

HO SCALE 400 ton CONCRETE COALING TOWER

INTRODUCTION

TICHY TRAIN GROUP is proud to introduce a new concept in HO Scale craftsman style plastic assembly kits — this 400 ton Coaling Tower is intended to set a new standard for structure kits based on "mainline" steam and diesel era prototypes. First in an exciting series, this all injection molded kit (with some metal), although imposing by its nature, is relatively easy to assemble, a feature you have already come to expect from TICHY TRAIN GROUP. It is a complete kit with all detail correctly reproduced from original source material, catalogues, photos and engineering drawings. We do recommend that you have some previous experience assembling plastic kits — construction of this coaling tower can best be compared to assembling a plastic battleship model, but not as complex as a fully rigged sailing ship.

The key to building this kit is patience, a clean, well lighted workspace, sharp tweezers and a modeler's knife. It is important to work slowly and carefully, making sure all assemblies are square and correct before cementing and setting aside to dry. Unlike our previous kits, this includes actual size drawings of the tower, with all details shown, and minimal step-by-step instructions. It is assumed most modelers have experience in the assembly of "craftsman style" structure kits. The difference is that all parts are molded, requiring only assembly and painting. Listed below is our recommended assembly sequence. We have included isometric drawings and specific notes as appropriate. This is not a "jiffy" kit, but what's the rush? The finished model is sure to be a focal point on your layout, or a featured diorama — we even know of modelers who are redesigning their layout just for this kit!

PROTOTYPE HISTORY

A new era in railroad structure technology began in the early 1920's with the transition from high maintenance and flammable wood construction to the more modern and durable reinforced concrete. This 400 ton three-track coaling tower is typical of many that were built by the noted *Fairbanks, Morse & Company*, ranging in size from tiny 50 ton units to the massive 1000 to 2000 ton capacity models. Similar designs were used all across the United States, making it appropriate for both Eastern and Western roads. At 400 tons, this tower is just the right size for most HO Scale engine facilities, yet is equally at home along the mainline at branch service facilities.

Our kit is based on the tower built by FM for the Atchison, Topeka and Santa Fe Railroad (AT&SFRR), located in Lamy, New Mexico, 15 miles south-east of Santa Fe. The Lamy Tower was demolished in 1955. The model differs from the Lamy tower in the omission of exposed "scaling pockets," a feature that would have added considerably to the parts count and assembly difficulty, was less typical, and would have reduced the capacity to a nominal 300 tons. The model reflects the Lamy design in all dimensions, including the size and layout of the sand-house, hoist-house and hopper shed/coal pit.

Those of you seeking additional information on the Lamy Tower may refer to the recently reprinted *Fairbanks, Morse* catalogue published by TLC Publishing, Sterling, VT.

The kit has been purposely designed to allow modeler freedom in the actual construction, permitting modifications to suit your intended location. For example, you may elect to omit the outside coal chute, thus converting the tower into a two-track design; this would allow a smaller facility and permit installation in such a manner as to feature the bucket-hoist side. Additionally, the body style can be modified, or an entire new body fabricated, to reflect a favorite prototype . . . additional parts from this kit, such as the chutes, ladders, platforms and details are available from TICHY TRAIN GROUP (thru your dealer) should your design require them.

Production of this kit required over eighteen months of research, design and toolmaking — every effort has been made to produce the most complete and exciting craftsman style structure kit ever available to model railroaders. TICHY TRAIN GROUP would like to acknowledge and thank the following for their kind and invaluable assistance in making this project possible:

- Fairbanks, Morse & Company (Engine Division)
- TLC Publishing
- Kansas State Historical Society
- AT&SFRR Collection; Connie Menninger, Curator
- Chesapeake, & Ohio Historical Society, Inc.
- Lt. Col. Tom Dickson, Jr.
- Museum of New Mexico
- THE NEW MEXICAN
- KALMBACH LIBRARY; MODEL RAILROADER
- MAGAZINE
- CARSTENS PUBLICATIONS, RAILROAD MODEL
- CRAFTSMEN
- HUNDMAN PUBLICATIONS, MAINLINE MODELER
- Charles Tobin

If you damage or break a part, replacements are available direct from us. Please send kit number (7010), part(s) number, exact description and \$1.50 for shipping and handling to: TICHY TRAIN GROUP, Attn: Customer Service, 55 Kennedy Drive, Hauppauge, NY 11788. If you need to replace a major assembly or component please contact us for pricing information.

Fairbanks, Morse and Company, TESTORS, JET, SUPERJET, JETSET, 3M GREENSTUFF and SQUADRON are registered Trademarks.

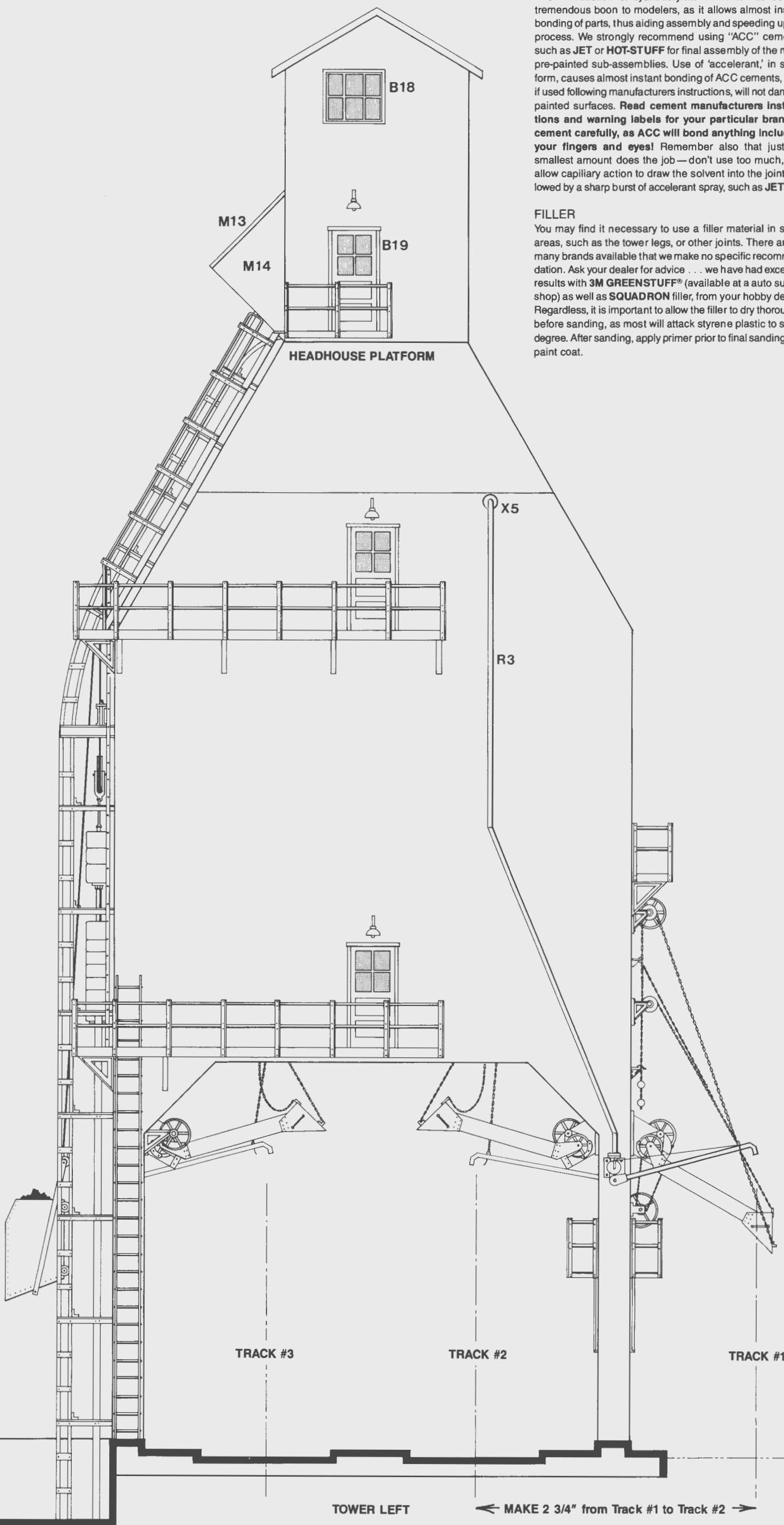
SOLVENTS

We suggest using TESTORS® "tube" cement for the large body panels, as this will allow positioning time before it sets. Use "liquid cement for plastics" for all plastic-to-plastic assembly of detail parts.

