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The Showcase Line[®]
The S-Trax[®] Primer and Track Planning Guide
Volume 1: Getting Started \$7.95

Create a World of Your Own . . . Step Up to the Realism of S, 1/64 Scale

For almost everyone the real enjoyment of model railroading is departing from a simple loop of track to create a layout where the trains operate like a real railroad. That layout can include rail yards, industries to service, structures, scenery, highways with vehicles; a world in miniature.

The S-Trax® System from S Helper Service helps you with track to create that miniature world in S scale, just the way you like it. Different radii of curved sectional track and flex track allow multi-track main lines. Switches permit industrial sidings and yards. Crossings enable rail junctions.

With the current variety of structures, accessories and scenery components available for S, 1/64 model trains, your miniature world will be everything you can imagine. Cities, forests, farms, villages can all be part of your layout.

And soon, S Helper will be bringing you line-side structures for a greater variety of scenic possibilities.

The Ideal Size . . .

As "the ideal size", S uses the scale of 3/16" = 1', or a proportion of 1 in 64 (1/64); situated in the middle of the scales used in model railroading today.

S is large enough to provide the remarkable detail that is easily seen, with the strength to be handled by younger children. At the same time, it is small enough to allow very nice operating layouts in the spaces that are available in even moderate sized homes.

To help you get started, this guide provides a number of plans utilizing the S-Trax system. The layouts start as small as 4' by 6', encompassing suggestions for scenery and structures. Also included are complete instructions for working with S-Trax.

The S-Trax System Components from S Helper Service's S-Trax System are not just a common, generic representation of railroad track. They are the only sectional track elements in all of model railroading that are a scale representation of railroad track.

S-Trax follows specifications that were used by "The Standard Railroad of the World," the Pennsylvania Railroad. The code 125 (.125" high) rail used equals the 155-pound rail used by the Pennsy for its mainline. The S-Trax ties, tie spacing, ballast composition and ballast taper are exact replicas based upon that same P R R blueprint.

S-Trax components are compatible with A. C. Gilbert American Flyer S gauge trains and track (also K-Line® and Gargraves S gauge track). The #00393 A F track adapter allows the use of S-Trax to expand an existing layout originally built with any of these brands of track.

The continuing expansion of the S-Trax range of components means additional sectional components are released on a regular basis.

A Few Tips . . .

The layouts presented in this guide are designed to use S-Trax System components. Each track section is identified on the diagram and is listed in the bill of materials with each plan.

When piecing together sections of track that utilize both full and short sections of track, the order is unimportant, as long as the total length is correct. The track diagrams serve merely as a guide to determine the necessary length.

The plans in the guide have been carefully designed to use standard sections in intricate patterns with no or very little cutting or fitting. Most sections are flexible enough so that there is no visible distortion in the tracks.

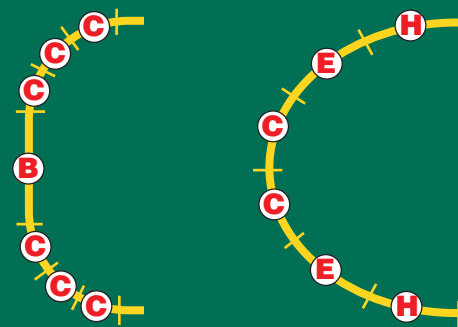
Since S-Trax is a complete system, you may combine straight and curved sections as you desire. However, major deviations from these

plans may result in future operational problems. Be sure to test the operations of your desired layout BEFORE you secure any track to your layout base. If a problem develops, chances are that sections were inadvertently left out or different radius curves were mixed together.

A complete track circle requires 360 degrees of curvature, regardless of which diameter curve is used. While S-Trax provides three radii of curved sectional track, it is possible to achieve layouts with 9 different radii to fit your space requirements or taste. The chart below shows the track radii per section, and the specific order in which those sections should be connected to achieve one-quarter of a circle (90°) in a specified radius. Bear in mind that a complete circle is 360°, or repeating each list 4 times.

Curved Radius Table:

30" radius	30	30	30
28.5" radius	30	25	30
27" radius	25	30	25
26.5" radius	30	20	30
25" radius	25	25	25
24" radius	20	30	20
23.5" radius	25	20	25
22" radius	20	25	20
20" radius	20	20	20



Contents:

Page 1	Introduction
Page 2	Contents and Components
Page 3	S-Trax Sectional Track Components
Page 4	#01635 Chicago West Pullman – 4' X 6'
Page 5	#01591 Matawan Junction – 4' X 8'
Page 6	#01592 Maybrook Bridge Line – 4' X 8'
Page 7	Making Custom Sections of Track
Page 8	#01593 Tacoma Transfer – 4' X 8'
Page 9	#01594 Norwalk Crossing – 4' X 8'
Page 10	#01595 Macon Yard – 5' X 9'
Page 11	#01596 Utica Terminal – 5' X 9'
Page 12	#01597 Decatur Exchange – 5' X 9'
Page 13	#01599 The Gorre and Daphetid – 6' X 10'
Page 14	#01598 SHS Portable Layout – 5' X 9'
Page 15	Layout Frame Construction
Page 16	Elvations and Risers
Page 17	Using Urethane Foam
Page 18	Building Mountains
Page 19	Scenery
Page 20	#01600 St. Joseph Belt Line – 6' X 16'
Page 21	American Flyer compatible
Page 22	Specialty Track

Components:

	#00253	Railjoinder, 12 /pkg
	#00254	Railjoinder, insulated, brown, 12 /pkg
	#00255	Conn. w/feeder wire, 12 /pkg
	#00256	Track set 20"r, 155#NS, 6 /bx
A	#00257	15" straight track 6/bx
B	#00258	10" straight track 6/bx
C	#00259	S-20" rad. 30' cur track 6 /bx
D	#00291	S-20 rad 15' cur. trk 6 / bx
E	#00292	S-25 rad 30' cur. trk 6 / bx
F	#00293	S-25 rad 15' cur. trk 6 / bx
G	#00294	S-30 rad 30' cur. trk 6 / bx
H	#00296	S-30 rad 15' cur. trk 6 / bx
I	#00297	5" straight trk 6 / bx
J	#00298	RC switchers #3 RH
K	#00299	RC switchers #3 LH
	#00393	AF track adapter, 8/pkg
	#00395	Railjoinder, insulated, yel 12/pkg

	#00463	Manual switchers #3 RH
	#00464	Manual switchers #3 LH
	#00465	Flex Track, 6 / bx
	#00466	Flex Track, 24/bx bulk
L	#00467	Crossing set, 90 deg
M	#00468	5" bumper, LED 1/bx
	#00533	Turnout contr. w/ 2 wires 4+2
	#00534	Turnout extension 4 wire 3/pkg
	#00552	Locomatic 10 button controller
	#00660	Metal rail joiners (36)
N	#00670	5" Uncoupler w/ button
O	#00671	5" Accessory track w/ button
	#00788	Feeder wire terminal 24/pkg
P	#00792	RC switches #5 RH
Q	#00793	RC switches #5 LH
R	#00794	Manual switches #5 RH
S	#00795	Manual switches #5 LH
	#00925	Control button (00670)
	#00926	5" Bumper unlighted
	#01037	Bumper yellow
	#01038	Bumper red oxide
	#01122	Track planning guide, 24 pg
	#01205	Control Button (SPDT)
	#01214	Classic Trax #6 RH
	#01215	Classic Trax #L RH
	#01216	Classic Trax #8 RH
	#01217	Classic Trax #8 LH
	#01219	HomaBed 3/8" straight 48"
	#01220	HomaBed 3/8" curved 48"
	#01221	HomaBed 3/8" 50/50 48"
	#01228	rail bundle, 36" 33 pcs
	#01423	Control Button (DPDT)
	#5400	DC Power Pack, 24 VDC
	#690	4 amp, 16.8 v, powersource for LM or DCC

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To help you create a miniature railroad world, any of the following track plans provide a complete layout. Later, these track plans can be added to, incorporated into larger layouts or even combined with each other, thus increasing your miniature world as more space becomes available and as your interests develop.

The drawings of the layouts are not to scale. The grid lines represent 12-inch spacing.

On any layout, uncoupler sections or activator sections may be substituted for any 5-inch straight section, or combined with a 5-inch straight section to substitute for a 10-inch straight section. Manually operated switches may be substituted for remote control switches, as well as any illuminated bumper section can be replaced with a non-illuminated section.

For additional design potential, S-Trax components are included with R & S Enterprises' RR-Track for Windows, Sandia Software's CADrail and Abracadata's® 3D Railroad Concept and Design software.

Art Direction by Guy Gola
Copy by Will Holt and John Prior
Layout Illustrations and Designs by Will Holt and Jim Zare
Layout Renderings by Guy Gola
Photography by V.S. Roseman, Bill Moitz and Bob Werre
Special thanks to Karen Kwok and Ernest Wong

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Hints for Planning and Layout Construction

How Large and Where...

Before planning a layout or selecting a track plan, you should consider the space where you intend to create your miniature world. The space should not only be large enough for the layout itself, but allow space to add a control panel with room for you to be at the panel without being crowded. There should be enough space for at least a few visitors to watch the operations of the layout without being cramped.

The layout should be in a space that also allows enough room to do maintenance on it easily. The height of the layout may be any height that you desire, but again consider the visitors view and your ease of maintenance.

Plus, the space should have reasonable control over temperature and humidity. There is no reason for you or your visitors to be chilly or too warm. And humidity, be it too much or too little, can adversely effect the materials used on the layout, the rolling stock, locomotives and the scenery.

Layout Bench Work

Layouts are constructed with either a solid, flat surface over the entire area of the layout or with what is know as open grid bench work. Consider which you feel would be easier for you to construct and what will provide you the greatest ease of maintenance.

But whichever you select, remember that it should be sturdy. You and your visitors will probably lean against it; it should support the weight of the all of the framework, track, scenery and trains without swaying.

And the noise of the moving trains should be considered. When using plywood, particle board, etc. for either the surface of the layout or the track sub-roadbed, you need to remember that the vibrations of the moving trains translate into sound and the surface will tend to amplify that sound. The sound, unless treated, can become a din so prominent that you cannot speak to anyone in the room without raising your voice.

Wiring

Any model railroad requires the running of electrical

wiring for the operation of the trains, the animations or operating accessories, and the lighting of structures and scenery. Remember to run wiring neatly, and to label the wires or maintain through records concerning the connections that have been made and the functions of the wires.

Working with Sectional Track

Sectional track, like the many components of the S-Trax System, provide an easy, efficient way to construct a layouts. But do not take for granted that everything fits perfectly just by connecting the sections together. After test assembling the track on the layout surface, use a long straight edge to make sure the straight runs of track are, in fact, straight. Eye each curve joint to verify that the curves are smooth and not kinked at any point. Double check both curved and straight runs of track.

