



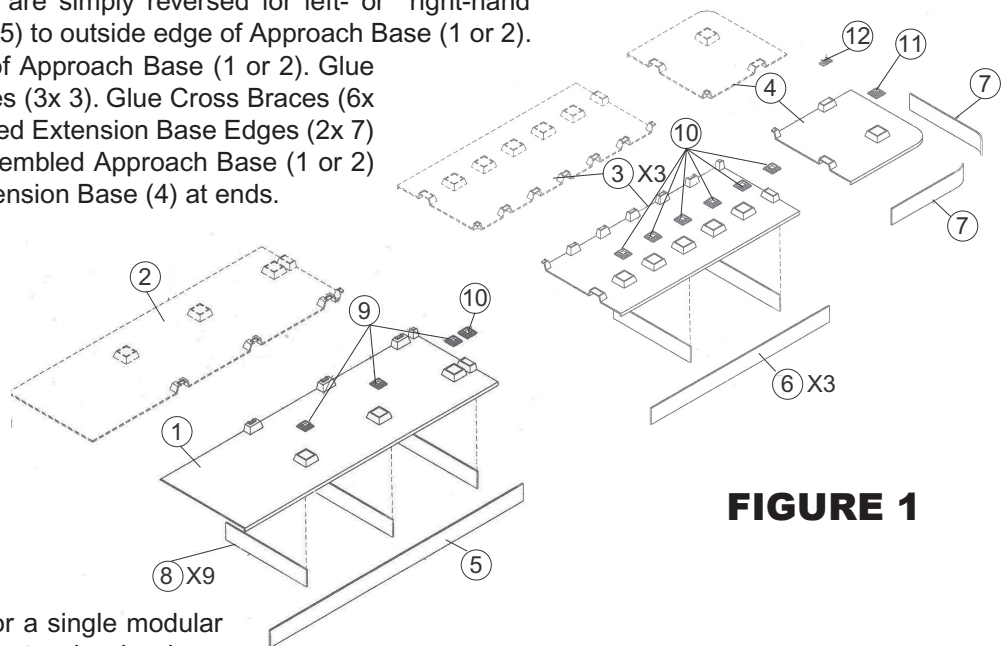
## HO Structure Kit **ORE DOCK** 933-3065

Thanks for purchasing this Cornerstone kit. All parts are styrene plastic, so use compatible glue and paint to finish your model. If you wish to paint your model, you may find it easier to do so before starting construction. **IMPORTANT NOTE:** Please read these instructions and study the drawings carefully before starting; the dock section consists of three modules, which are combined into one larger structure — for clarity, all illustrations show a single module assembly. The standard kit builds a single-sided dock with 18 pockets that can be placed directly against a backdrop. This version has two-tracks, each holding up to nine standard 24' (7.3m) ore cars. Mirror-image Bases (1, 2) and Decks (28, 29) are provided to build your choice of Left- or Right-hand Approaches. Using two or more kits (each sold separately), parts can be combined to build a full-width dock with four tracks or increase the number of pockets as desired.