The introduction of cyanoacrylate cements has been a tremendous boon to modelers, as it allows almost instant bonding of parts, thus aiding assembly and speeding up the process. We strongly recommend using "ACC" cements, such as JET or HOT-STUFF for final assembly of the many pre-painted sub-assemblies. Use of 'accelerant,' in spray form, causes almost instant bonding of ACC cements, and, if used following manufacturers instructions, will not damage painted surfaces. **Read cement manufacturers instructions and warning labels for your particular brand of cement carefully, as ACC will bond anything including your fingers and eyes!** Remember also that just the smallest amount does the job — don't use too much, and allow capillary action to draw the solvent into the joint, followed by a sharp burst of accelerant spray, such as JETSET.

FILLER

You may find it necessary to use a filler material in some areas, such as the tower legs, or other joints. There are so many brands available that we make no specific recommendation. Ask your dealer for advice . . . we have had excellent results with 3M GREENSTUFF® (available at a auto supply shop) as well as SQUADRON filler, from your hobby dealer. Regardless, it is important to allow the filler to dry thoroughly before sanding, as most will attack styrene plastic to some degree. After sanding, apply primer prior to final sanding and paint coat.

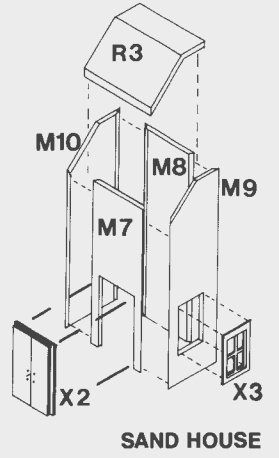
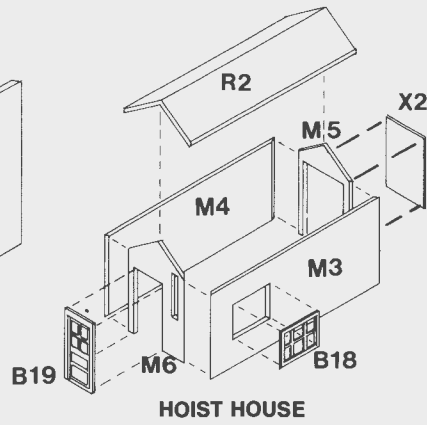
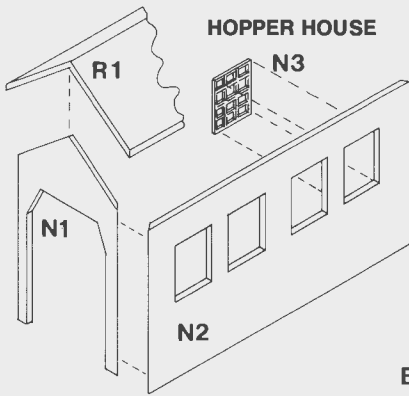


ASSEMBLY SEQUENCE

Study the plans, photos and drawings carefully before assembly! We suggest the following general sequence—your own experience level will dictate the actual sequence.

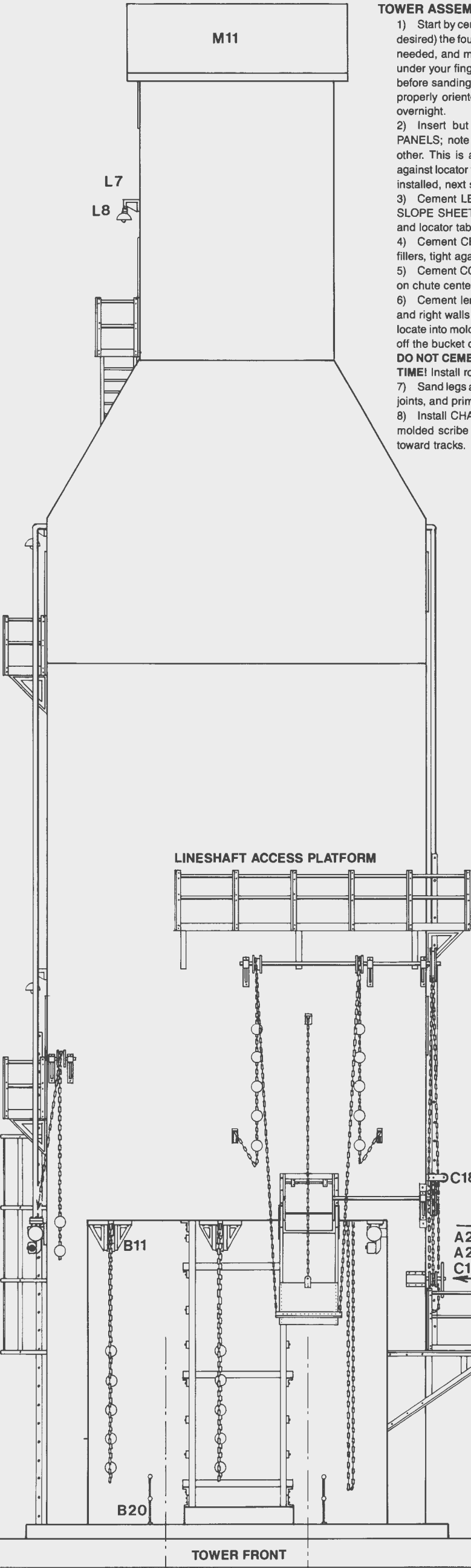
1) BASIC STRUCTURES

Start with the *Hoist House*, *Sand House* and *Hopper House* to become familiar with cementing mitred corners. NOTE: DO NOT cement roof to hoist house until final assembly.

