws – 2008

Plan for Bethel, CT found to be unworkable
because of interference with Dock Yard

- Moved town some 15 feet to the right (south),
now covers downtown S. Norwalk instead of DY
- Cut back layout supports over DY, providing
greater access and visibility
- Bethel benchwork now supported by threaded
rods tied into ceiling joists above

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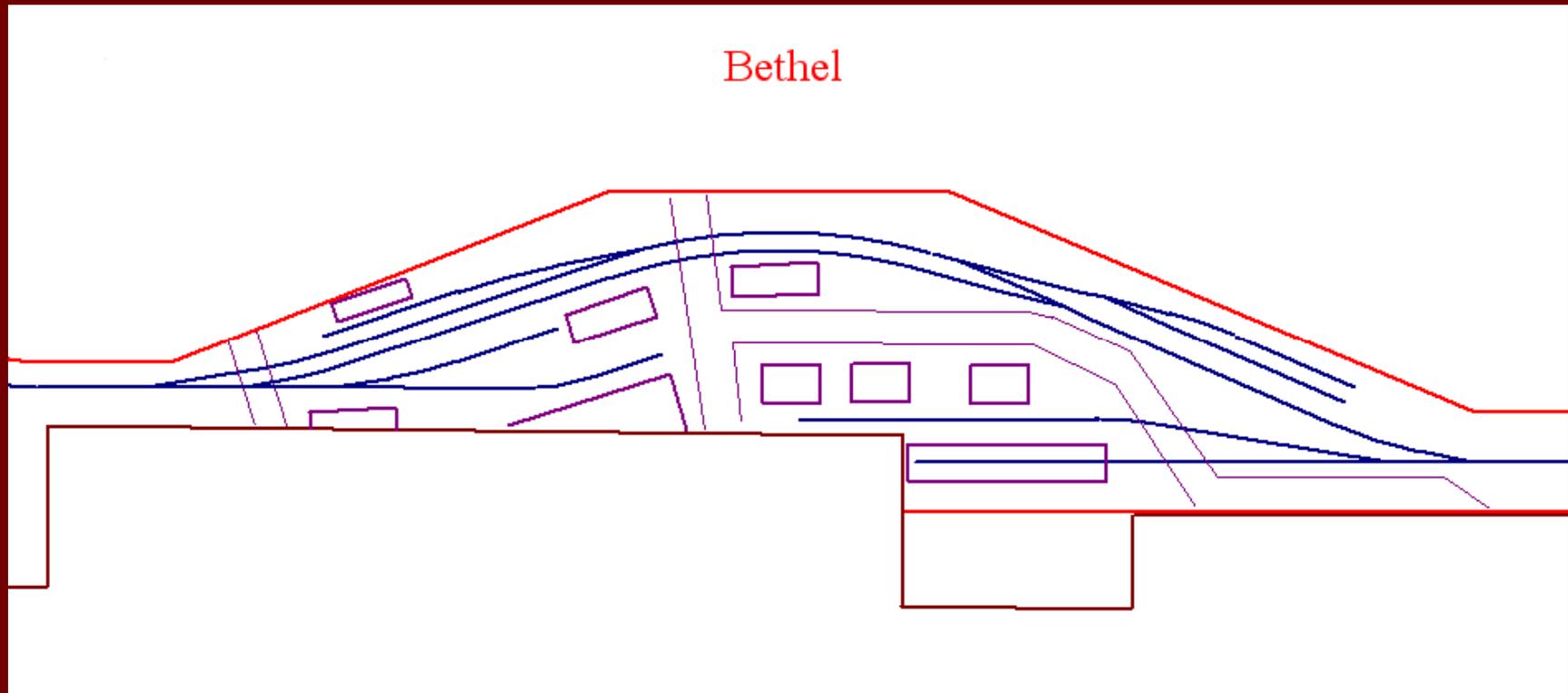
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Chlorine for the Gene Pool – 2009

Operational difficulties relating to placement of Brookfield Jct. become unworkable

- Causes a mess with train register locations, made no sense, needlessly complicated
- Added non-prototypical register station between Danbury and BJ to simplify (!) operations
- Pointed out that problem really was trying to maintain separate track for NY&NE into BJ

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Chlorine for the Gene Pool – 2009