Iron ore obtained from hematite, magnetite, limonite or taconite is the key raw material for making iron and steel. Once mined, ore is cleaned and/or processed before being shipped to the blast furnaces. Since enormous volumes are needed and natural ores are extremely heavy, transporting it has become an industry in itself. As demand grew in the 19th century, vast deposits were discovered in Michigan in 1844. Ships began hauling small quantities to ports on the lower lakes, but loading and unloading was done entirely by hand, and took considerable time. In 1857, the first purpose-built ore-loading dock was erected at Marquette, Michigan, patterned after similar structures used back east to load coal. Able to load larger cargoes in less time, the docks led to a new generation of purpose-built ore boats (naval tradition notwithstanding, ships of any size are “boats” on the Great Lakes), and within a few years several docks were operating along the upper lakes. Simple in design, the first consisted of heavy timbers (steel and concrete were introduced in the early 20th century), bolted together to support giant storage “pockets.” Located on both sides to serve several vessels at once, each might hold three to seven tons of ore. The floor was built at a 45° angle so gravity would force the ore downward. At the bottom, a lift gate held ore in place until a large metal chute was lowered, directing the flow into the boat’s hold. Moving ore from mines to docks quickly became a job for railroads, but its immense weight required small purpose-built cars known as “jennies.” The dock operations were equally complex, requiring their own classification yards, as customers ordered and blended specific grades of ore based on iron and chemical content. Getting loads to the top of the dock required equally large trestle-type ramps that branched into two, three or four tracks to speed unloading. To minimize loading time, specific pockets were assigned to each arriving vessel, which also determined where cars were spotted and unloaded. Since the load was specific to the customer, and dock space in constant demand, trains were scheduled to arrive just before the boats. Since a dock might be loading up to four boats at once, the top deck was a beehive of activity, with a constant movement of loaded and empty cars. It was common for docks to be built near each other, each owned and operated by a different railroad, but some later had pool agreements, sharing cars, crews, engines and dock facilities. The high-water mark came during WWII, and many docks closed in the late 1950s as the industry shifted from natural ores to taconite pellets. The introduction of larger boats up to 1000' (304.8m) long and conveyor loading/unloading systems made many of the remaining docks obsolete, but a handful have been modernized and are still used today. When completed, your new model will be the centerpiece of a waterfront or steel-themed layout. Built stock, the narrow profile and overall height make it an ideal a background structure, or scenic view block. The model has also been designed so you can easily build a longer or wider structure by combining additional kits (each sold separately). Most railroads assigned heavy motive power to the “dock jobs” including bigger steam switchers (sometimes converted from road engines) and later six-axle diesels such as the SD7 and SD9. Ore jennies were originally built to fit the narrower docks in Michigan, with a slightly larger style used in Minnesota, but both types were eventually used throughout the ore districts. For additional details, figures and accessories to complete your scene see your local hobby shop, check out the latest Walthers Model Railroad Reference Book or visit us online at [walthers.com](http://walthers.com).

1) PLEASE NOTE: Use Bases shown with solid lines (1, 3, 4) for a right-hand dock, use Bases shown with dotted lines (2, 3, 4) for a left-hand dock. If you are combining kits for a double-width dock, use all Base parts (1, 2, 3, 4). Note that Pocket Bases (3x 3) and Deck Extension Base (4) are simply reversed for left- or right-hand assembly. Glue Approach Base Edge (5) to outside edge of Approach Base (1 or 2). Glue Cross Braces (3x 8) to bottom of Approach Base (1 or 2). Glue Deck Base Edges (3x 6) to Deck Bases (3x 3). Glue Cross Braces (6x 8) to bottom of Deck Bases. Glue curved Extension Base Edges (2x 7) to Deck Extension Base (4). Glue assembled Approach Base (1 or 2) to Deck Bases (3x 3) and to Deck Extension Base (4) at ends.

2) Note that Footings (9, 10, 11) look similar; make sure you have the correct parts before removing them from the sprues. Glue Approach Footings (3x 9) to Approach Base. Glue Deck Footings (18x 10) to Deck Bases as shown. Glue Extension Footing (11) to floor of Extension Deck as shown and Half Footing (12) to the outside edge as shown.



**FIGURE 1**

3) NOTE: Figure 2 shows assembly for a single modular dock section with the approach and extension in place; you'll actually construct three "center" modular sections (more if you're building a longer or wider model). Glue the first Main Support (16) to the Footings that overlap the Approach Base and the Deck Base as shown. Glue Main

Supports (16; 6x each or 18 total on three sections) to the Footings on each Deck Base (3). OPTIONAL: If you are combining kits, glue pairs of Main Supports back-to-back on left and right bases. Glue Pocket Fronts (3x 21; one for each of three sections) to Main Supports. Slide, but do not glue Pocket Floors (23; 6x each or 18 total on three sections) into place at the back of each pocket. Glue Pocket Backs (3x 22; one for each of three sections) in place using liquid cement applied to the inside.