Many overlook the creative possibilities offered by combining radii of sectional curve track to provide a radius to fit a specific space, or to create more prototypical easements for curves to avoid that appearance of the train jerking into each curve. S-Trax components lend themselves to various radii. Other Resources on Layout Design and Construction With the limited space available within this book, highly detailed layout building instructions are not

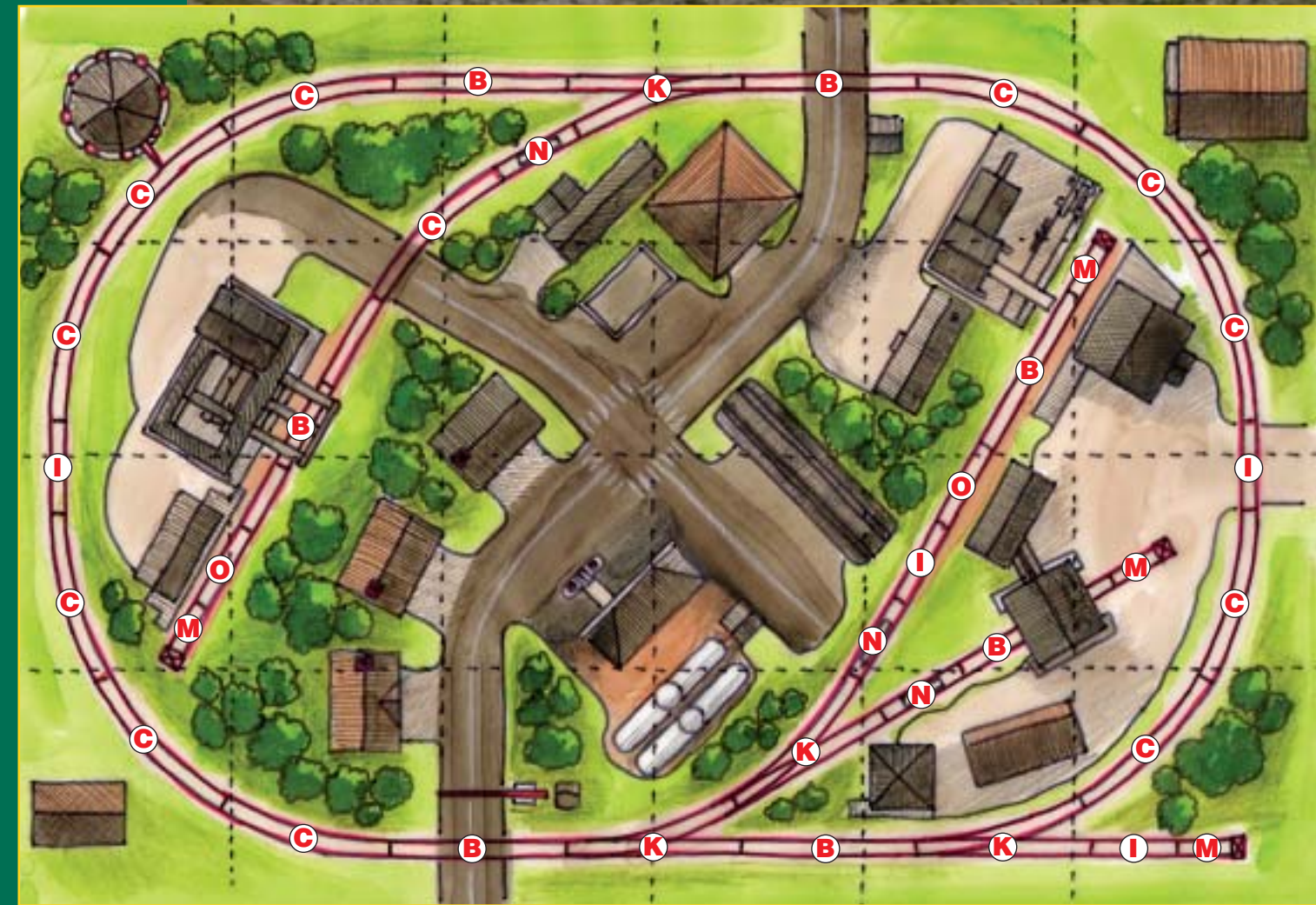
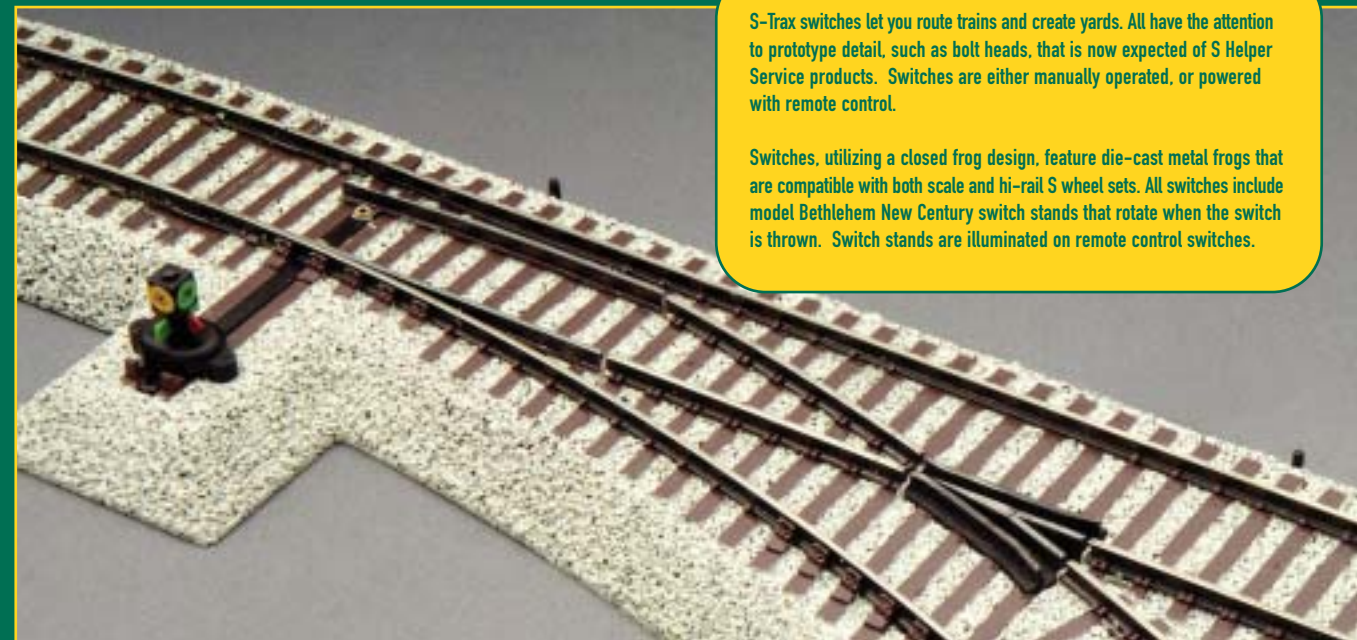
possible. For detailed instructions and hints on building bench work, scenery, layout wiring, etc. an array of excellent books are available from other manufacturers and publishers. These are available from your local hobby shop or may be available in your local library. We suggest that you obtain the books you require to complete your knowledge base to assure the best possible layout and the most trouble-free layout building experience possible.

The books available cover:

Animation, Lighting and Sound Effects
Bench Work
Electrical Wiring
Painting and Weathering Models
Prototype Railroad Operations
Scenery Techniques and Materials
Structure Building and Detailing
Track Design and Planning
Track Work, Bridges and Trestles
Trackside Industries
Trains Control Systems and Power Supplies

S-Trax switches let you route trains and create yards. All have the attention to prototype detail, such as bolt heads, that is now expected of S Helper Service products. Switches are either manually operated, or powered with remote control.

Switches, utilizing a closed frog design, feature die-cast metal frogs that are compatible with both scale and hi-rail S wheel sets. All switches include model Bethlehem New Century switch stands that rotate when the switch is thrown. Switch stands are illuminated on remote control switches.



The far southeast side of Chicago, where George Pullman's works once stood, is heavily industrialized. Enjoy this action-packed, small interpretation of Chicago's active industrial life. Dump the loaded hopper car into the coal yard as the coal loader transfers the minerals to a waiting car. Pick up the load of logs and move it across town to the sawmill. Dump the logs by the mill and watch the crew load the finished planks into the waiting car. And drop off a tank car at the oil depot.

Add just a couple of switches, a few sections of track, uncouplers, activator sections and bumpers to the basic track set either from your Showcase Line starter train set or S-Trax track set and you can create plenty of railroad action. And in only twenty-four square feet.

Note: The dead end siding to the lower right of the track plan could be used to connect to a future, expanded track plan or join with one of the other layouts here-in.