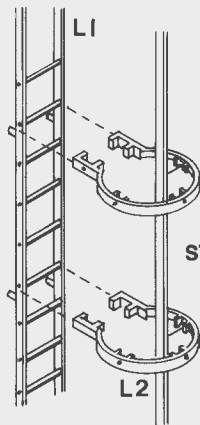
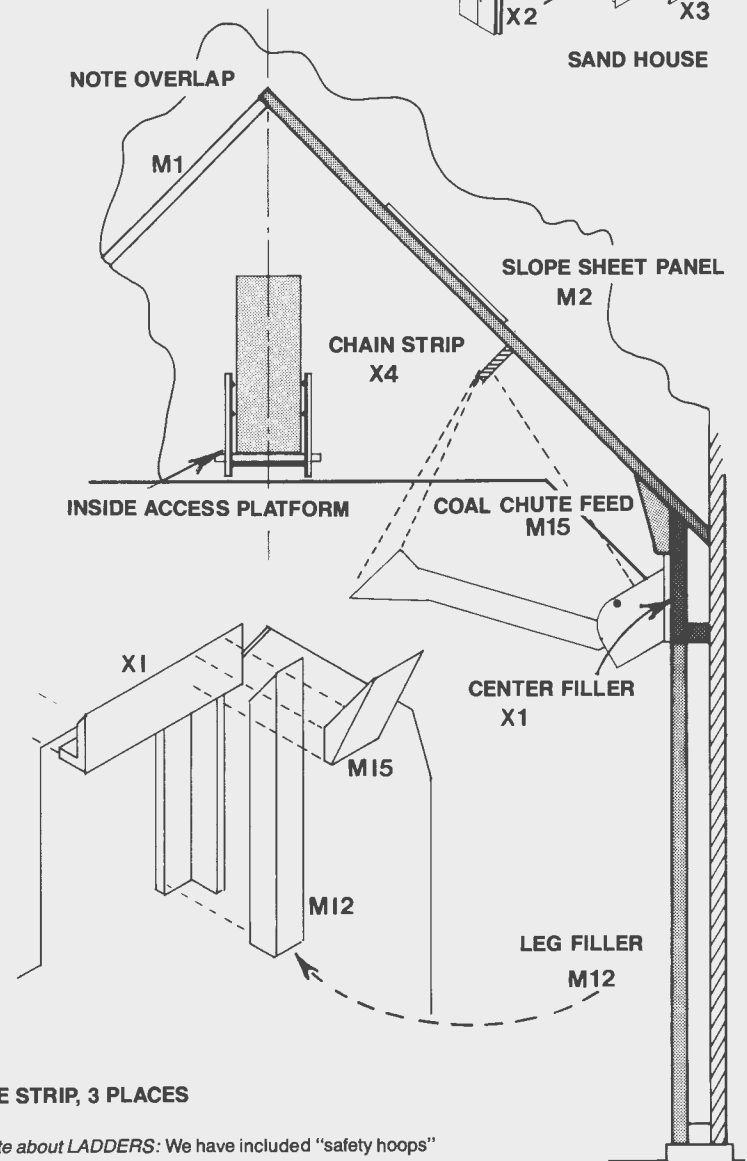


TOWER ASSEMBLY SEQUENCE

- 1) Start by cementing (with "tube" cement, or liquid if desired) the four TOWER WALLS together. Use tape as needed, and make sure that the cement does not run under your fingers—if it does, allow to dry thoroughly before sanding out. Also, be careful that the walls are properly oriented and square. Allow assembly to dry overnight.
- 2) Insert but *do not cement* two SLOPE SHEET PANELS; note that one center edge will overlap the other. This is a loose fit only; cement in place hard against locator tabs *only after* LEG FILLERS have been installed, next step.
- 3) Cement LEG FILLER ANGLES in place. Cement SLOPE SHEETS in place, firmly located against legs and locator tabs.
- 4) Cement CENTER FILLERS in place between leg fillers, tight against slope sheet.
- 5) Cement COAL CHUTE FEEDS in place, centered on chute centerlines—check location from drawing.
- 6) Cement length of 1/4" plastic tubing between left and right walls of the tower upper headframe room—locate into molded square "cups." This is to allow tying off the bucket cable on final assembly.
- DO NOT CEMENT TOWER ROOF IN PLACE AT THIS TIME! Install roof only after cables are installed.
- 7) Sand legs and/or apply filler as needed, sand edge joints, and prime and sand to suit.
- 8) Install CHAIN STRIPS on the slope sheets, using molded scribe line as a guide, with chamfered holes toward tracks.



NOTE OVERLAP



STYRENE STRIP, 3 PLACES

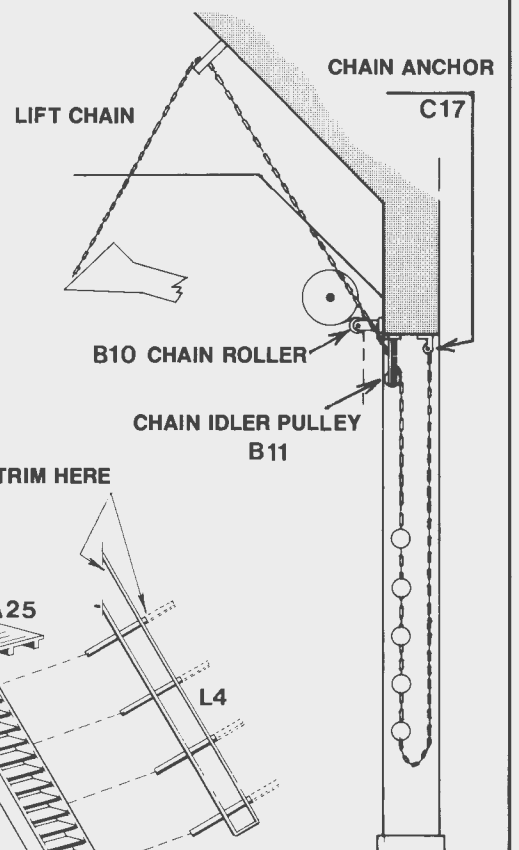
A note about LADDERS: We have included "safety hoops" with the ladders—these entered general usage in the early 1940's, and were government-mandated by the 50's as a crucial safety device. If you are modeling an earlier era you may choose not to include them, or you may want to paint them as a "recent addition" to the existing ladders.

2) PREPARE BASE and LAYOUT/DIORAMA AREA

The base includes the pit and foundations for the structures, as well as slots for the track. Base thickness will allow use of standard 1/4" cork roadbed or Upson® board. With flex-track it may be necessary to trim the tie ends to fit, depending on the brand. Note the molded standoffs under the base—these are to allow use on your workbench prior to final assembly and installation; trim them off when required. You may wish to prepare a diorama board, complete with track and ballast, ready to go in to your layout (or a display case!) at this time. Cut a hole in a piece of 1/2" plywood to clear the pit, and cement molded base to plywood with SUPERJET™, or secure with small screws.

3) SUB-ASSEMBLIES

These include all chutes, platforms, handrails, etc. For example, the "operator's platform" can be assembled into one piece, as can the "stairway/platform" to the upper headblock area. Likewise, the chutes can be completely finished, including pulleys and shafting, prior to painting. In short, all parts that will eventually be attached to the structures may be completed at this time. Work in a general but logical sequence, and label specific items, such as "lower ladder," which may be a different length than an "upper ladder."



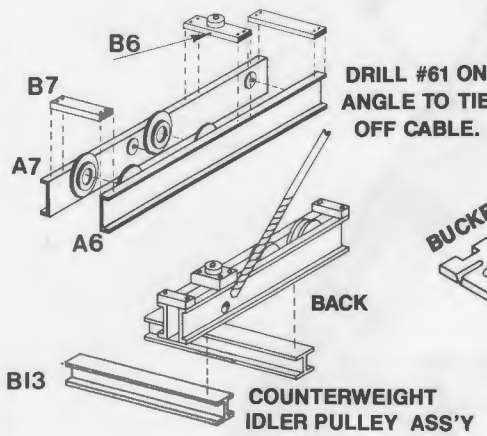
4) BUCKET/COUNTERWEIGHT RAIL ASSEMBLY

Special note should be made of this complex appearing assembly. It's really not as difficult as it looks! Begin by cleaning your workspace so that nothing will accidentally damage the long rails. *Carefully* remove the RAILS from the runner with a *new* single-edged blade. Likewise, remove and clean-up the CROSS-ANGLES and large VERTICAL CHANNELS. Cement the vertical channels to ends of side-rail bars as shown.

Now, using the provided ASSEMBLY JIG, molded in solvent resistant acetal. **NOTE:** remove chain from jig, being careful not to allow it to become tangled, and hang it up on the wall until step #9. Slide jig into the bucket rails, secure with a few pieces of tape. Carefully cement the cross-angles in place, with jig holding rails parallel. **NOTE** the proper orientation of the locator tabs to the rail assembly. Work slowly, skipping every other one, until you have reached the end, then come back and complete the remaining cross-angles. Make sure that assembly is square, then set aside in a safe place and allow cement to dry overnight.