4) Carefully sand or file the draft marks from the bottom of the Extension Support (17) and glue to Footings on Extension Base (4) as shown. OPTIONAL: If you are combining kits, glue a pair of Extension Supports back-to-back on left and right bases. Glue Left Girders (2x 20) and Right Girders (2x 43) into slots on the last Main Support (16) and alongside the X-shaped bracing on Extension Support.

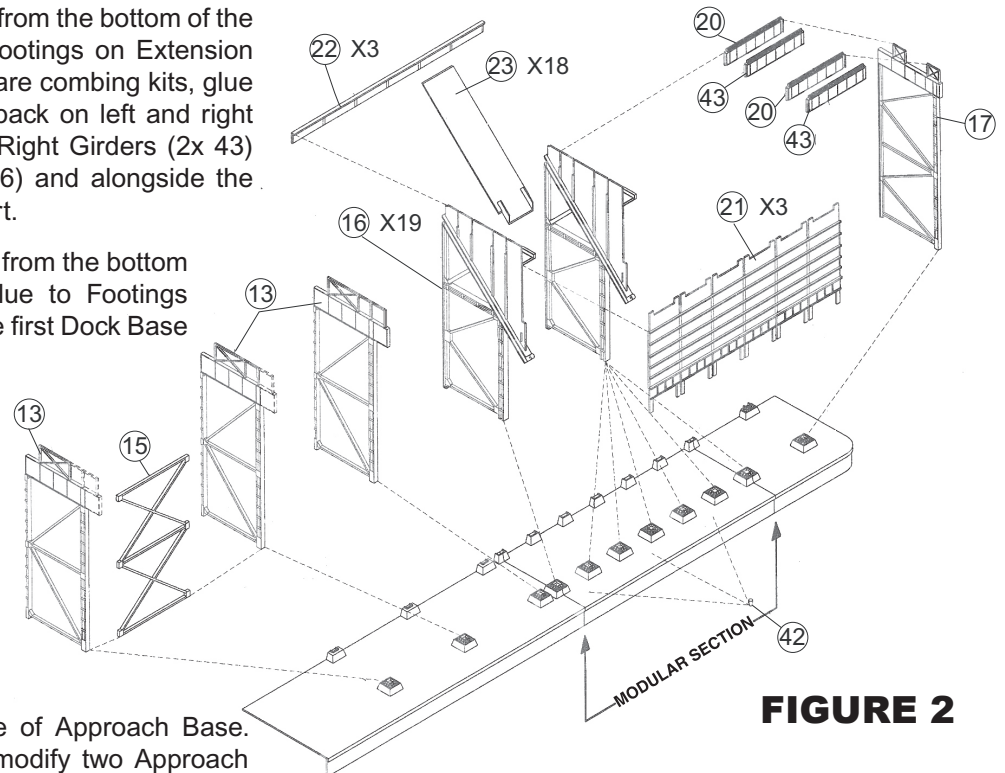
5) Carefully sand or file the draft marks from the bottom of an Approach Support (13) and glue to Footings where the Approach Base (4) meets the first Dock Base (3) as shown.

NOTE: See Illustration in Figure 3 for a view of how to modify and install parts in steps 6 & 7.

6) Carefully sand or file the draft marks from the bottom of an Approach Support (13). Using the support leg as a guide carefully cut away the portion of the girder extending beyond the leg and the gluing structure directly above the girder. Glue to Footings in middle of Approach Base. OPTIONAL: If you are combining kits, modify two Approach Supports in the same way and glue-back-to-back, one each on the left and right bases.