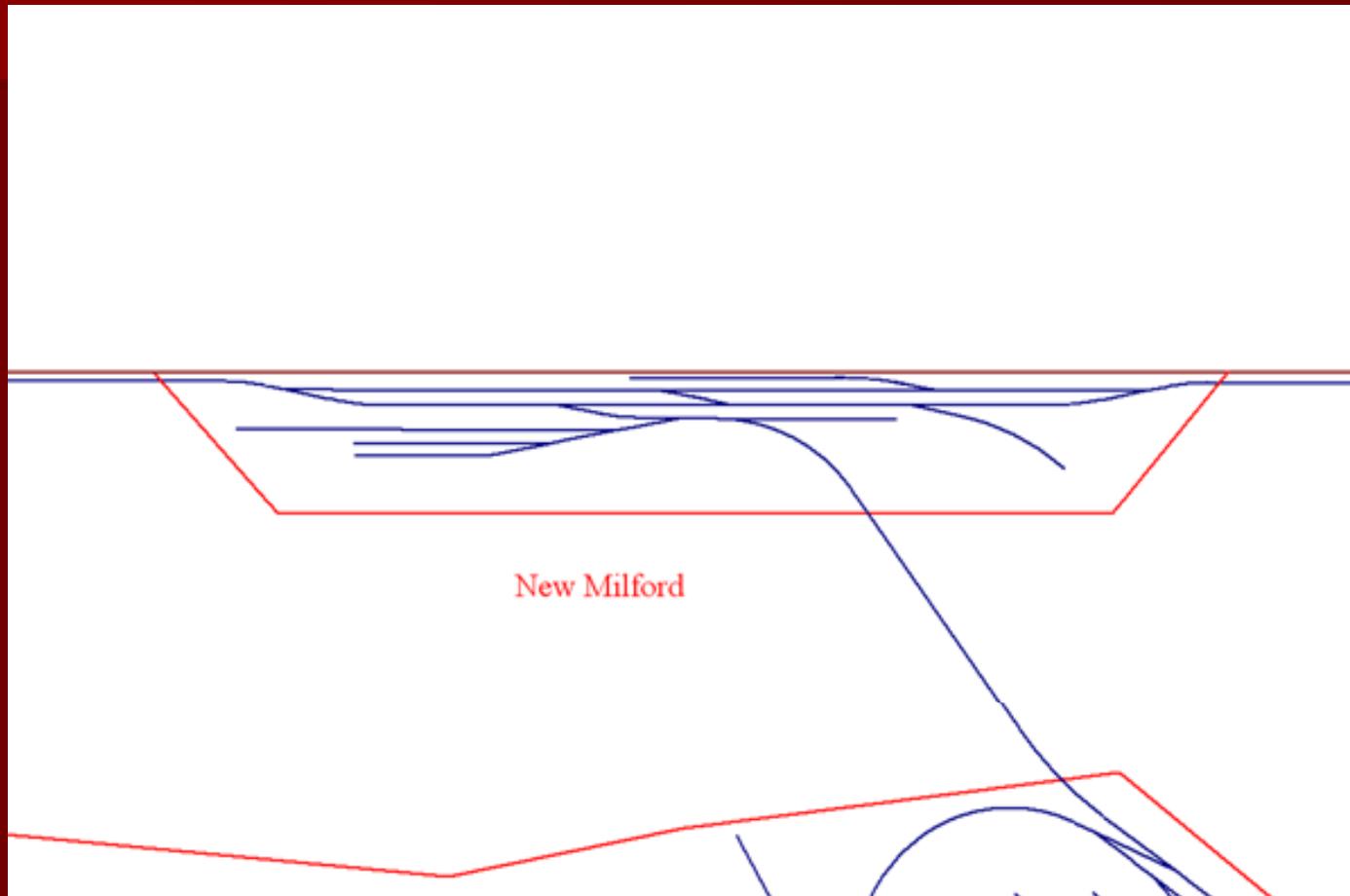
- Replacing BJ with New Milford (FD), adding several industries to the layout
- Slimmed benchwork at FD to make access easier to high-level tracks, open aisle space
- Still plenty of room to model industries even when scene cut down to 12" wide

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Chlorine for the Gene Pool – 2009

- Register location for BJ works now, at point where HRR tracks actually come together
- Bridge over aisle still there, but now area where tracks come together simply handled by DS, only register here now for Canaan / Pittsfield