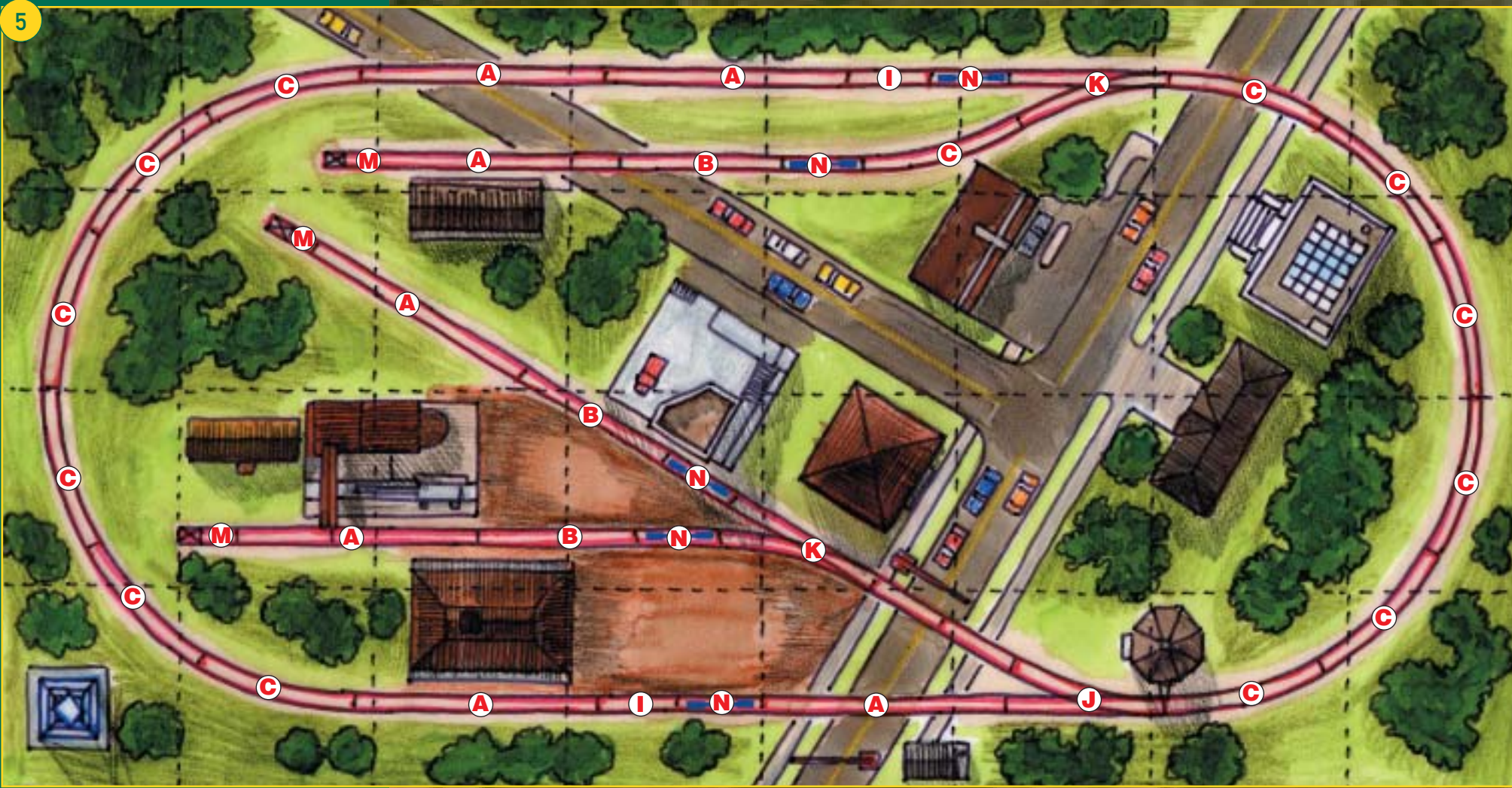
#01635 Chicago West Pullman 4' X 6'

Bill of Materials:

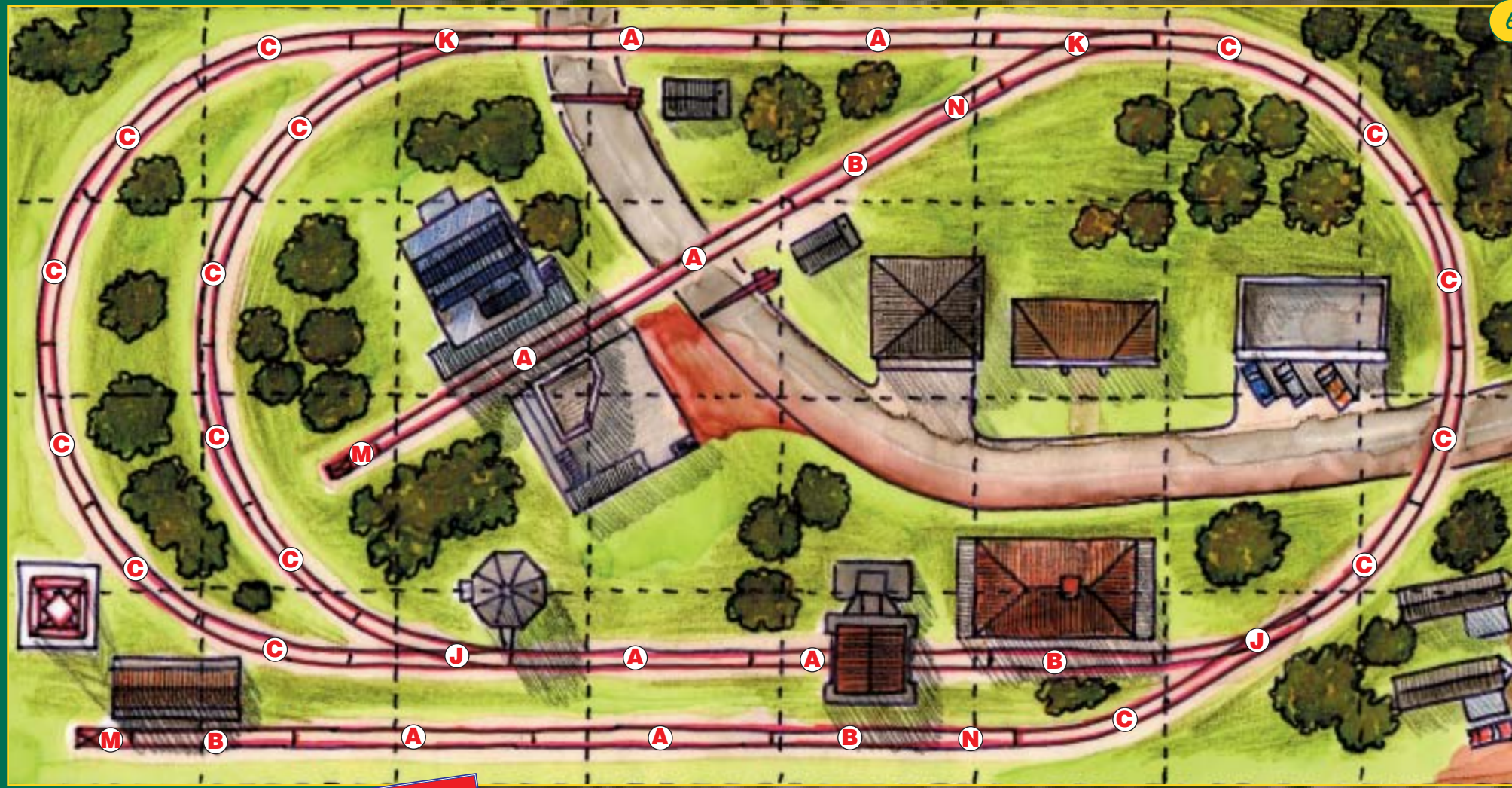
B 5	10" straight sections	#00258	M 4	5" bumper, illuminated	#0046B
C 12	20" radius sections	#00259	N 3	Uncoupler sections	#00670
I 7	5" straight sections	#00297	O 2	Accessory tracks	#00671
K 4	#3 Left Hand Switch	#00299A			

Uncoupler sections may be substituted with #00297 5" straight sections.

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.



5



6

Details ARE the Difference.™

Not far from the Garden State Parkway are the industrial zones of Matawan. Also running on many of the same rails are commuter lines feeding the terminals of Manhattan. Bring in the empty rolling stock to be loaded at the freight doors and docks of the industrial buildings, then, when loaded, move them out and put the next empties in place.

#01591 Matawan Junction 4' X 8'

Bill of Materials:

- | | |
|---|--|
| A 7 15" straight sections #00257 | J 1 #3 Right Hand Switch #00298A |
| B 3 10" straight sections #00258 | K 2 #3 Left Hand Switch #00299A |
| C 13 20" 30°radius sections #00259 | M 3 5" bumper, illuminated #00468 |
| I 3 5" straight sections #00297 | N 6 Uncoupler sections #00670 |

Uncoupler sections may be substituted with #00297 5" straight sections.
#00468 may be substituted with #00926 bumper

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.

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A branch line connects a small town with rails that cross a continent, east to west and north to south. And with good reason. The town's industries produce products that are in demand elsewhere. That demand produces enough traffic to keep trains moving empties and loads along the branch; loads headed out, empties and raw materials headed in.

A passing siding allows east-bound and west-bound trains to pass.

Note: The dead end siding to the lower right of the track plan could be used to connect to a future, expanded track plan or join with one of the other layouts here-in.

#01592 Maybrook Bridge Line 4' X 8'

Bill of Materials:

- | | |
|---|--|
| A 8 15" straight sections #00257 | K 2 #3 Left Hand Switch #00299A |
| B 4 10" straight sections #00258 | M 5 5" bumper, illuminated #00468 |
| C 16 20" 30°radius sections #00259 | N 2 Uncoupler sections #00670 |
| J 2 #3 Right Hand Switch #00298A | |

Uncoupler sections may be substituted with #00297 5" straight sections.
#00468 may be substituted with #00926 bumper

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.

Making Custom Lengths of Track

You may need to make a special length of track. This is one method of fabricating a shorter track section by removing ties and making a splice in the middle of the roadbed.



1. Rails can be removed by grasping the rail joiner end with the needle nosed pliers and pulling out in one motion while securely holding the roadbed. Repeat with the opposite rail.



2. Once the rail is removed, the tie bed can be removed from the roadbed.



3. File or grind off the notches located on the bottom of both rails. This will allow easier installation of the rail.



4. Determine the optimum place to make the first cut keeping in mind the spacing of the center triangular roadbed supports. The rectangular openings for the ties need to be the same width or slightly wider than the ties at the splice to allow them to seat properly.

5. Using a sharp fine tooth saw (Zona saw or fine hacksaw blade) make the first cut using the tie opening as a guide to keep cut square on bevel of roadbed.

6. The second cut will remove the excess roadbed. Trim away roadbed cutting next to tie opening leaving width of the opening intact.



7. In a well ventilated area, placing both halves of the roadbed to be joined on a flat surface. Using an ABS solvent type cement (Plastistruct glue), join roadbed sections. Check that edges are square. Small bar clamps can aid in keeping the sections tightly together while the solvent welds the ABS. Leave the clamps on until odor from solvent cannot be detected.