SPECIAL NOTE REGARDING THE BUCKET RAIL ASSEMBLY:

This assembly may be made up complete with BUCKET, COUNTERWEIGHT, UPPER DOUBLE IDLER PULLEY, COUNTERWEIGHT PULLEY, etc., *after* painting but prior to cementing to tower. Most modelers will show the bucket in an elevated position; since the counterweight is compounded, the movement is slight for a large movement of the bucket. The approximate correct position is as shown in the photos, rather than the drawing. Note to drill for the cable tie-off on double idler pulley as shown, and add the cable before cementing rail assembly to tower.



5) PAINTING

We suggest that all sub-assemblies be pre-painted, along with the tower and out buildings, prior to final assembly. FLOQUIL® brand paints, applied with an airbrush, is an excellent choice—allow plenty of time for the paint to dry before moving on with the assembly, however. "CONCRETE" is an appropriate choice for the structures. You will note that we did not engrave the body panels with the traditional "board" texture resulting from pouring concrete into wooden forms. Extensive testing and modeler input indicated that the best texture was *no* texture, as even the most subtle was too pronounced. The metal work can be painted with a 50/50 mix of "OXIDE RED" and "ROOF BROWN." After final assembly, but prior to weathering, a light spray of FLOQUIL® "FLAT FINISH," or TESTORS® "DULL-COAT" may be applied to even out the finish and hide any glossy areas resulting from the use of ACC cement. We suggest that no weathering be applied to the model until after final assembly, as it is easier to touch up the paint with "base-coat" colors than to attempt to match a weathered finish.

6) DETAIL INSIDE SLOPE SHEET AREA

Before adding detail to the outside of the structure, it is best to completely detail the inside slope-sheep area, including the coal chutes, platform and chains, as handling the model will become more difficult as the assembly proceeds, making access to this area difficult. Weather (soot, grime) the underside area prior to moving on.

7) PLATFORMS, STAIRWAYS, HANDRAILS, CHUTES

The major (pre-painted) sub-assemblies should be added at this time . . . However, it may be wise to add the bucket rail assembly after all other detail has been applied, but prior to weathering. Lightly pencil in the proper locations, making especially sure that the platforms are square and parallel. LADDERS may also be installed. The light pencil lines may be erased or touched up with base color paint.

You will find that handling the model is difficult — be patient, and devise blocks or cotton pads to rest the model on and protect the details as you proceed.

BUCKET RAIL ASSEMBLY

NOTE LOCATOR TABS

CROSS ANGLES, 13 PLACES B17

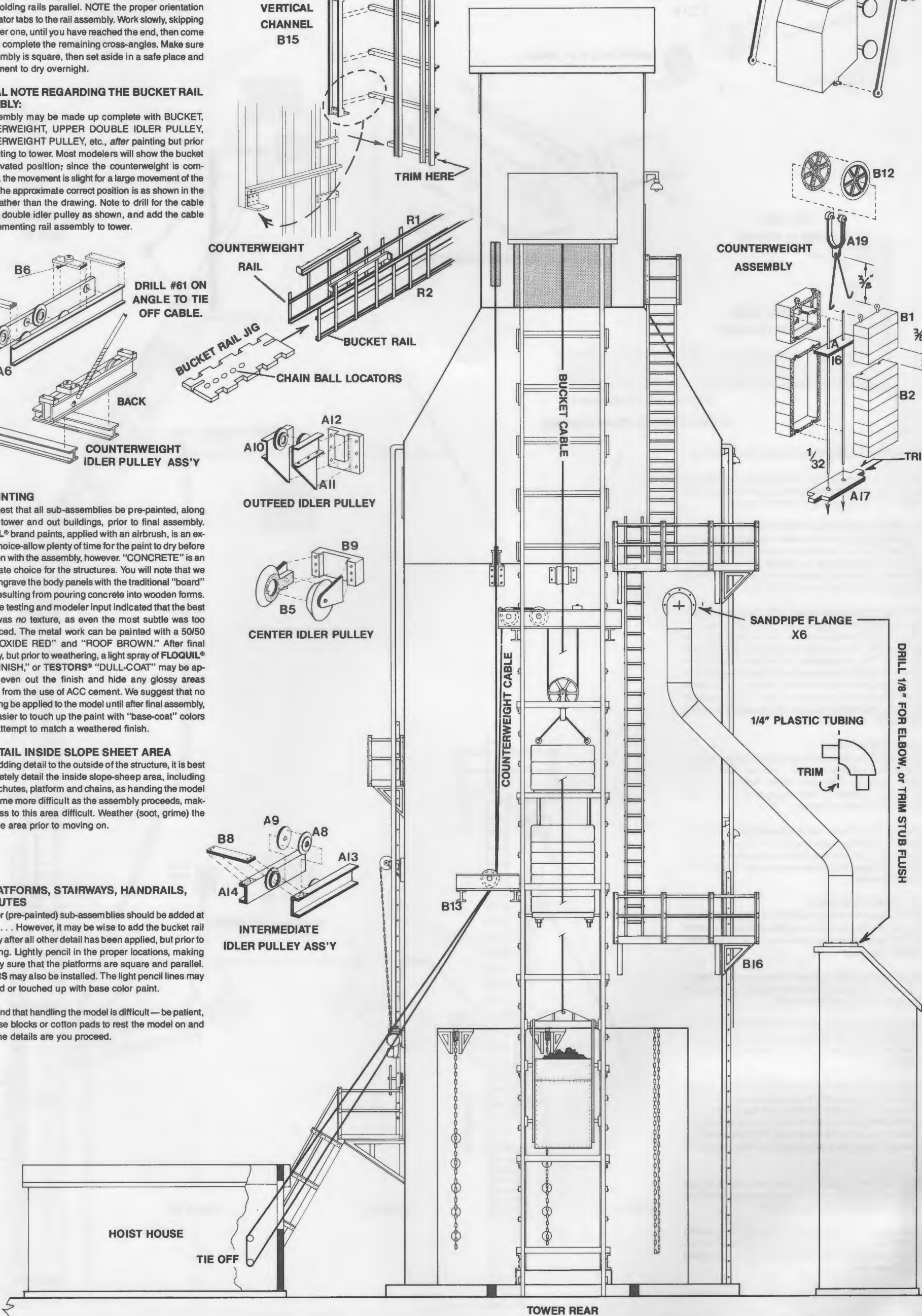
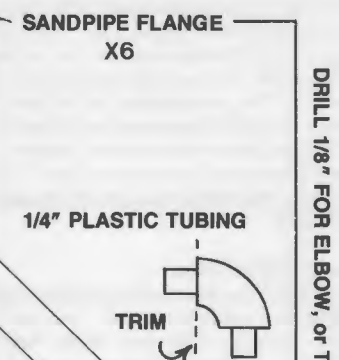
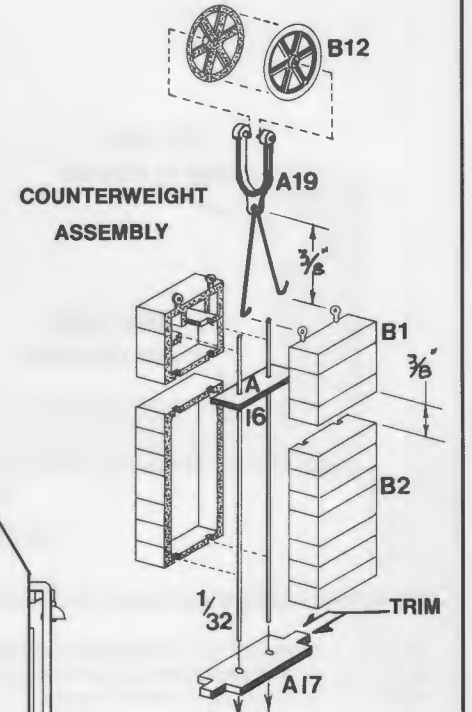
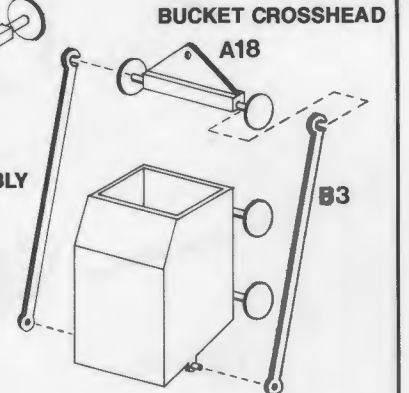
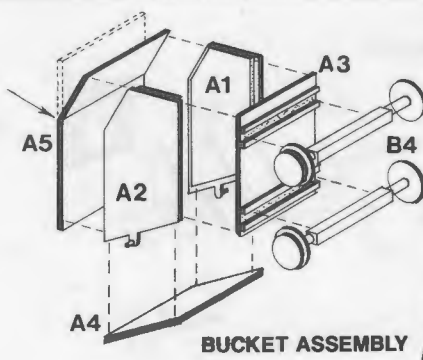
VERTICAL CHANNEL B15