7) Carefully sand or file the draft marks from the bottom of an Approach Support (13). Using the support leg as a guide carefully cut away the portion of the girder extending beyond the leg. Carefully cut away the gluing structure directly above the girder, and the remaining gluing structure to the right of the X-shaped bracing. Glue to Footings at the end of Approach Base. OPTIONAL: If you are combining kits, modify two Approach Supports in the same way and glue-back-to-back, one each on the left and right bases.

8) Glue the Approach Cross Braces (15) Between the Approach Supports at the end and middle of the Approach Base.



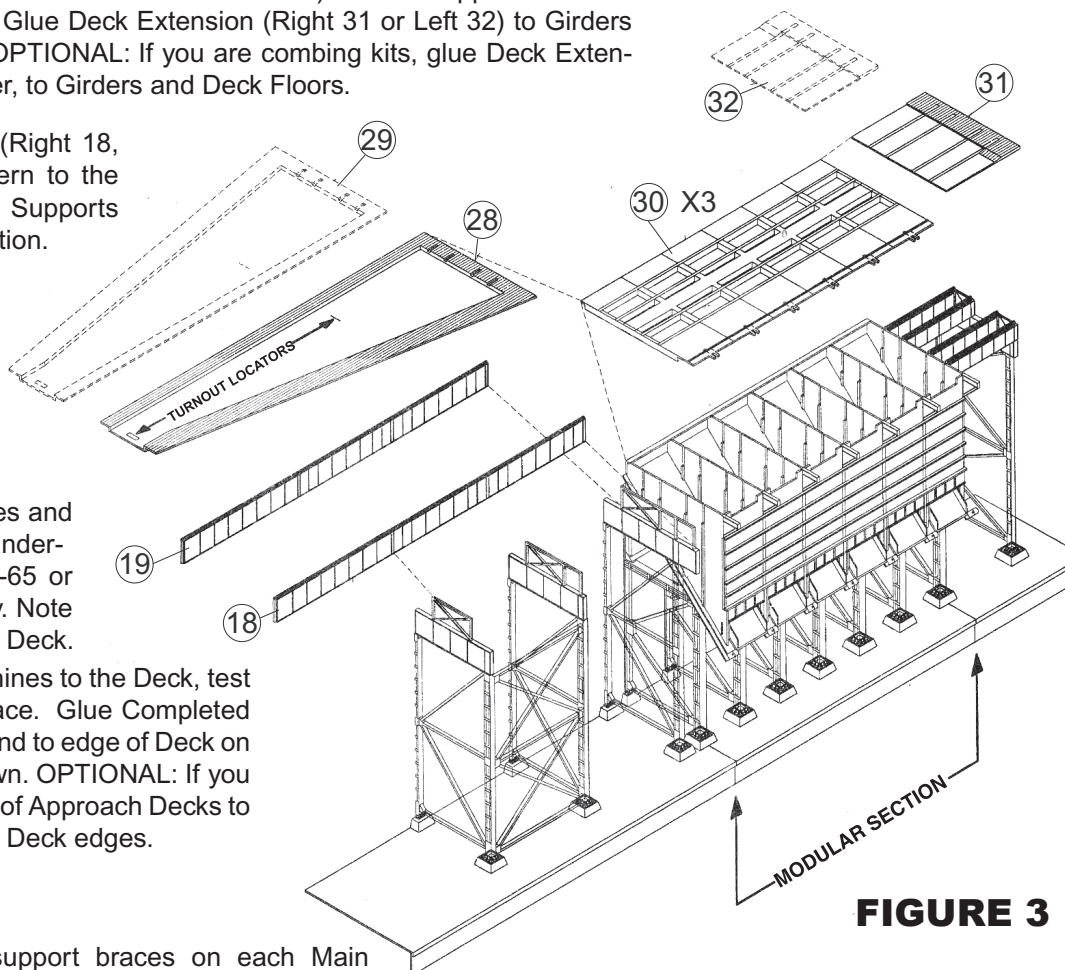
**FIGURE 2**

9) Glue Deck Floor (3x 30; one for each of three sections) to Main Supports on each completed pocket assembly. Glue Deck Extension (Right 31 or Left 32) to Girders and to edge of Deck Floor. OPTIONAL: If you are combining kits, glue Deck Extensions 31 and 32 to each other, to Girders and Deck Floors.