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Well, That Sucked... – 2009

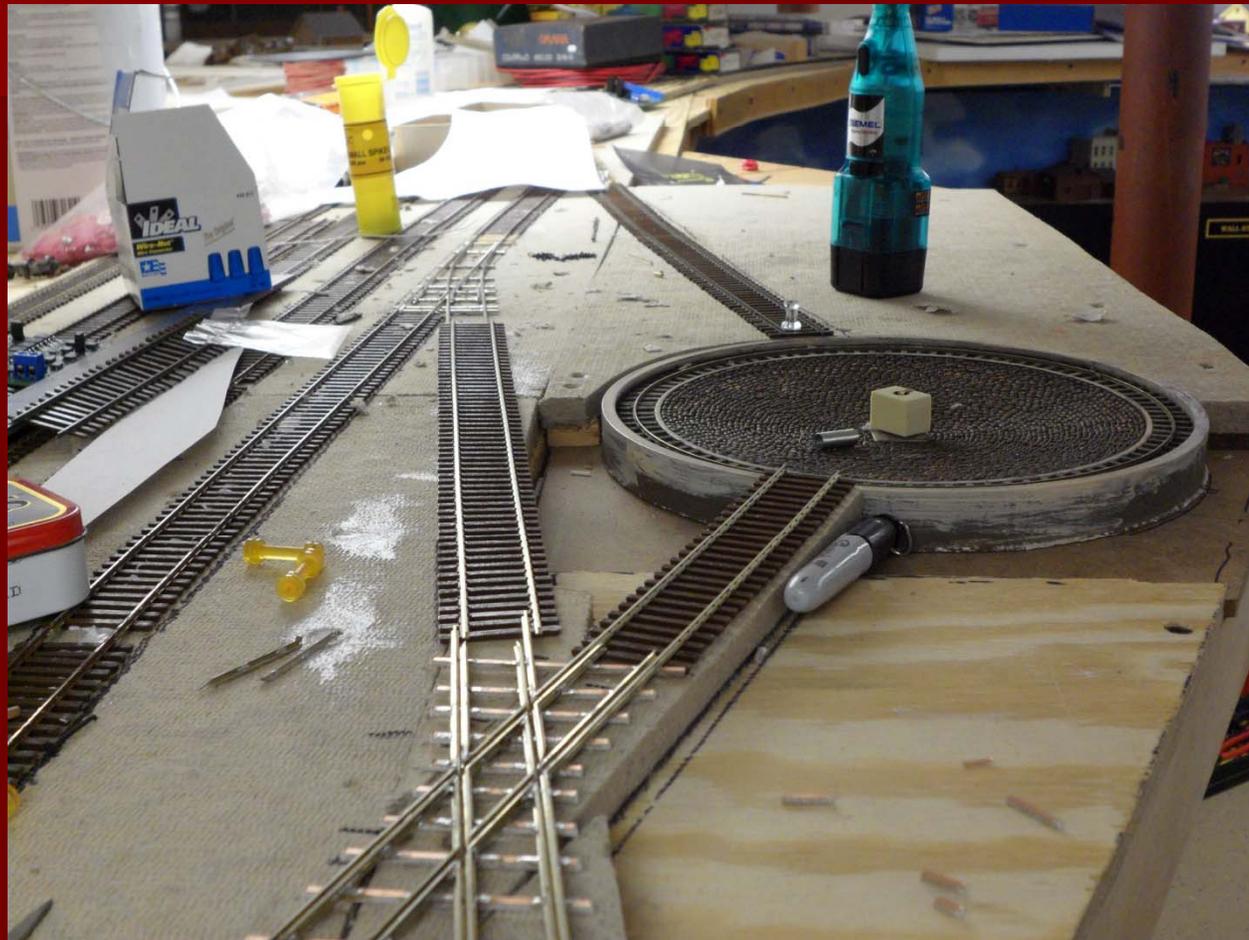
- Op session for 2009 NMRA National Convention saw use of upper deck for first time
- Fun, but missing Danbury yards and sidings caused huge problems for Dispatcher
- Decision made that Danbury had to be added before op sessions could continue

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Well, That Sucked... – 2009

- Started working on Danbury July of 2009, was supposed to be done by November 2009. It took a bit longer, to the middle of 2011.
- Still a few sidings and other track to go in, but enough to start operating with.