COUNTERWEIGHT RAIL

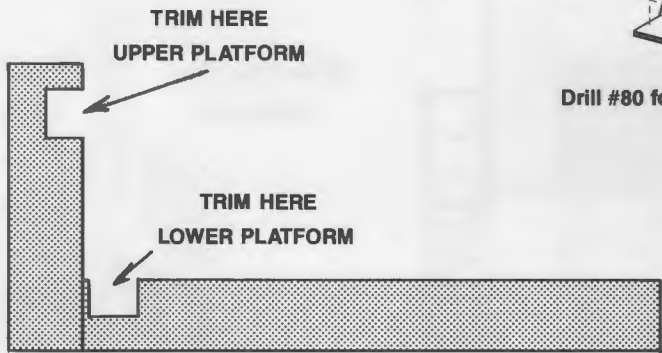
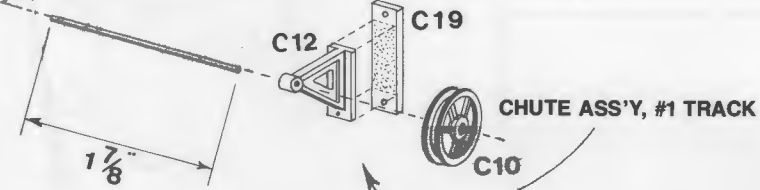
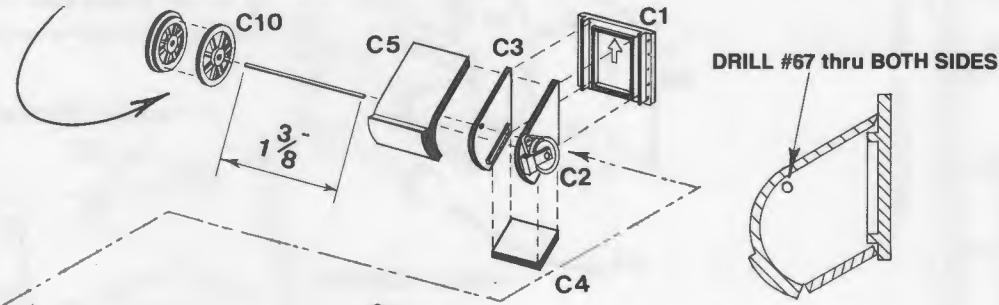
BUCKET RAIL JIG, CHAIN BALL LOCATORS

OUTFEED IDLER PULLEY (A10, A11, A12), CENTER IDLER PULLEY (B5)

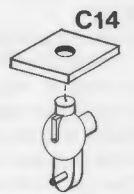
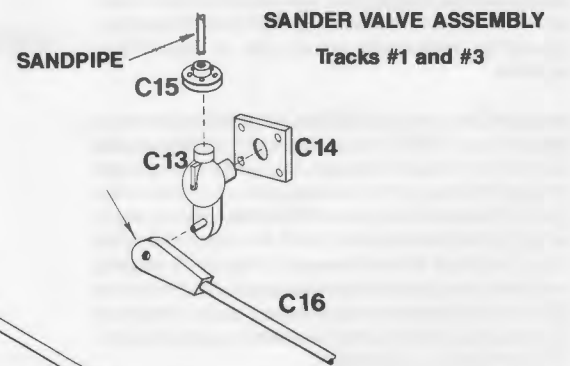
INTERMEDIATE IDLER PULLEY ASS'Y (A8, A9, A13, B8, A14)



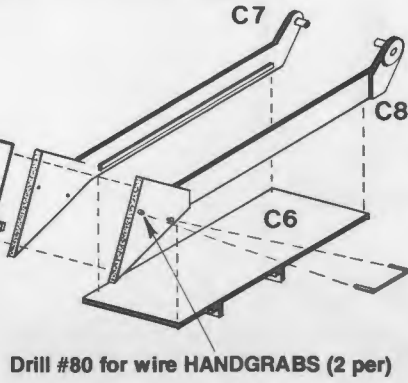
CHUTE ASSEMBLY, Tracks #2 and #3



TYPICAL PLATFORM ASS'Y
MEASURE LENGTH FROM DRAWING



SANDER VALVE ASSEMBLY
Track #2



8) MISCELLANEOUS DETAILS, SAND PIPES, ETC.

Check the drawings and photos for location of details such as the chain anchors, sand-pipe valves, and the like. Make sure that all detail is solidly cemented in place.

9) CHAINS AND COUNTERWEIGHT BALLS

The chains may be the most difficult operation, due to the fineness as well as the added complication of handling a large model covered with a multitude of fine detail parts. **Be patient!** Use sharp tweezers and eye magnification if needed, take your time, and all will go well.

The rail assembly jig is also designed to assist you in cementing the bead counterweights in place. Note the 'dimples'—after stringing the beads onto the chain, locate beads in the jig, and apply ACC sparingly to each bead. Pre-assemble all chains, then, if necessary, trim to exact length on assembly. Using the stranded copper wire provided (stripped of insulation), form small "eye-bolts." Feed into first chainlink, then into the appropriate fastening point—Twist and secure with ACC. Pre-paint all chain assemblies before assembly onto model.

10) WEATHERING

Before cementing the tower and out-buildings in place, you may want to weather the model... use your favorite techniques, including airbrushed "smoke streaks" from the passage of hundreds of locomotives, and lots of "rust," applied with powdered pastels.

Don't forget rainstreaks, railroad logos and the like! Most cast concrete roofs were tarred over to prevent erosion—a dull grey-black is just right. Also, finish detailing the base, track, ballast, roadways and scenery before cementing the tower to the foundation.

11) FINAL ASSEMBLY

Did you remember to add the SAFETY RAILINGS around the pit? If not, do it now. Cement SAND-HOUSE and HOIST-HOUSE (less roof) to base, but do not add the HOPPER SHED at this time.

Now is the time to rig the bucket and counterweight cable—it is easier if the cable is handled in separate lengths, each left about a foot long to allow tie-off.