10) Glue Approach Girders (Right 18, Left 19) in a V-shaped pattern to the three completed Approach Supports and to edge of first Deck section.

11) NOTE: Approach Decks (Right 28, Left 29) accept Atlas #4 Custom-Line® Code 83 Turnouts #150-561 Left Hand or #150-562 Right Hand, both sold separately. For remote operation, drill a hole in deck pieces and install the Remote Control Under-Table Switch Machine #150-65 or 150-66, both sold separately. Note the turnout locators on the Deck.

Test fit track and switch machines to the Deck, test for operation then glue in place. Glue Completed Approach Decks to Girders and to edge of Deck on first modular section as shown. OPTIONAL: If you are combining kits, glue edges of Approach Decks to each other, to Girders and to Deck edges.

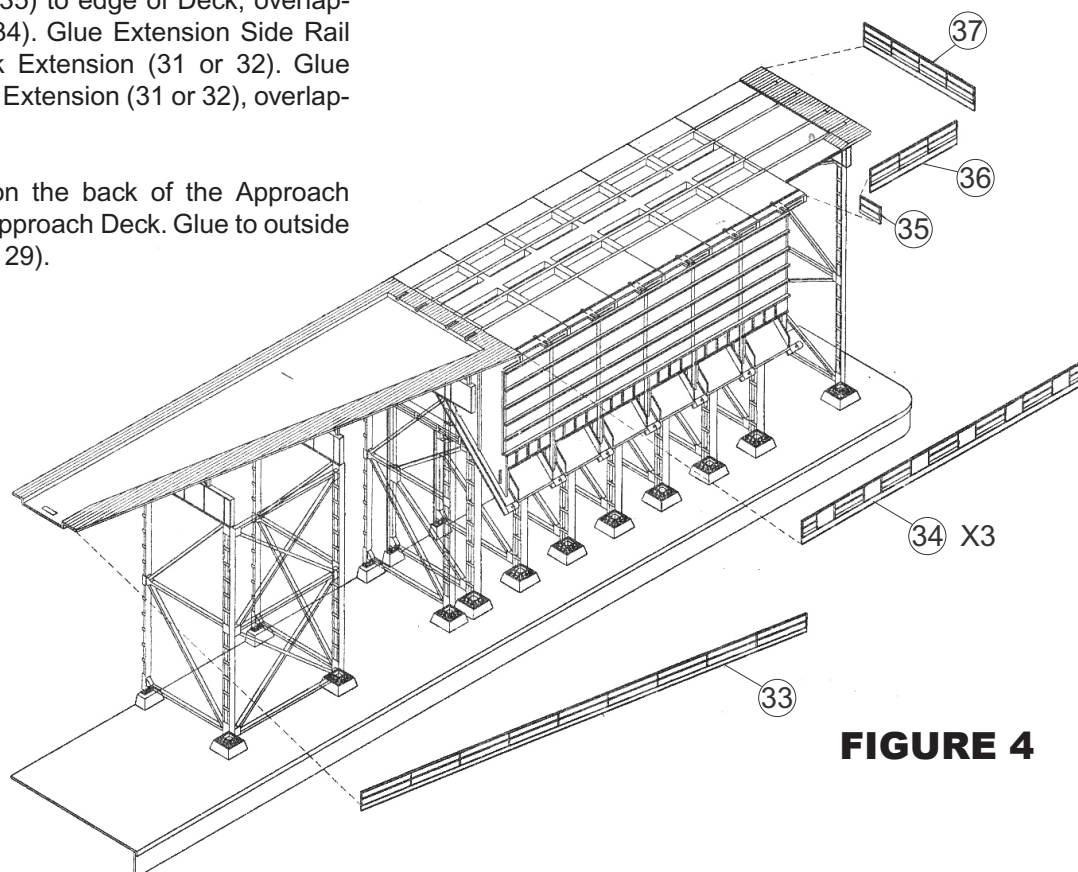


**FIGURE 3**

12) Make sure the deck support braces on each Main Support (16) do not extend past the Deck, and file or sand as needed. Note the locating ridge on the back of the Pocket Railings (3x 34) goes below the Deck (30). Glue Pocket Railings (3 x 34; one for each of three sections) to the outside edge of the Deck on each completed pocket assembly.