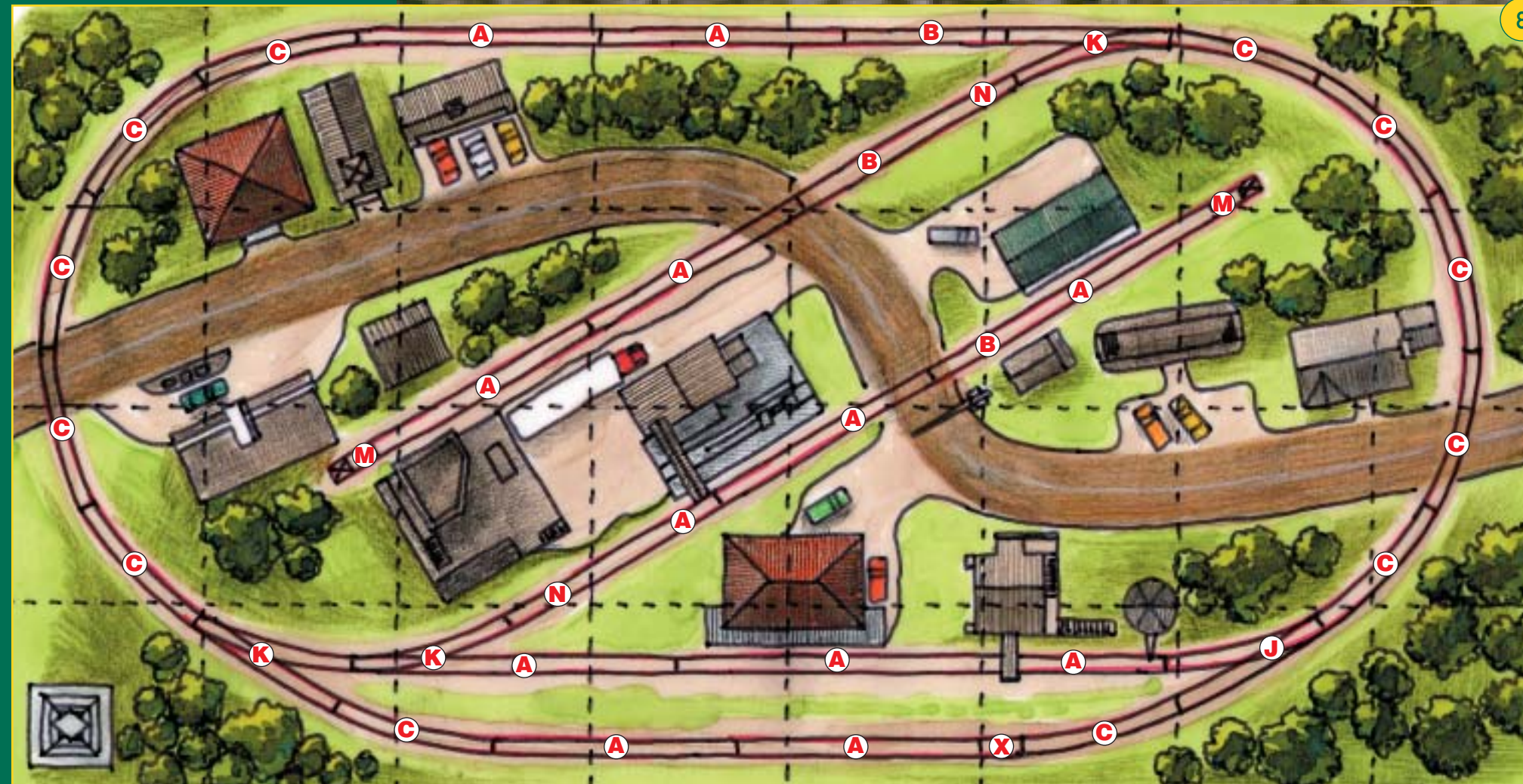
8. Once the cement has cured, turn joined roadbed section over (upside down) and determine optimum length to trim tie bed. Be sure that tie bed web does not interfere with supports of reinforcements on the bevel of the roadbed. The optimum length of the tie bed may need to be trimmed from the center or two sections may be needed.



9. Insert the trimmed tie bed into the roadbed, turnover and while holding the tie bed in place, insert the rail through the rail grabbers, spikes and lastly the metal rail joiner. Repeat with the other rail.



10. When using your new length of track, remember that the rails may slide away from the roadbed when this section is removed. This will not be a problem when the track is used in a layout.



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While the steamer in charge of the local peddler freight stops for a fresh load of coal and to fill its tank with water, the through train moving in the opposite direction pulls to a stop on the siding. After the steamer finishes taking on water and coal it pulls forward to start switching cars into the line-side industries.

Now the through freight gets the high ball to move on to its final destination.

When its chores are done at one siding, the way freight moves on to the next industrial siding. More freight is delivered and out-bound freight begins its journey

Not long after the freight trains have cleared the main, the commuter express pulls in with the tired commuters ready to head home for dinner and a relaxing evening.

#01593 Tacoma Transfer 4' X 8'

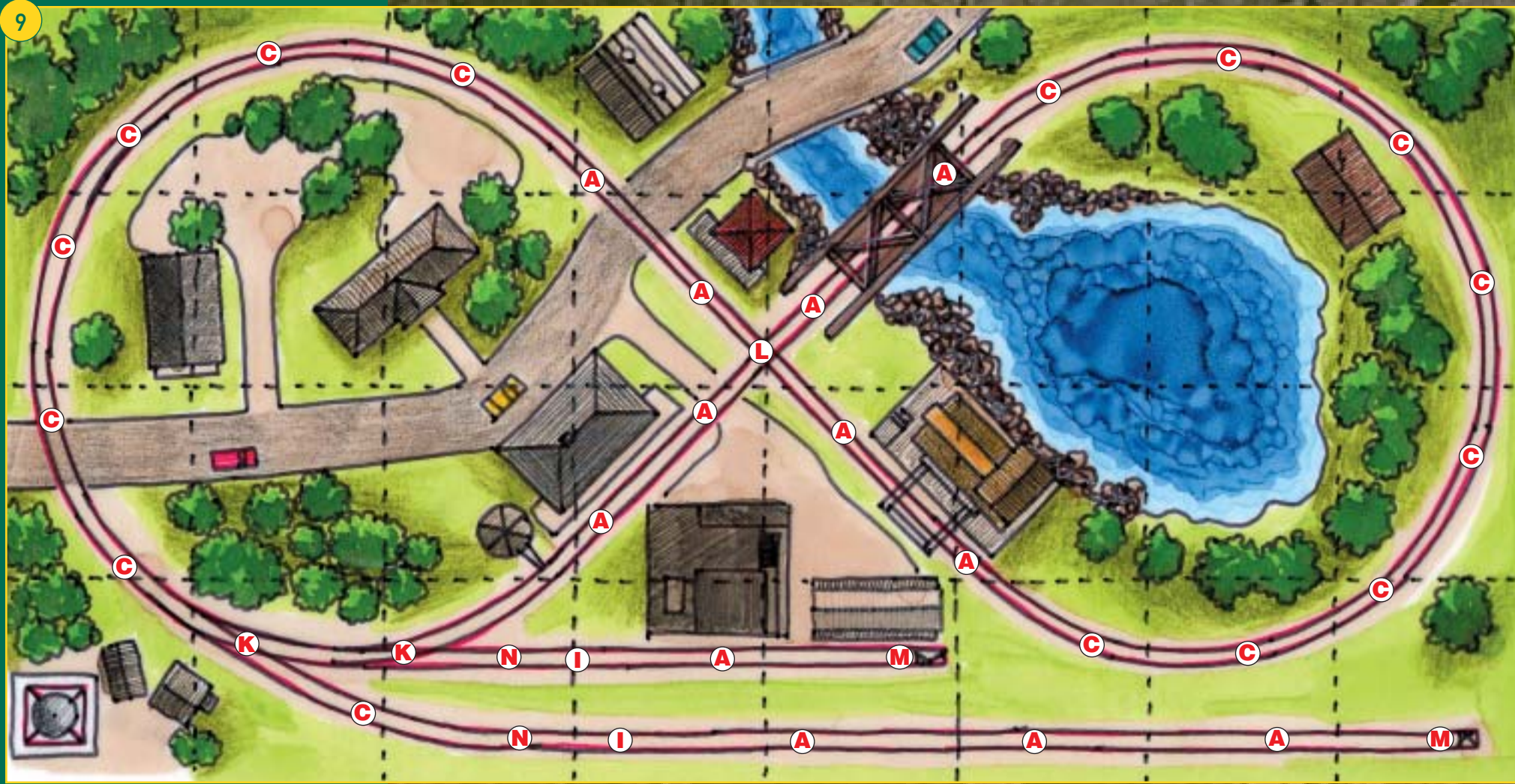
Bill of Materials:

A 11	15" straight sections	#00257	K 2	#3 Left Hand Switch	#00299A
B 3	10" straight sections	#00258	M 2	5" bumper, illuminated	#00468
C 12	20" 30° radius sections	#00259	N 2	Uncoupler sections	#00670
J 2	#3 Right Hand Switch	#00298A	X 1	Custom straight section (2.75")	

Uncoupler sections may be substituted with #00297 5" straight sections.

#00468 may be substituted with #00926 bumper

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.



Details ARE the Difference.

A simple figure-eight defines this layout. After looping around the lake, crossing the river and the diamond, your freight train pauses to deliver the raw materials to the manufacturers' sidings along the main line.

Other line-side industries provide plenty of additional revenue for the railroad. But there's still room for more. You can put your real estate team to work selling line side-land to even more potential shippers. Add a transfer warehouse, a grain elevator, a construction equipment dealer, a wholesale produce distributor. There's plenty of space for more customers not only on the three industrial sidings, but along the passing siding as well.

Note: The dead end siding to the lower right of the track plan could be used to connect to a future, expanded track plan or join with one of the other layouts here-in.

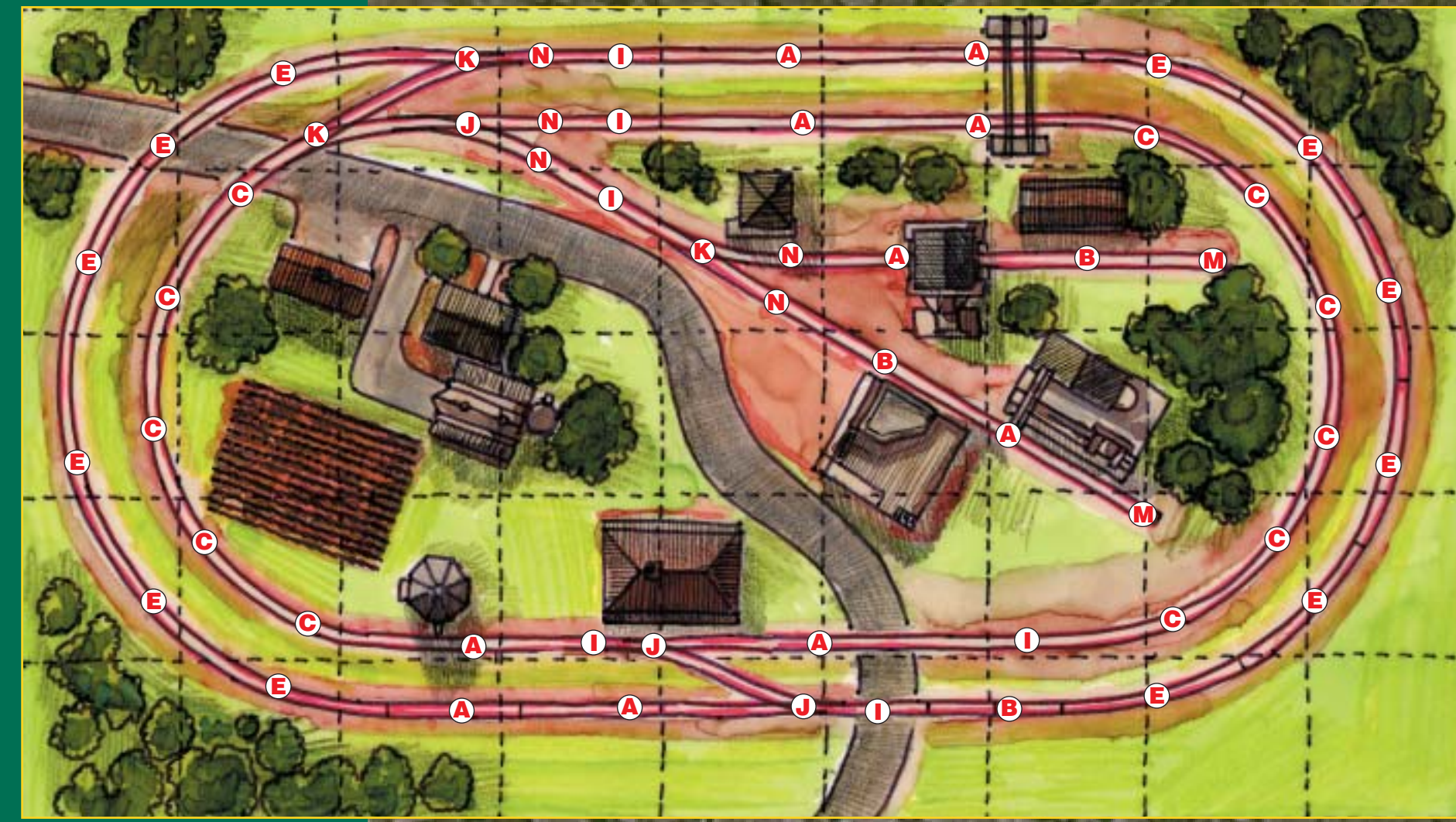
#01594 Norwalk Crossing 4' X 8'