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Listen, While You Are Down There... – 2010

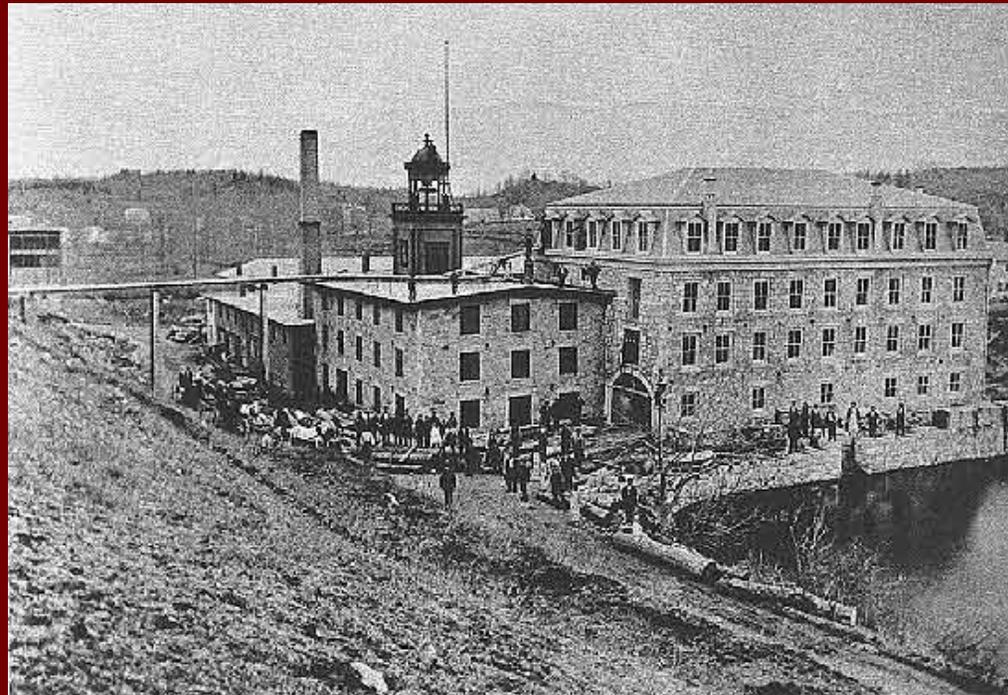
- While changing around New Milford, thought more about Georgetown to its right...



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Listen, While You Are Down There... – 2010

- Great plans to model big factory here never worked out, area just too small



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Listen, While You Are Down There... – 2010



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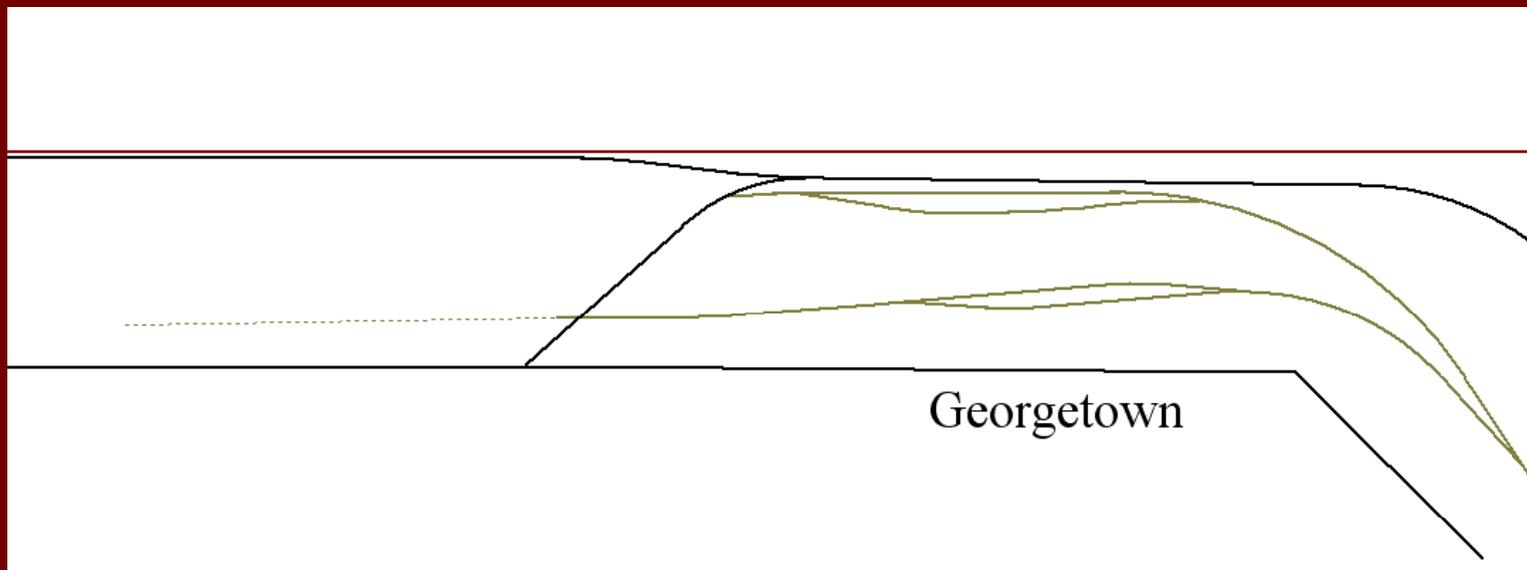
Listen, While You Are Down There... – 2010