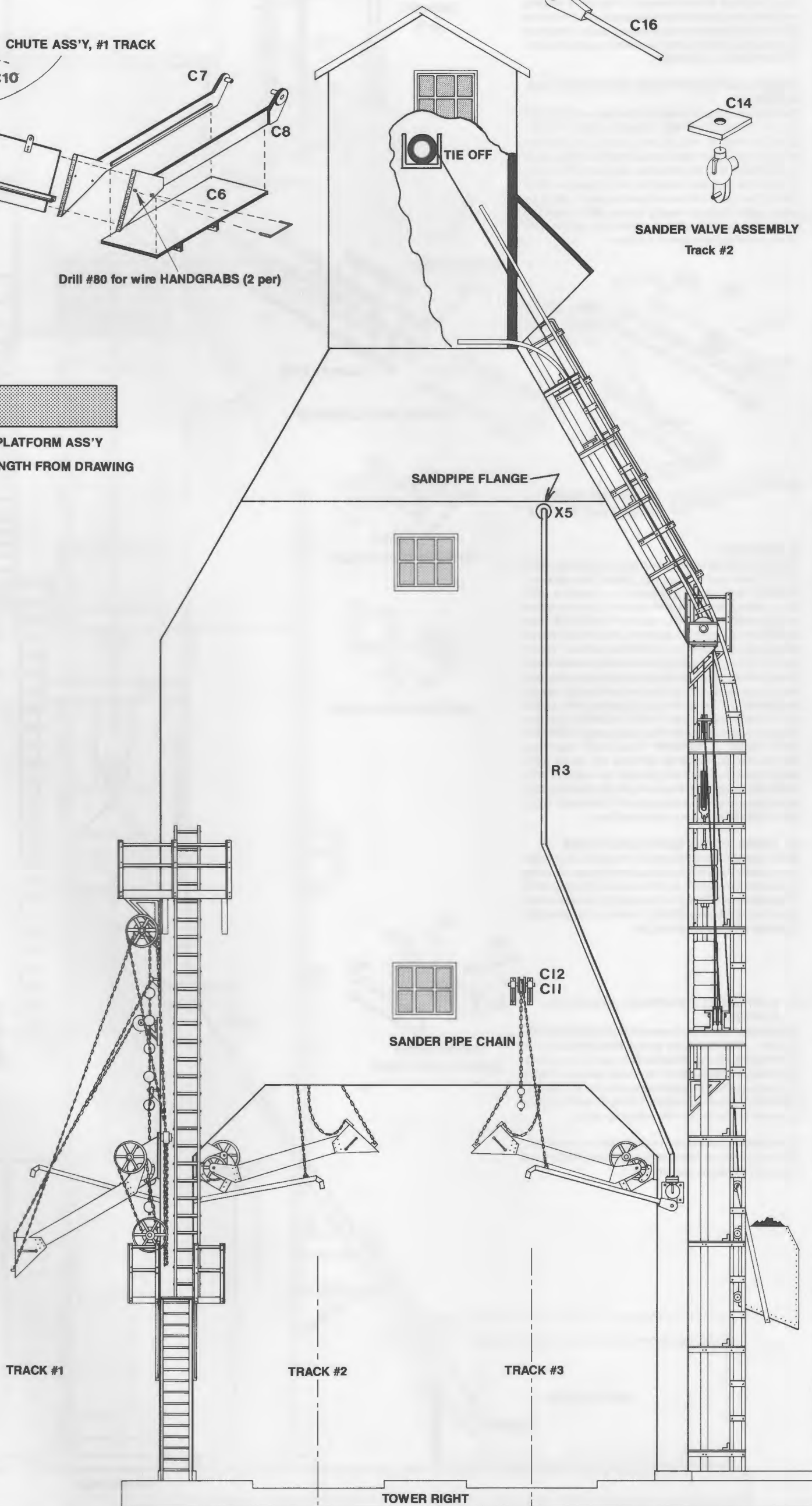
Run one length from the BUCKET CROSSHEAD, over the CENTER IDLER PULLEY, and thru the bucket opening in headhouse. Pull tight and tie-off to sprue; secure with a drop of ACC.

Run a second length thru the OUTFEED SLOT in head-house wall, tie-off and ACC to sprue. Bring cable down, over the outside OUTFEED IDLER PULLEY, then on down thru the INTERMEDIATE IDLER PULLEY—leave cable long to eventually go over to the hoist house. Pull tight and secure at the two pulleys with a drop of ACC. Let extra length hang free.

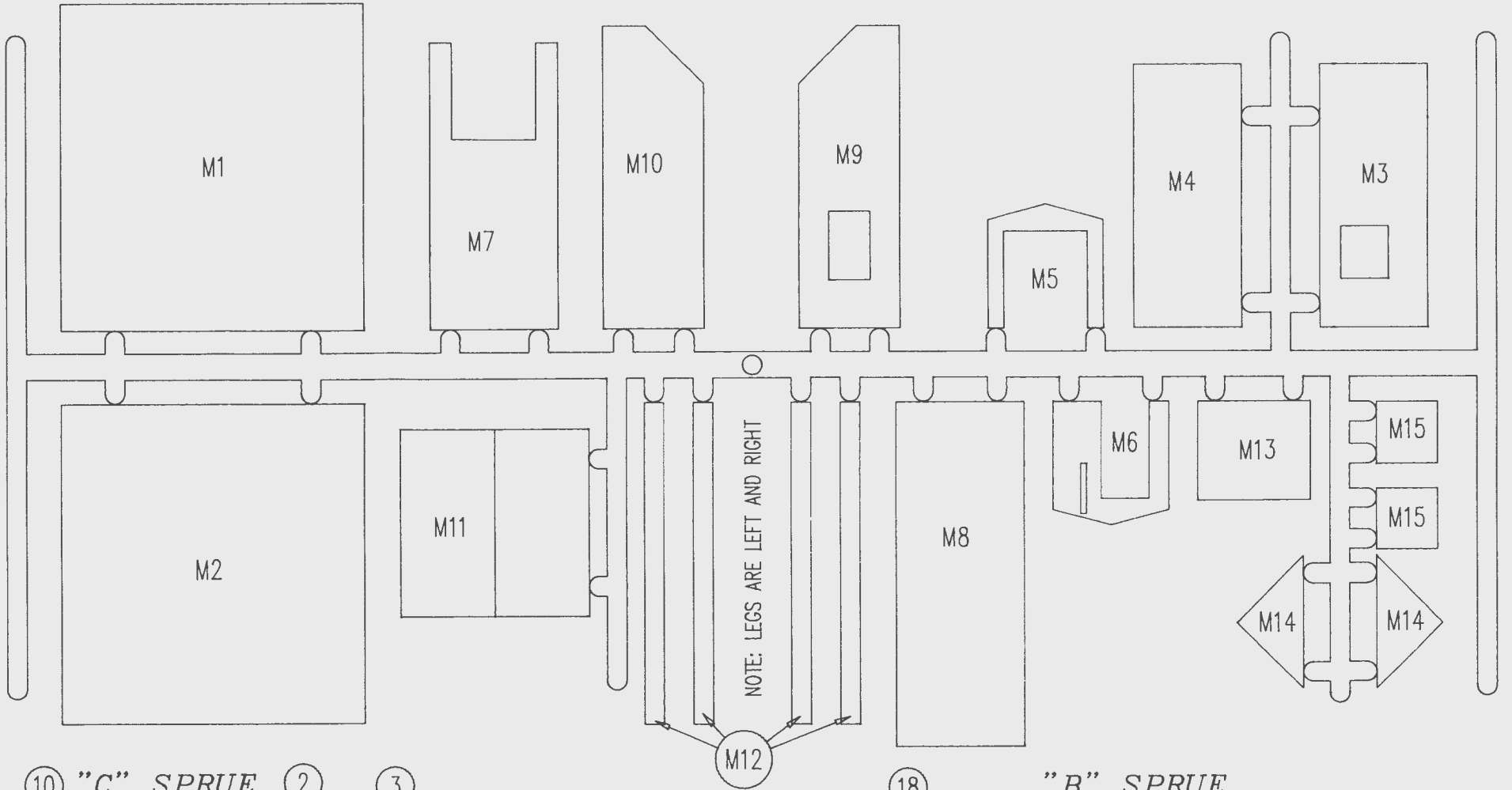
Remember that long counterweight cable that's been getting in the way? At long last it is the time to pull it out of the way and cement TOWER legs to BASE!