Bill of Materials:

A 8	15" straight sections	#00257	K 2	#3 Left Hand Switch	#00298A
C 16	20" 30°radius sections	#00259	L 1	90° crossing	#00467
D 2	20" 15°radius sections	#00291	M 2	5" bumper, illuminated	#00468
I 2	5" straight sections	#00297	N 2	Uncoupler sections	#00670

Uncoupler sections may be substituted with #00297 5" straight sections.
 #00468 may be substituted with #00926 bumper

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.



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When an S scale pike goes up in size just one small foot in each direction, independent two-train operation is easy. Run one train continuously on the outer main line.

A wide variety of industries need different types of freight cars. Gondolas, hoppers and box cars move into the industrial sidings empty and leave filled with goods that will travel to customers across the country by rail.

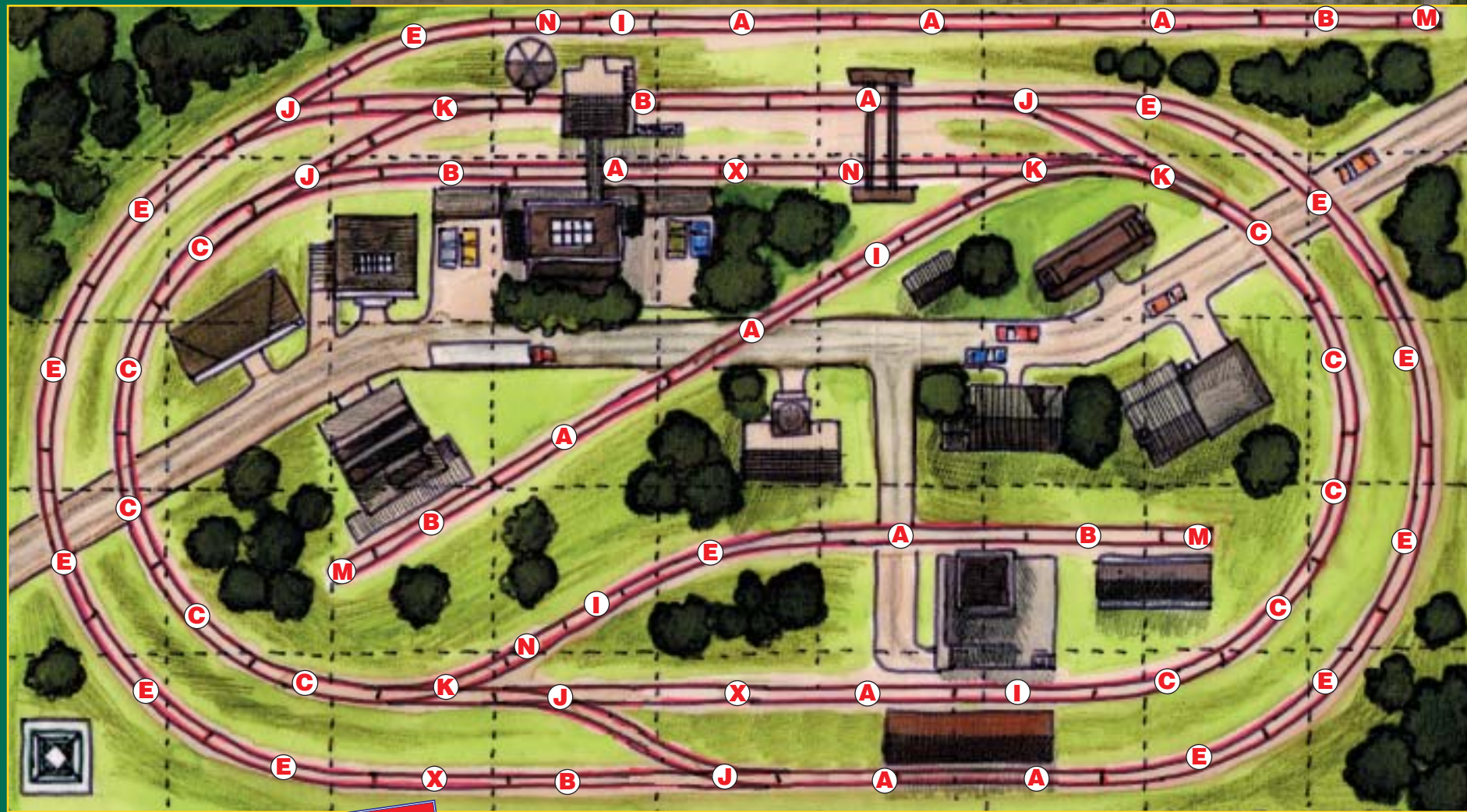
#01595 Macon Yard 5' X 9'

Bill of Materials:

A 10	15" straight sections	#00257	I 5	5" straight sections	#00297
B 3	10" straight sections	#00258	K 3	#3 Left Hand Switch	#00299A
C 11	20" 30°radius sections	#00259	M 2	5" bumper, illuminated	#00468
E 12	25" 30°radius sections	#00252	N 5	Uncoupler sections	#00670
J 3	#3 Right Hand Switch	#00298A			

Uncoupler sections may be substituted with #00297 5" straight sections.
 #00468 may be substituted with #00926 bumper

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.



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A New York Central 2-8-0 moves through Utica with a drag freight along the outer track, stopping to refill with water and coal. Another Central freight services the packing plant with stock cars full of cattle for processing. Meat products ready for market utilize refrigerator cars to move the processed meat. The flow of these cars must be constant to meet the country's demand for fresh meat products.

Meanwhile, the 55-gallon drum factory ships new drums to customers processing oil, lubricants and chemicals. Passengers are arriving at the station, awaiting the impending arrival of an express train to the city.

Note: The dead end siding to the lower right of the track plan could be used to connect to a future, expanded track plan or join with one of the other layouts here-in.

#01596 Utica Terminal 5' X 9'

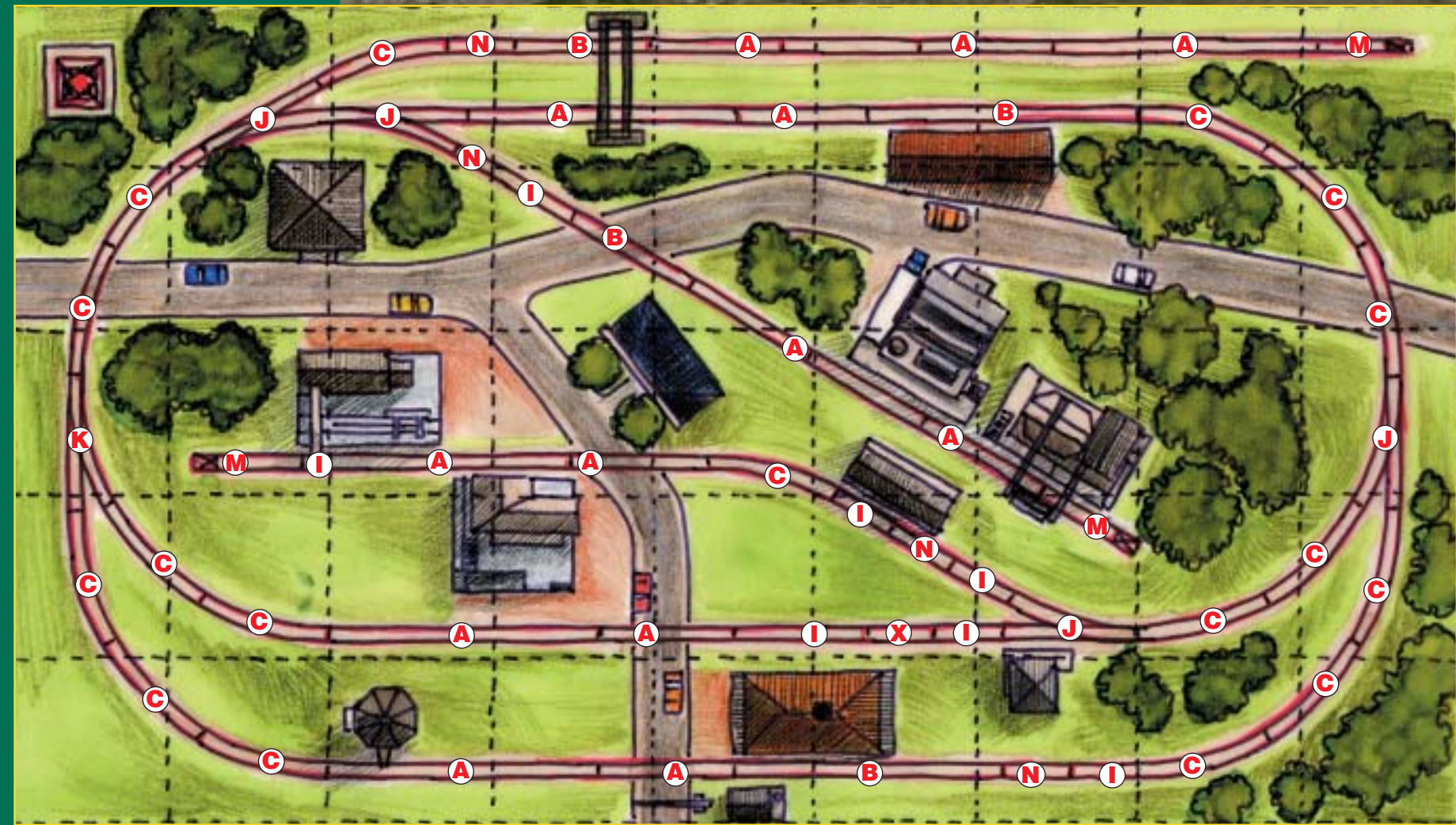
Bill of Materials:

- | | |
|--|--|
| A 12 15" straight sections #00257 | J 3 #3 Right Hand Switch #00298A |
| B 7 10" straight sections #00258 | K 4 #3 Left Hand Switch #00299A |
| C 10 20" 30° radius sections #00259 | M 3 5" bumper, illuminated #00468 |
| E 13 25" 30° radius sections #00292 | N 4 Uncoupler sections #006701 |
| I 4 5" straight sections #00297 | X 3 Custom straight sections
2 @ 9" and 1 @ 2 3/8" |

Uncoupler sections may be substituted with #00297 5" straight sections.