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Listen, While You Are Down There... – 2010

- Decided to use current track as lead to access hidden track under FD representing Factory



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Listen, While You Are Down There... – 2010

- Gilbert & Bennett track to be extended under FD along fascia edge
- Holes to be cut into FD fascia to allow access to hidden track
- Redesign G&B Approach to more closely match prototype scene

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Someone Set Us Up The Bomb – 2010

- Learned from TylerCityStation.com that Cornwall made a serious mistake in his book
- He wrote the loop track in Danbury was built in 1888, but actually was not built until 1896
- My entire layout design and operating scheme I've worked on for 7 years is based on a feature that did not exist in my period.

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Someone Set Us Up The Bomb – 2010

- After emerging from coma, time to see what can be done to correct the problem
- One option is to ignore the new information, go on as before, no one would know
- But of course, I would know, and I couldn't live with that.

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Someone Set Us Up The Bomb – 2010

- Next option: what can I do to fix it?
- A few weeks of design work shows a few relatively simple changes can salvage most of what's been built already
- The changes will actually make the design closer to what actually existed than the one before

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Someone Set Us Up The Bomb – 2010

- Remove loop track and separate the two halves of Danbury down the center
- Danbury White St. Yard becomes Hawleyville, which was the actual freight interchange between the NY & NE and the Housatonic
- A new track connecting Hawleyville with Bethel via what was the LY Cutoff becomes the Hawleyville Wye.