When all is dry, run both cable loose ends thru slot in HOIST HOUSE wall, tying (and ACC) one to each protruding pin. Now you can cement the hoist house roof in place, as well as the tower roof!

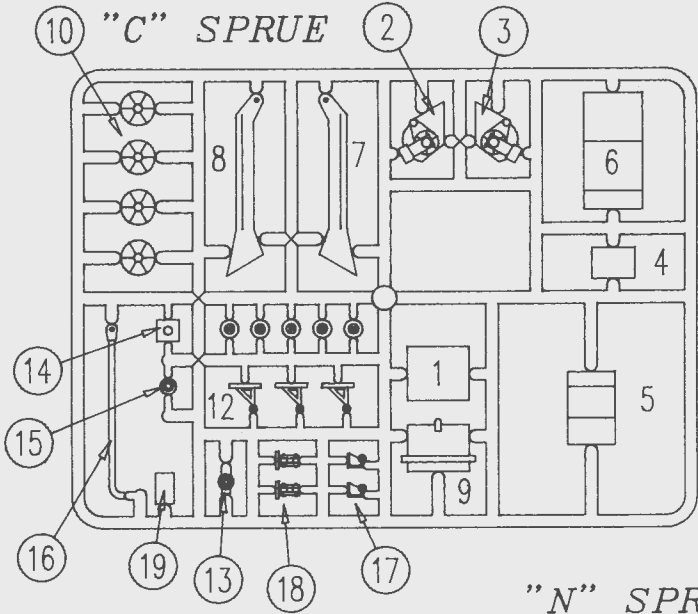
Touch up any paint, and apply final weathering and details to suit.