#00468 may be substituted with #00926 bumper

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.



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The peddler freight follows two different routes as it works its way along the rails to perform its duties. Moving cars to and from the industries along the line takes planned switching moves. The conductor of this train shows off his skill by servicing the line-side industries very efficiently.

Tall southern pines are felled by lumber jacks and moved to track side. Logs are loaded into waiting cars, then moved to the limber mills for processing to make dimension lumber for the construction industry. Loads of pine 2 x 4's and the like are loaded in to waiting freight cars to move to markets across the continent.

Note: The dead end siding to the lower right of the track plan could be used to connect to a future, expanded track plan or join with one of the other layouts here-in.

#01597 Decatur Exchange 5' X 9'

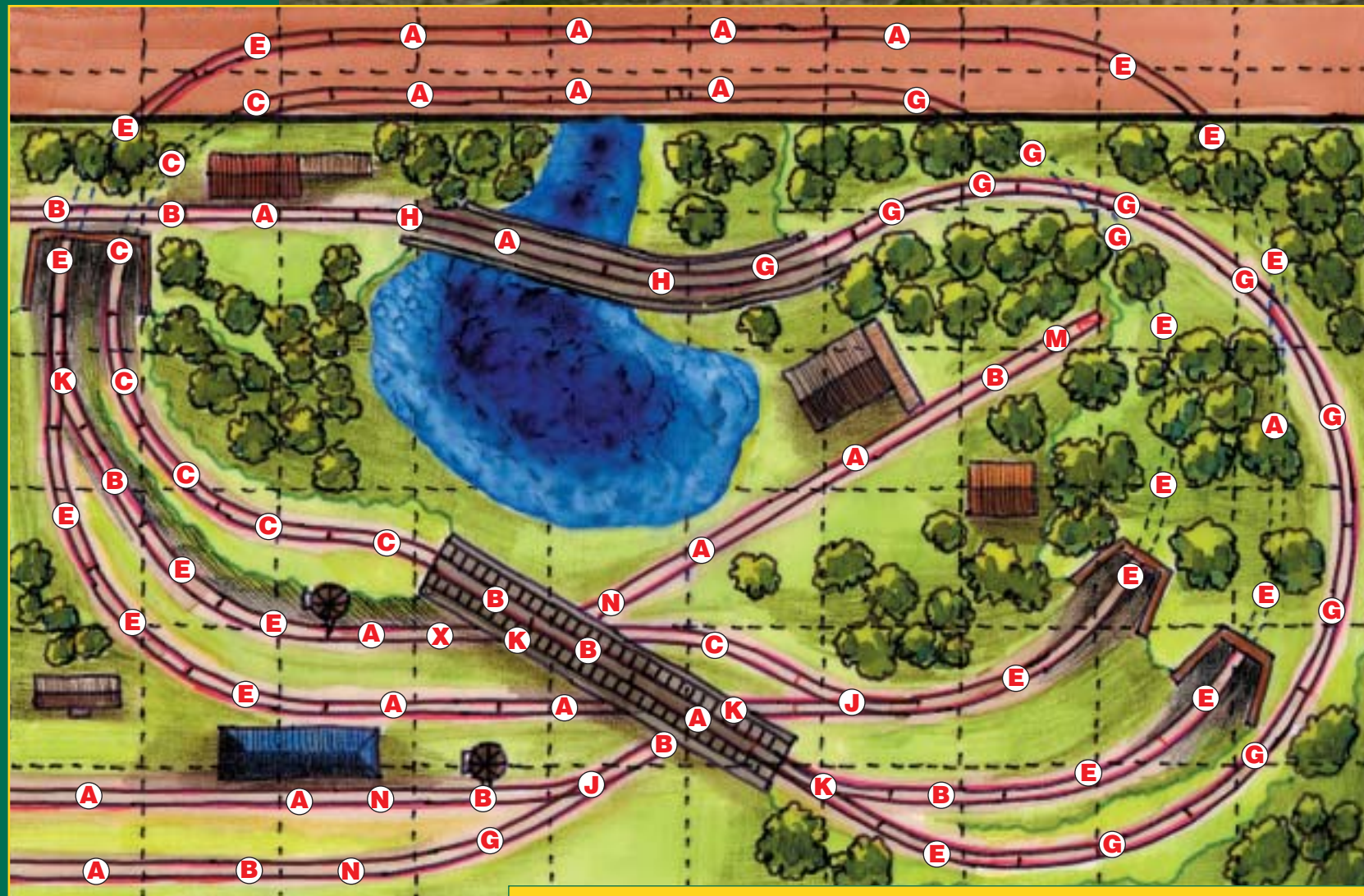
Bill of Materials:

- | | |
|--|--|
| A 13 15" straight sections #00257 | K 1 #3 Left Hand Switch #00299A |
| B 7 10" straight sections #00258 | M 3 5" bumper, illuminated #00468 |
| C 17 20" 30° radius sections #00259 | N 5 Uncoupler sections #00670 |
| I 5 5" straight sections #00297 | X 1 Custom straight section (6.25") |
| J 4 #3 Right Hand Switch #00298A | |

Uncoupler sections may be substituted with #00297 5" straight sections.

#00468 may be substituted with #00926 bumper

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.



#01598 Gorre and Daphetid 6' X 10'

The most famous model railroad of all time is John Allen's Gorre and Daphetid (pronounced gor-ree and de-fee-ted). It started out as a small, immaculately detailed pike about 4' by 7' in size. John, who was a professional photographer, produced memorable images of that small layout that graced the covers of many model railroad magazines during the 1950's and 60's.

This legendary central section became the center piece of what grew to be a basement sized wonderland. Many of the scenes on the expanded version of this legendary layout utilized awe-inspiring floor to ceiling scenery. Recreate those highly detailed cover photos on your own S scale version of Gorre and Daphetid.

Note: The dead end siding to the lower right of the track plan could be used to connect to a future, expanded track plan or join with one of the other layouts here-in.

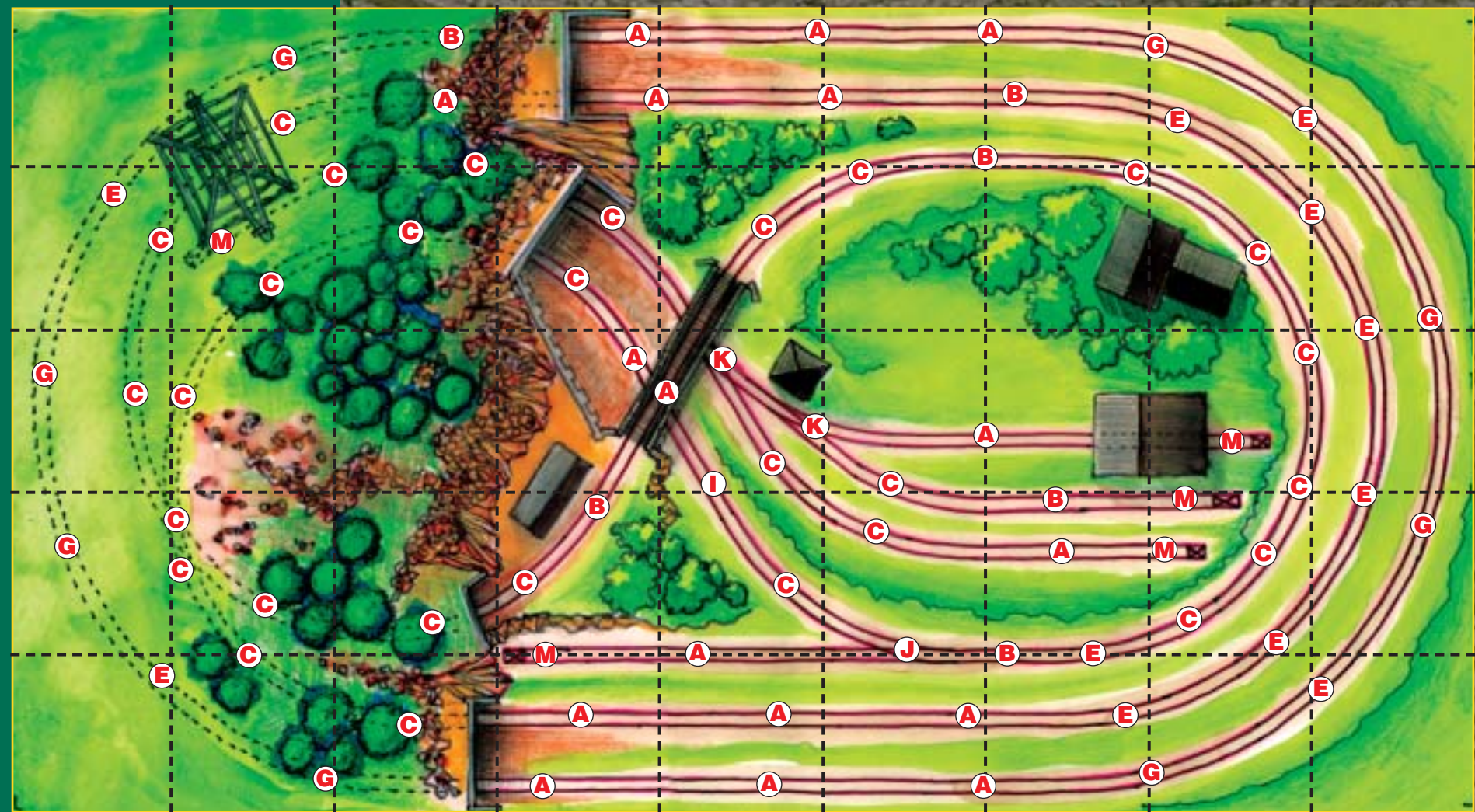
Bill of Materials:

A 19	15" straight sections	#00257	J 2	#3 Right Hand Switch	#00298A
B 10	10" straight sections	#00258	K 4	#3 Left Hand Switch	#00299A
C 8	20" 30° radius sections	#00259	M 1	5" bumper, illuminated	#00468
E 19	25" 30° radius sections	#00292	N 3	Uncoupler sections	#006701
G 11	30" 30° radius sections	#00294	X 1	Custom straight sections (6.25")	
H 2	30" 15° radius 1/2 sections	#00296			

Uncoupler sections may be substituted with #00297 5" straight sections.