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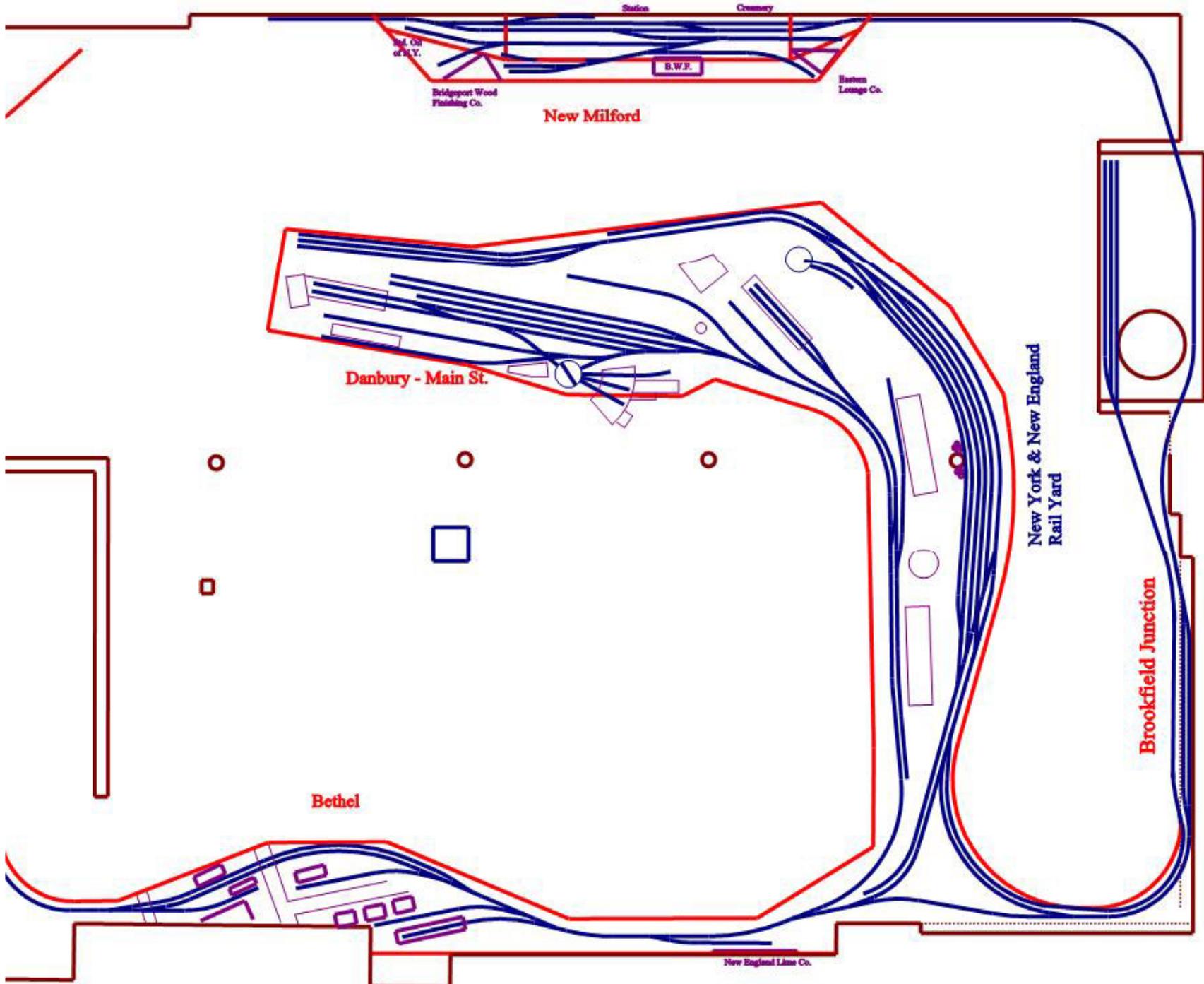
Someone Set Us Up The Bomb – 2010

- Small active staging yard added to “East” end of Hawleyville, representing NY & NE to Boston
- Small active staging yard added to Utility room, representing NY & NE “West” and also the Housatonic to New Haven and Bridgeport
- New solution actually corrects earlier problems of how to operate NY & NE as an active interchange!

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Someone Set Us Up The Bomb – 2010

- We also reversed the orientation of the Danbury side, making access to the turntable easier.
- Danbury now operates simply as a passenger terminal as it should have all along
- All freight now gets classified at Hawleyville instead of Danbury which is more historically correct.



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What Does the Future Hold?

Several upper-level towns still need industry tracks added

All turntables (5) are now built and installed

Changes coming to Wilson Point's engine service operations, including a new coal dock and dump house, maybe Dock Yard too

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Results of Changes Over Time

- Blew it on single-deck druther completely, also forced to include some hidden track

BUT...

- Increased mainline run by 100%
- Added industries, yards needed for operations
- More efficient use of available space
- Much better staging operations

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But even with all these revisions...

- Maintained optimal distance between towns
- Did not overcrowd scenes with track, structures
- Every change considered with regard to operations potential and historical accuracy
- Some options discarded because they conflicted with criteria above

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Lessons Learned

- Keep open mind, think outside the box - don't be afraid to make changes
- Start your design with WIDE aisles, allows for changes in design later without restrictions
- When in doubt, follow the prototype
- Resist the urge to fill every available space
- If something seems more complicated than it should be, you've made a mistake!

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Lessons Learned

- NEVER STOP LEARNING! Keep reading, studying, finding new information
- Remember less is sometimes more, except for aisles!
- Listen to your friends, different perspectives
- Always have fun!

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Special thanks to my crew: Dave Ramos, Tom Callan, Ted DiIorio, Ted Pamperin, Neil Henning, Ray Louis, Wayne Shortman and a cast of tens

Also thanks to Joe Fugate, some of whose photos appear in this presentation

You can see more on the Housatonic in the March/April issue of Model Railroad Hobbyist Magazine, Issue #6, March / April 2010, available online.

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