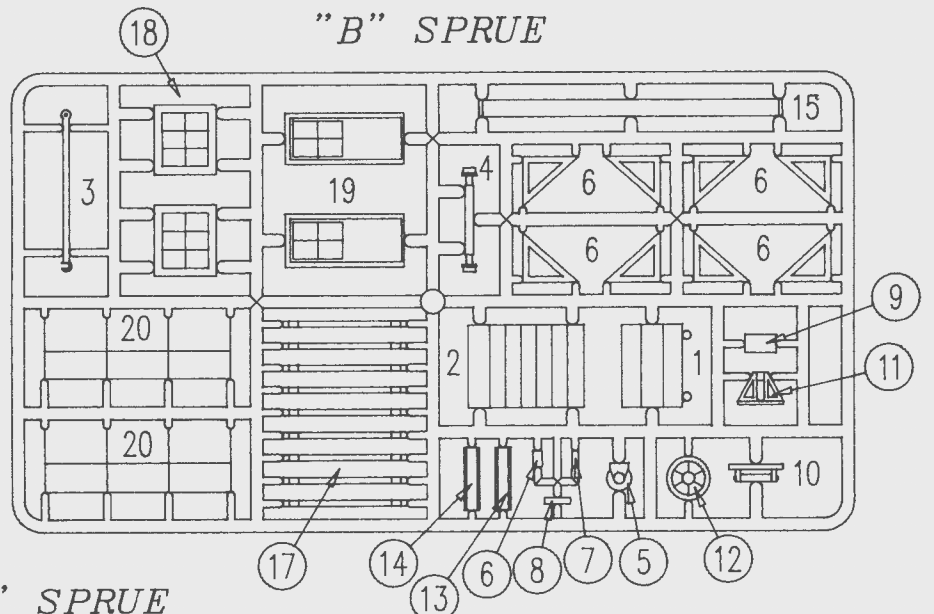
"M" SPRUE



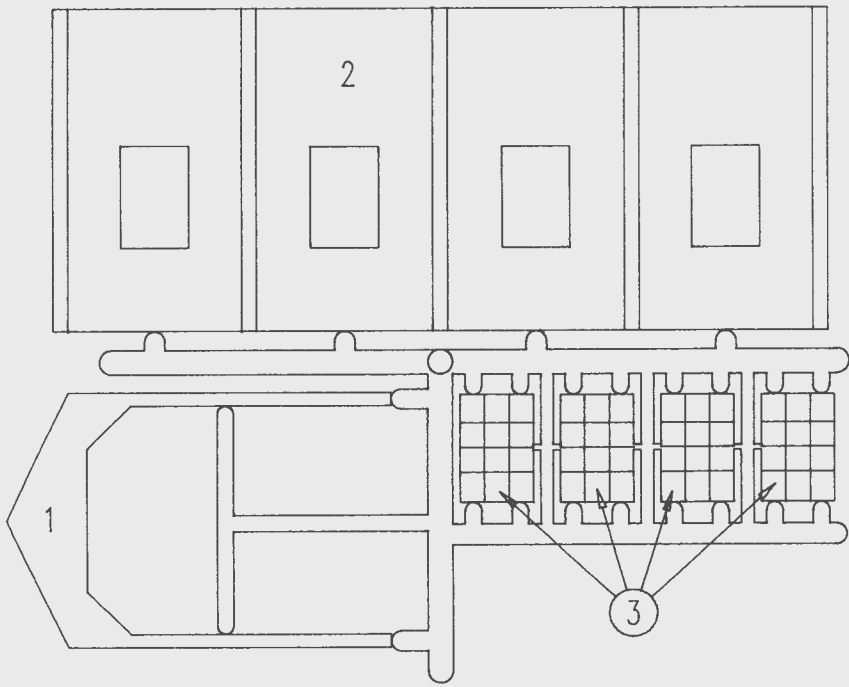
"C" SPRUE



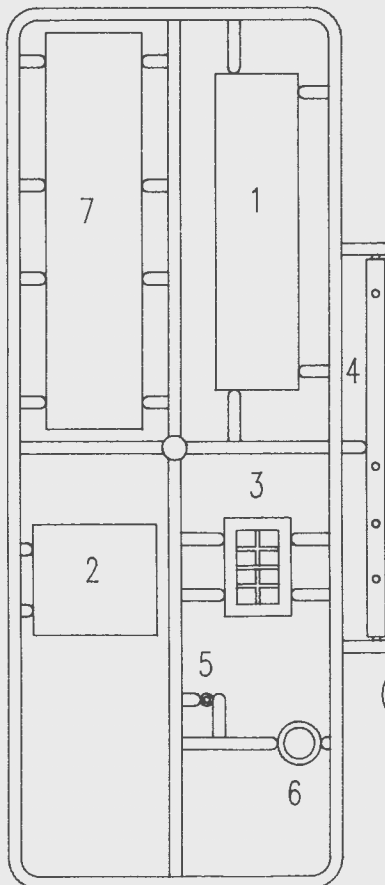
"B" SPRUE



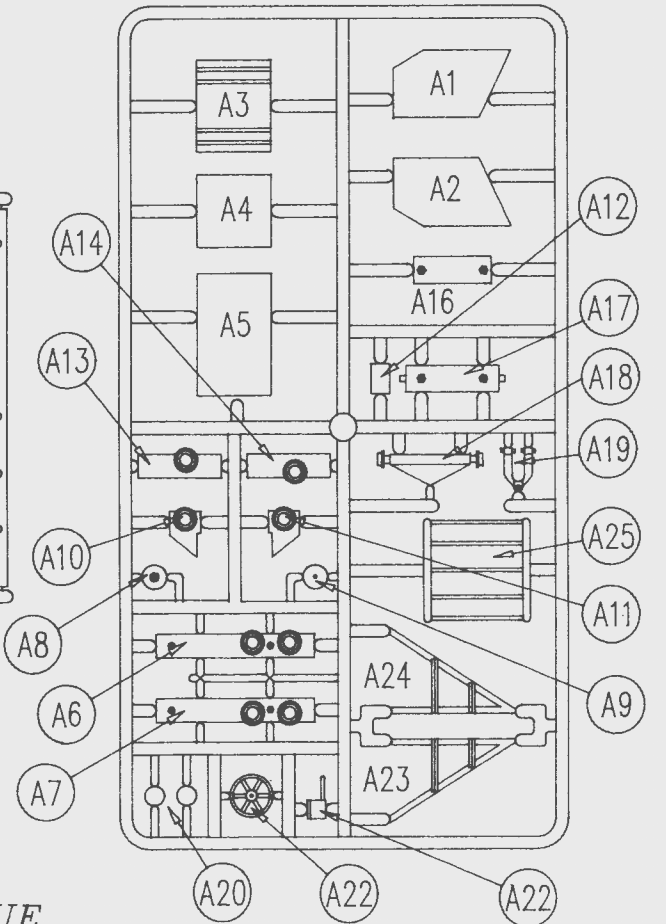
"N" SPRUE



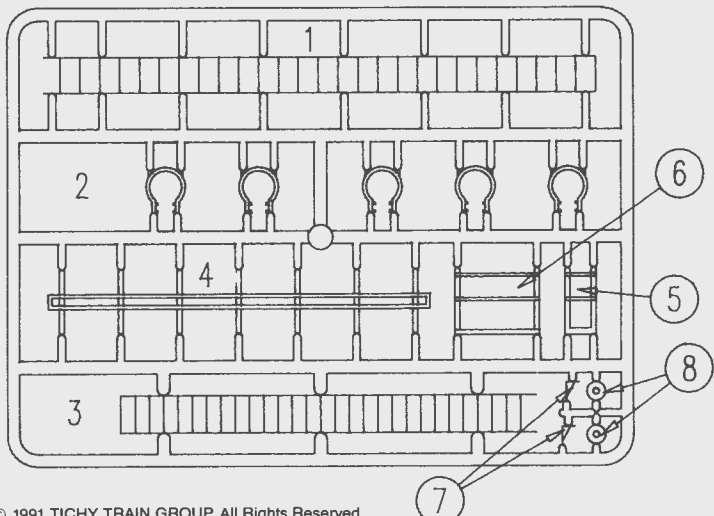
"X" SPRUE



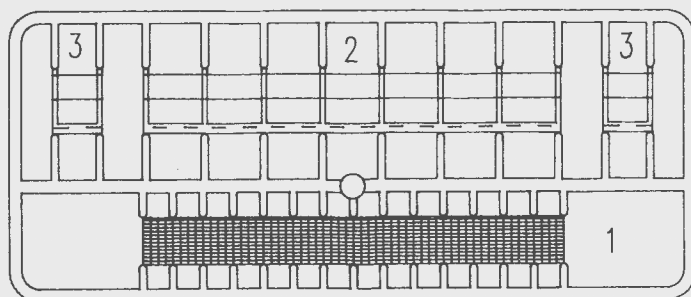
"A" SPRUE



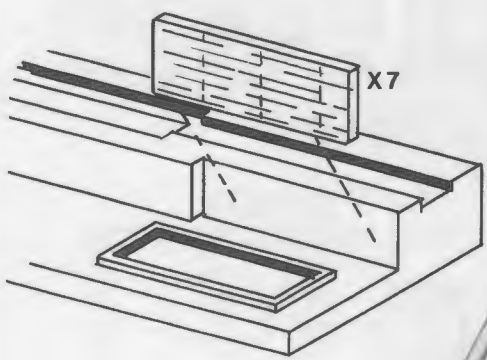
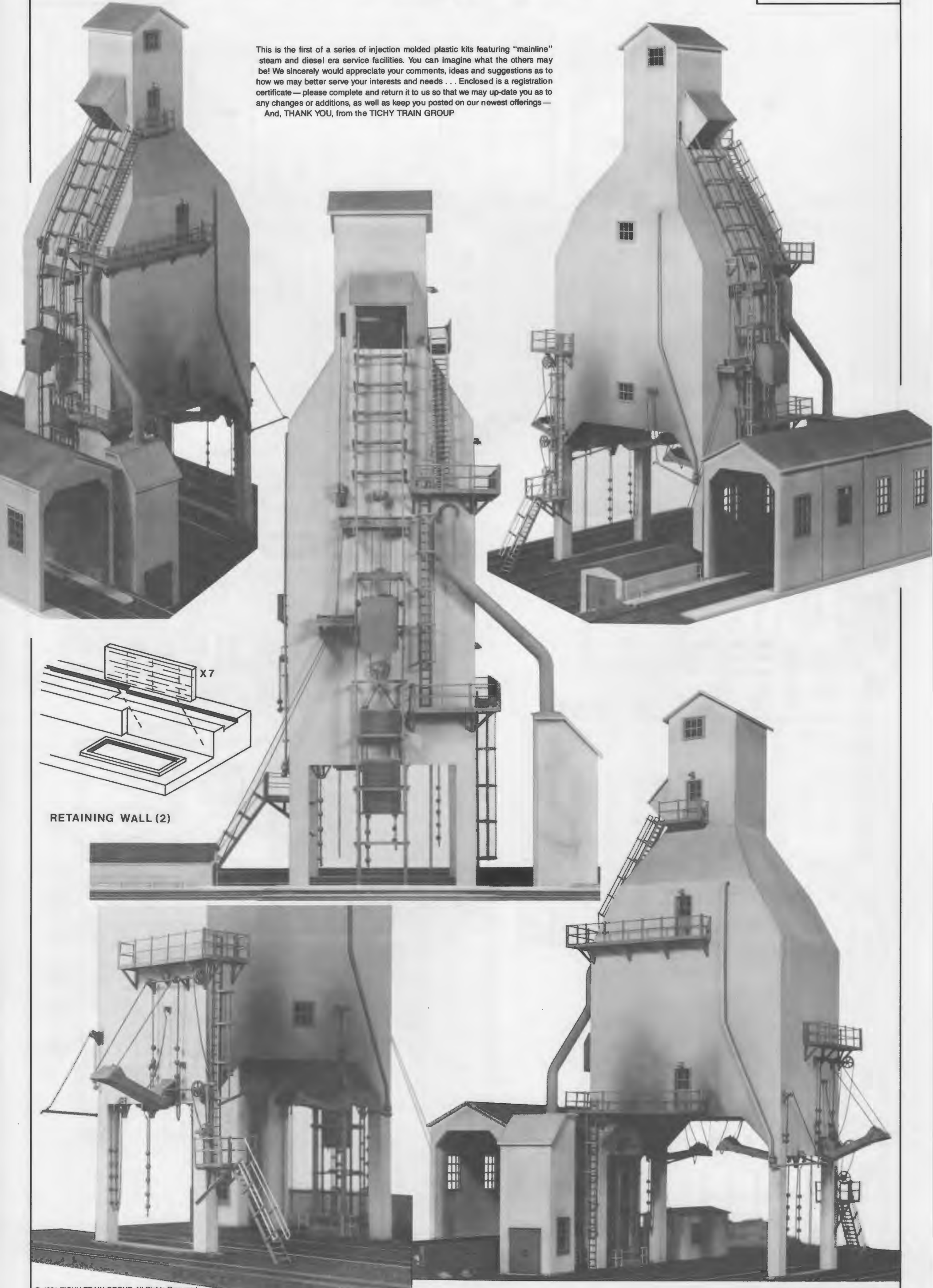
"L" SPRUE



"P" SPRUE



This is the first of a series of injection molded plastic kits featuring "mainline" steam and diesel era service facilities. You can imagine what the others may be! We sincerely would appreciate your comments, ideas and suggestions as to how we may better serve your interests and needs . . . Enclosed is a registration certificate— please complete and return it to us so that we may up-date you as to any changes or additions, as well as keep you posted on our newest offerings— And, THANK YOU, from the TICHY TRAIN GROUP



RETAINING WALL (2)

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