#00468 may be substituted with #00926 bumper or track may extended on to next layout

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.



#01599 SHS Portable Layout 5' X 9'

This plan provides for plenty of operation. The outer loop furnishes continuous running of a train with significant length and grades that test the limits of the locomotives powering the train. The inside loop, a folded dog-bone, allows the operation of a second complete train. A third train switches the small industrial area delivering empty cars and picking up loaded ones on this point to point yard.

Over the next few pages, follow the basic construction steps used to transform this versatile track plan from a concept on paper to a finished layout, complete with scenery. Step-by-step you'll see The Showcase Line's portable 5' by 9' demonstration layout become the Showcase Line's world in miniature.

Note: A dead end siding to the lower left of the track plan could be used to connect to a future, expanded track plan or join with one of the other layouts here-in.

Bill of Materials:

A 16	15" straight sections	#00257	I 4	5" straight sections	#00297
B 5	10" straight sections	#00258	J 1	#3 Right Hand Switch	#00298A
C 28	20" 30° radius sections	#00259	K 2	#3 Left Hand Switch	#00299A
E 12	25" 30° radius sections	#00252	M 5	5" bumper, illuminated	#00468
G 8	30" 30° radius sections	#00294			

Uncoupler sections may be substituted with #00297 5" straight sections.

#00468 may be substituted with #00926 bumper

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.

To help with your miniature railroad world, any of the track plans in the guide provide a complete layout. Later, these track plans can be added to, incorporated into larger layouts or even combined with each other, thus increasing your miniature world as more space becomes available or as your interests develop.

Start by following the step-by-step construction of The Showcase Line's portable 5' 6" by 9' demonstration layout. If you have seen S Helper at a major train show recently you probably have seen this layout in action.

For additional design potential, S-Trax components are included with R & S Enterprises' RR-Track for Windows, Sandia Software's CADrail and Abracadata's® 3D Railroad Concept and Design software.

Over the next few pages, follow the basic construction steps used to transform this versatile track plan from the plan concept on paper to finished scenery. With the available space within this book, highly detailed layout building instructions are not possible.

For detailed instructions and hints on building frame work, scenery, layout wiring, etc. an array of excellent books by various other manufacturers and publishers are available from your local hobby shop. For details on the specialized products used on the Showcase Layout, see your local lumber yard/home improvement center or:

www.woodlandscenics.com
www.gorillaglue.com
www.dow.com/greatstuff/pro
www.hunt-corp.com
www.liquidnails.com
www.zonatool.com

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Building a layout is a simple, enjoyable activity which can involve the entire family. With today's variety of building materials, even a layout of this size can be portable.

With the use of 2" foam insulation sheets, available from your local lumber yard or home improvement store, this layout can easily be moved. It's weight is so low (well below 50 pounds) that two individuals can lift and move it with minimal effort.

The first step involves assembling the frame work from 1" X 3" boards cut to length. Boards laying flat are the base of the frame: using two ends, two sides and two cross-beams evenly spaced between and parallel with the ends. The perimeter is formed by 1x 2" boards mounted horizontally to the 1" x 3" boards, which provides a rigid "L" that will keep the layout flat and square. Metal corner braces are optional, but recommended for extra rigidity. The vertical boards will later be painted to provide a pleasing fascia for the finished layout and protect the edges of the scenery from damage.

The layout can be supported in a variety of ways. Folding leg units can be purchased or permanent legs can be built using 2-inch by 2-inch lumber with either 1-inch by 4-inch boards or cut plywood to provide gussets for the legs. Some have used a ping pong table for support. For shows we use Lifetime™ standard 30-inch by 6-foot tables. (Available at office supply or home improvement stores) Two-inch thick, rigid insulating foam is cut to size and inserted into the frame work. It is glued in place with either carpenter's glue, construction adhesive, or with a low-temp hot glue gun. Allow the glue to set thoroughly before proceeding.



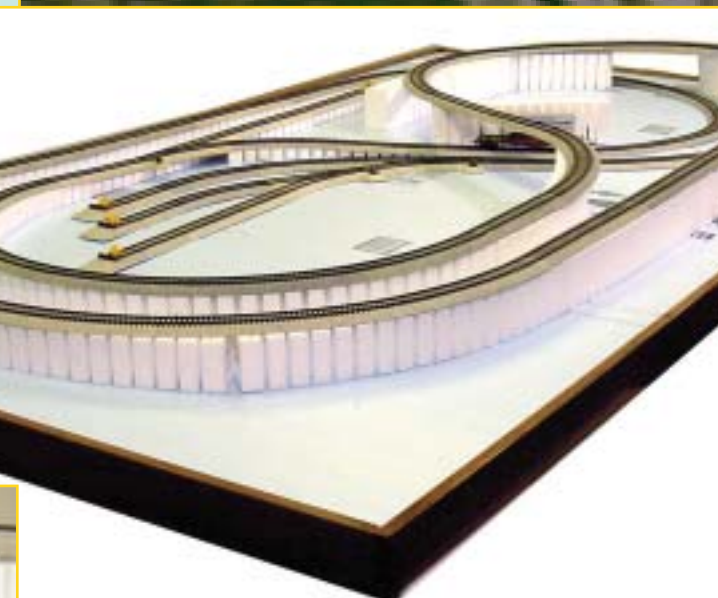
When all of the glue is cured, assemble your track on the foam surface. Connect all the track sections together as shown on the track plan you have chosen. Do not be concerned with the up- and down-grades, bridges, etc., if the pieces of track lay on top of one another that is okay. When the track is fully assembled use a pencil or fine point marker to outline the edges of both sides of all the track. These marks are for reference only, as you may have to make adjustments due to changes in elevation. Make notations at all locations where you will need to run feeder wires to the track or control wires to switches, accessories and the like.

Woodland Scenics manufactures a line of HO foam risers, inclines and other items that accommodate our S-Trax, allowing you to create hills, railroad embankments, and such to add interesting terrain to your layout. Available from your local hobby shop, grade inclines come in 2%, 3% and 4% sizes with risers available in 1/2", 1", 2" and 4" sizes. The width of these inclines and risers are the width of our S-Trax roadbed. This particular layout uses the 2% and 4% inclines. And rises to an elevation of 5".

With the track still assembled, test fit all of the inclines and risers you are planning on using. They can be held in place temporarily with masking tape. Before finalizing the location and height of the track, get your tallest and your longest train car or locomotive. Pass it under all of the planned tunnel portals, bridges and other such obstacles on the entire track plan (be sure to account for any dimensions of the cosmetic bridges, tunnel portals, etc. that will be added to the foam pieces). Make sure that it clears the underside of those obstacles by a minimum of 1/4"! Also verify that your longest equipment does not scrape against the edges of tunnel portals, etc. on the curves.



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When you are satisfied that all of your equipment has the proper clearances beneath bridges and inside tunnels, verify the markings of the track edges that you made earlier. Once markings are verified or any corrections are made, remove all of the track, and inclines and risers. Drill out all the holes necessary for running the wiring underneath the layout. Proceed to glue in place all of the inclines and risers that the track plan requires. Again, carpenter's or low-temp hot glue will hold everything well. When necessary, hold the inclines and risers in place with tape and weights until the glue has cured.

When all of the risers and inclines are firmly in place, reassemble the track on the foam surface, the inclines or risers. Check fit of all track, as well as, all clearances of all tunnel portals, bridges, etc. Risers can be finished with gray paint to simulate concrete. Or you can use carved foam to match the edges of the risers and inclines. Foam can be shaped with an inexpensive steak knife, a rasp or a hot wire foam cutter (CAUTION! Use hot wire foam cutters ONLY in well ventilated areas and follow all safety precautions included with the hot wire cutter!).

Another possibility is to use aerosol cans of liquid foam (Great Stuff™ Dow Chemical) to fill gaps or build embankments. These liquid foams are available from lumber yards or home improvement centers. Liquid foams expand considerably as they set, so start with a little, allow that to set and apply another coat. Repeat with additional coats until the desired surface is achieved. (Wear gloves to protect your hands from contact with the foam, since it is difficult to remove from skin.) Plan ahead, as the nozzle can become clogged after one usage. Be prepared to cover enough area to use a full can.

After all of the foam along the track has been shaped to your satisfaction, it is time to reassemble all the track and check all clearances again.



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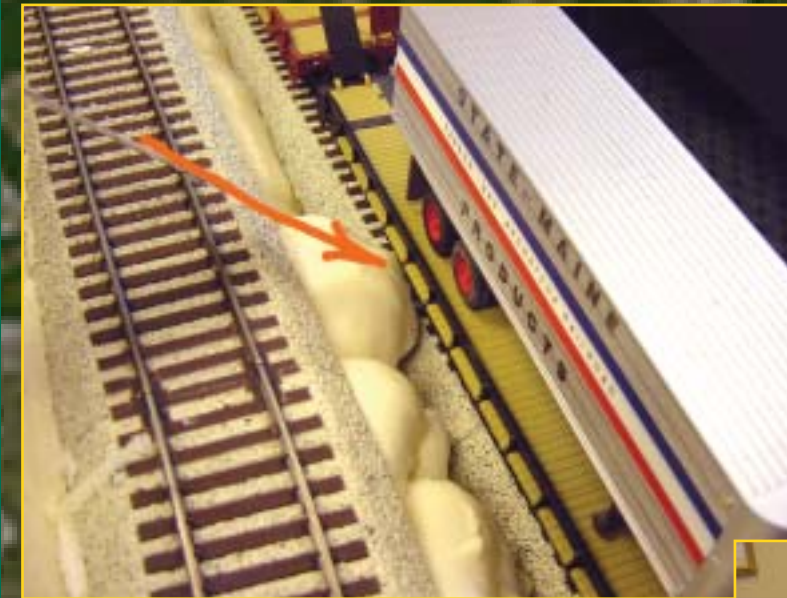
Check along all of the track for foam that is too high or close to the track and may scrape against the passing trains. Wherever the foam is scraping passing trains, carve it back away from the track using a steak knife, rasp or hot wire foam cutter.