13) Glue Small Deck Railing (35) to edge of Deck, overlapping the last Pocket Railing (34). Glue Extension Side Rail (36) to outside edge of Deck Extension (31 or 32). Glue Extension End Railing to Deck Extension (31 or 32), overlapping Side Rail (36).

14) Note the locating ridge on the back of the Approach Railings (33) goes below the Approach Deck. Glue to outside edge of Approach Deck (28 or 29).



**FIGURE 4**



15) Make sure the holes in the Lifting Yoke Eyes (18x 26) face towards the pockets, and glue to Chutes (18x 24).

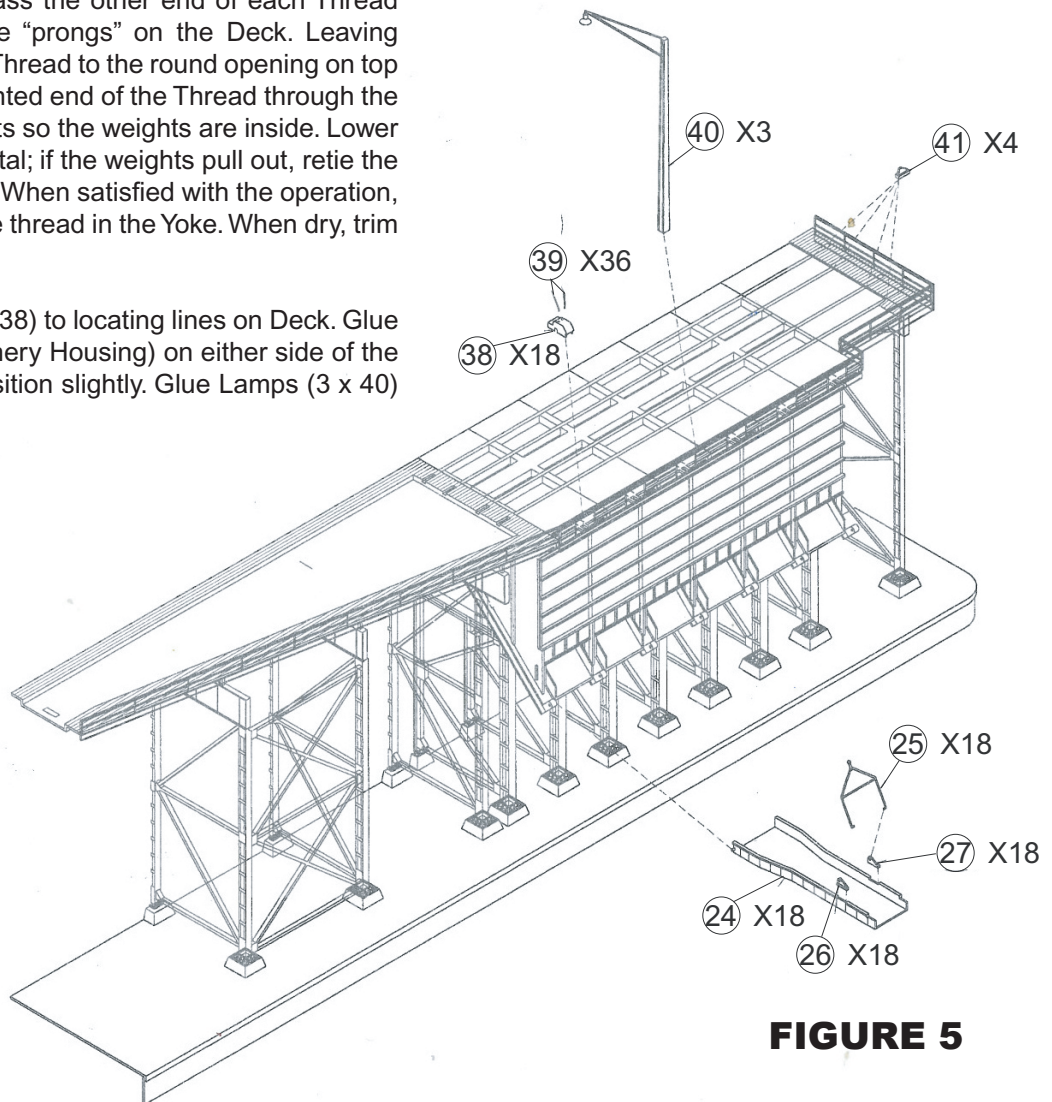
16) Chutes can be glued in place in the up position, or clipped in place so they may be raised and lowered by hand for loading scenes. Please follow the appropriate step below:

For Fixed Chutes: Gently squeeze the end of each Chute and insert pins in mounting holes. Insert Lifting Yokes (18x 25) in Lifting Yoke Eyes. Raise chutes to closed position (about 70° degrees above horizontal), positioning Lifting Yokes as needed. Cut lengths of Thread for each Chute. Tie one end to the round opening on top of each Yoke. Feed the other end through the square openings in the Deck and glue to the lengthwise ridge. Make sure the Thread is taught, and apply a drop of glue to secure the end in the Lifting Yoke. When dry, trim any excess from the visible end. When satisfied with the appearance, glue Chutes in place.

For Positionable Chutes: Gently squeeze the end of each Chute and insert pins in mounting holes. Insert Lifting Yokes (18x 25) in Lifting Yoke Eyes. Cut lengths of Thread about 8" (20.3cm) long for each Chute and feed end through the square openings (behind the lengthwise ridge) in the Deck. Tie about 1/4 ounce (7g) of small nuts or washers (sold separately) to one end of each thread as a counterweight. Pass the other end of each Thread under the Railing and between the "prongs" on the Deck. Leaving some thread for adjustment, tie the Thread to the round opening on top of each Yoke. Feed the counterweighted end of the Thread through the openings in the top of the side sheets so the weights are inside. Lower the Chutes about 45° below horizontal; if the weights pull out, retie the thread closer to the end of the Yoke. When satisfied with the operation, apply a drop of glue to the end of the thread in the Yoke. When dry, trim any excess from the end.

17) Glue Machinery Housings (18 x 38) to locating lines on Deck. Glue Levers (36x 39; two for each Machinery Housing) on either side of the Machinery Housing, varying the position slightly. Glue Lamps (3 x 40) to Deck.

18) Openings are molded in the Deck to accept lengths of Code 83 rail, sold separately; other sizes may be used, with some slight modification of the openings. Cut Rail to fit and glue in place using a CA or water-based contact cement (sold separately). Glue Wheel Stops (4x 41) to ends of Rails. If using Atlas Turnouts on the Approach, complete track installation using sectional or Flex-Track cut to fit. This part of the deck was normally ballasted; if you wish to do so, make sure that ballast (sold separately) does not interfere with the operation of the switch points.



**FIGURE 5**

## DECALING

1. After cutting out the decal, dip in water for 10 seconds, remove and let stand for 1 minute. Slide decal onto surface, position and then blot off any excess water.
2. Lightly brush Micro Sol® on top. This will soften the decal allowing it to conform to irregular surfaces. DO NOT TOUCH DECAL while wet!
3. When the decal is thoroughly dry, check for any trapped air bubbles. Prick them with the point of a small pin or hobby knife blade and apply more Micro Sol®.