After checking the clearances, connect all of the wiring to the track. Test operate the layout. Use every switch, every siding, every accessory. Once everything is operating smoothly, without a flaw, fasten the track with all wiring in place. With low-temp hot glue

After the track is set, check the operation of the layout one more time. Building a mountain is begun by creating a foundation from foam insulation. For small hills, foam layers are cut to the rough shape of the hill and glued in place flat. For large mountains, foam piers are cut to the desired shape and glued vertically in place.

It is wise to provide access to the inside of any tunnels, mountains, etc. where the trains are hidden from the general view of the layout. This will provide access in case of any derailments or other problems inside those areas.

Over the foam piers, corrugated cardboard strips are hot-glued in place to form a grid. Glue the cardboard to the foam wherever it makes contact. Also glue the cardboard strip to each other wherever they cross. The shape does not need to be smooth. Later steps will provide the actual mountain surface. Several different techniques can be used to form the mountain terrain. If weight is not a factor or if the set need not be mobile, then plaster cloth or hard shell construction may be used. This technique is covered in several books on model railroad scenery, so we will not demonstrate it here.



Details ARE the Difference.™



The mountains were constructed from urethane panels and rock castings made using the Geodesic Foam Scenery™ system. (manufactured by Bragdon Ent. 530-333-1365, www.bragdonent.com) It creates an incredibly strong and light weight scenery. Follow instructions enclosed with the trial kit. The Geodesic Foam panels are laid over the grid and attached to cardboard strips with hot glue. Geodesic Foam Rock castings are hot glued to the foam panels. Use the aerosol expanding foam to fill any gaps left between panels. You can shape the panels and the foam to represent either smooth terrain or jagged rocks as you desire. We used silicon a spatula to smooth the just applied aerosol foam.



When all of the inclines, risers, hills and mountains are shaped as you like them, it is time to add details such a tunnel portals, bridges, bridge supports and the like. Once again check clearances with operating train.

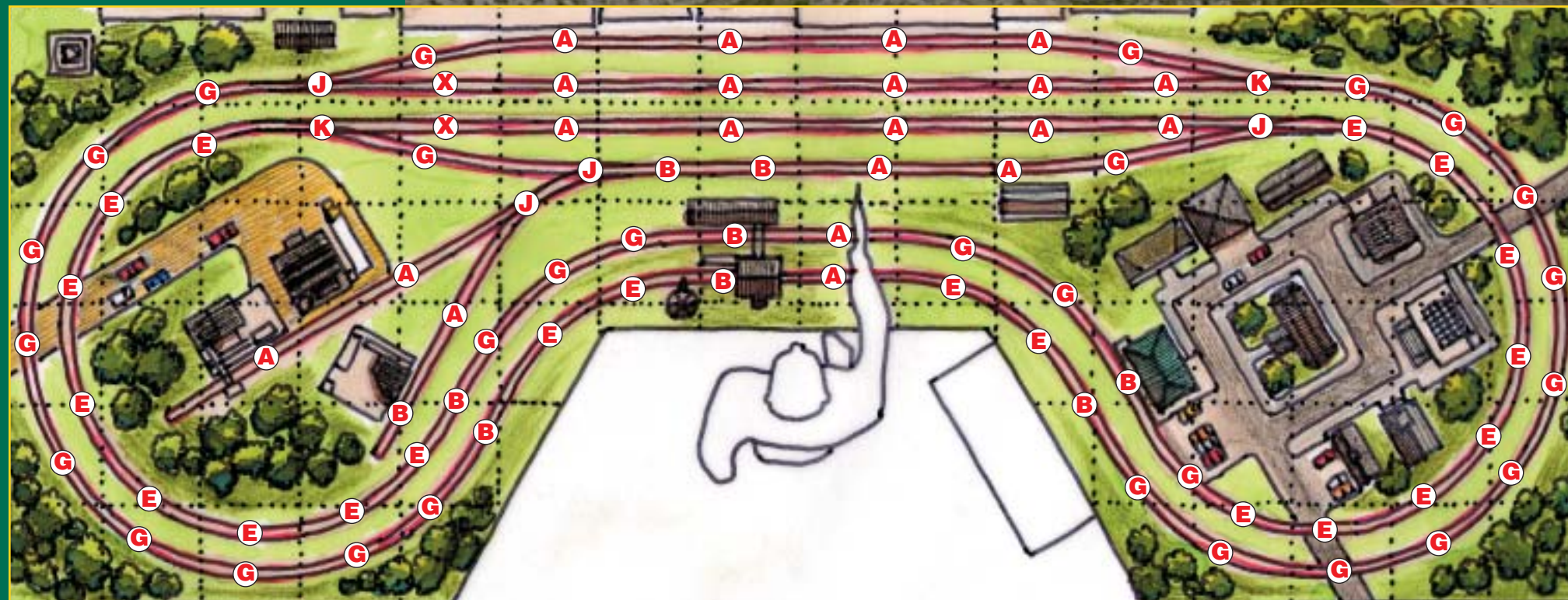
There are several books available that provide complete details on scenery finishing. We recommend utilizing the Woodland Scenics Scenery systems. Spread ground foam, grass, weeds, trees, etc. to your taste. Place all the structures onto the layout and mark their locations. Remove them and put in place the scenic details that are appropriate to the structures. This would include roads, sidewalks and other landscaping details. Replace the structures. Place vehicles, and figures of people and animals, as desired.



Once dry, CLEAN YOUR TRACKS. Surprising amounts of dirt and foam can get on your tracks while you are working.

Add the trains and start to enjoy this miniature world that you created!

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St. Joseph is a hub for several major rail lines. The St. Joe belt line provides connections for the interchange of traffic between the Class 1's serving the area. It also connects line-side industries with those Class 1 railroads to allow national distribution of local products.

The outer loop, with its passing siding moves interchange cars between lines quickly, often letting through trains move past. The inner loop picks up loads of finished goods and delivers raw material to the industries of St. Joseph.

#01600 St. Joseph Belt Line 6' X 16'

Bill of Materials:

- A** 23 15" straight sections #00257
- B** 4 10" straight sections #00258
- E** 20 25" 30° radius sections #00292
- G** 26 30" 30° radius sections #00294
- J** 2 #3 Right Hand Switch #00298A
- K** 4 #3 Left Hand Switch #00299A
- M** 2 5" bumper, illuminated #00468
- X** 2 Custom straight section (13")

SPECIAL NOTE: #3 Switches can be substituted for #5 Switches. Custom track sections can be shorter.

Uncoupler sections may be substituted with #00297 5" straight sections.

#00468 may be substituted with #00926 bumper

#00298A and #00299A electrical switches may be substituted with #00463A and #00464A manual switches.

- 155# Nickel-silver rail
- Individual Celcon® ties with molded wood grain
- Realistic "T" section Rail
- ABS decorated ballasted roadbed
- Multiple radius curved track with AF compatible 5" centers

S-Trax components are compatible with A.C. Gilbert American Flyer S-Gauge track. (Also K-line® and Gargraves S-gauge track.) The #00393 AF track adapter allows use of the S-Trax components to expand an existing layout.

For American Flyer fans the #00670 uncoupler and the #00671 action car pick-up sections are great for use with A.C. Gilbert cars and couplers.

Remote control switches include an illuminated controller with red and green LED's to indicate status of the switch. The controller, available separately, can be used as a direct replacement for A.C. Gilbert American Flyer switches. Manual switches are identical to the remote control switches but are not illuminated and operated by hand.



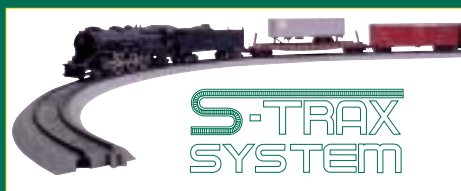
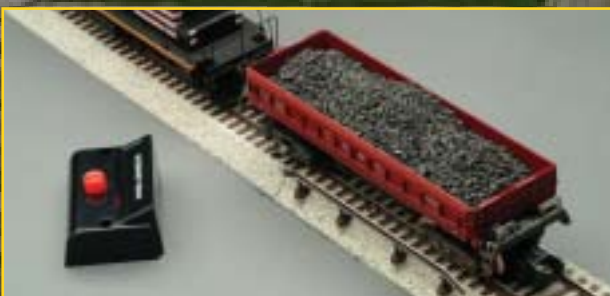
#00393 AF track compatible Rail Joiner Used with your S-Trax System to connect to American Flyer track.



5" Induction Coil (Uncoupler) #00670 \$19.95



5" Outside 3rd Rail (Accessory Track) #00671 \$19.95



S-Flex Track . . .

S-Flex flexible track is available in 40" sections with PRR Main Line tie spacing.

S-Flex track sections allow you to create an infinite variety of curves. While the layouts in this guide utilize sectional track, flex track can be added for a more customized layout.

S-Flex track has the ability to bend without kinking and return to a straight profile easily, allowing you to reproduce more realistic prototypical curves.

Laying S-Flex . . .

- 1) Draw a centerline on your table to serve as a guide for laying S-Flex.
- 2) Start bending the S-Flex along the centerline you have drawn on the layout. Temporarily secure the track with push-pins as you go along.
- 3) Using a dremel-tool with a cut-off disc, trim the rails at the free end. The rails should be cut evenly across.
- 4) Slide on the #00660 Railjoiners. You now have a finished track end.
- 5) Test that you have smooth operation on the tracks and joints.
- 6) Once you are satisfied with the track. Secure the track permanently with yellow carpenter's glue on either side of the centerline.
- 7) Power is added by cleaning the bottom of #00660 Railjoiners. Solder a length of #22 gauge wire to the flat surface of the railjoiner.

Notched Homabed . . .

Our notched Homabed is roadbed for connecting flex track to our sectional track. The roadbed has a 45° bevel to match our sectional track as well as American Flyer rubber roadbed. The curved sections have slots cut in for easy bending to almost any radius. Homabed includes a few notched sections that fit the locking tabs of our sectional track.



If you are using S-Trax sectional components with flex track to achieve a special curve radii or for any other special purpose, you will want to use the S-Trax compatible, 3/8" thick Homabed.

As before, mark the center line of the path for the flex track. Begin gluing the roadbed in place as above. Use the notched end of the Homabed to mate with the mechanical interlock of the S-Trax sectional track.

After the roadbed is in place and all of the glue is cured, add a rail joiner to one rail of the flex track. Connect the flex track to the sectional track, additional flex track sections together, and the other end of the flex track run to the sectional track opposite the original track connections. When you have checked the track for proper operation, you can ballast the flex track as above.

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