



Car *and* Locomotive
Plans
for Model Railroaders

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Foreword

*Young man, get a hobby; preferably get two, one for indoors and one out;
get a pair of hobby horses that can safely be ridden in opposite directions.*

— A. Edward Newton

CURING the ills of boredom and fatigue with an active pastime has been a practice of the human race since its origin. Diversion gives welcome rest to the weary; his soul literally takes wing when he rides his hobby-horse in the opposite direction.

Hobbies take root in any field as long as it has attention-arresting qualities. Since men and their offspring first sauntered down to the station to watch an old blubber-bucket pull through with its string of open-air cars, vivid interest has been manifested in trains. From this spark flamed the tinsplate model enthusiasts — and Christmas trees were not complete without a toy or an electric train beneath. But man always seeks perfection — even in a plaything — so the scale model was born. In it he found an activity in which he could create and express ideas of artistry, action and life. For a while model railroading went along with each individual expressing his own ideas of handicraft. From this, though — as it always will — outcropped the banding together of individuals whose interests were the same. From these clubs emanated standardization of scale equipment. Then finally these units welded themselves into a national association.

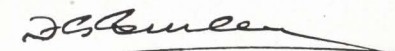
The Santa Fe Railway followed the model train builder organizations from their first steps to full life. As they grew, so did interest swell within the railway. Its first permanent concrete contribution in support of the movement was the erection of *The Museum and Santa Fe Railroad* in the transportation wing of Chicago's Jackson park in January, 1941. This display has attracted thousands of railfans since its installation.

In order to accommodate the great mass of individuals who could not go to the Railway Hub to witness the spectacle first-hand, the Santa Fe made a 16 mm. motion picture of it in color. Prints both silent and sound, are available from the company's film libraries free of charge.

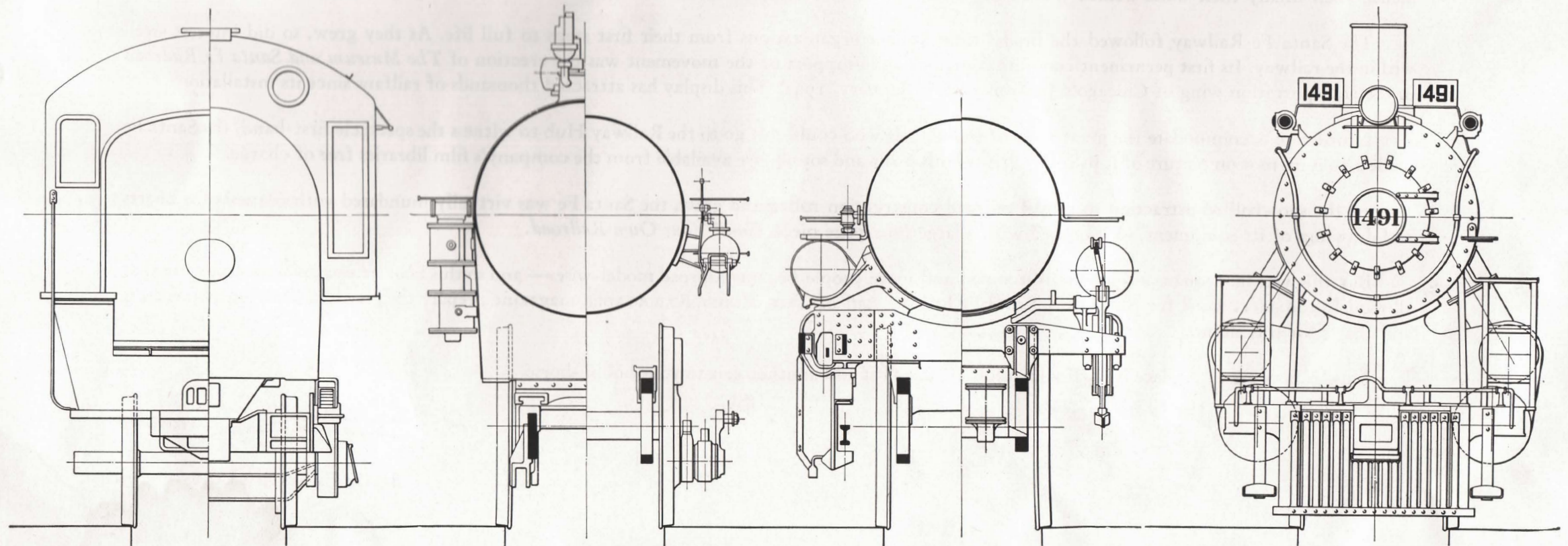
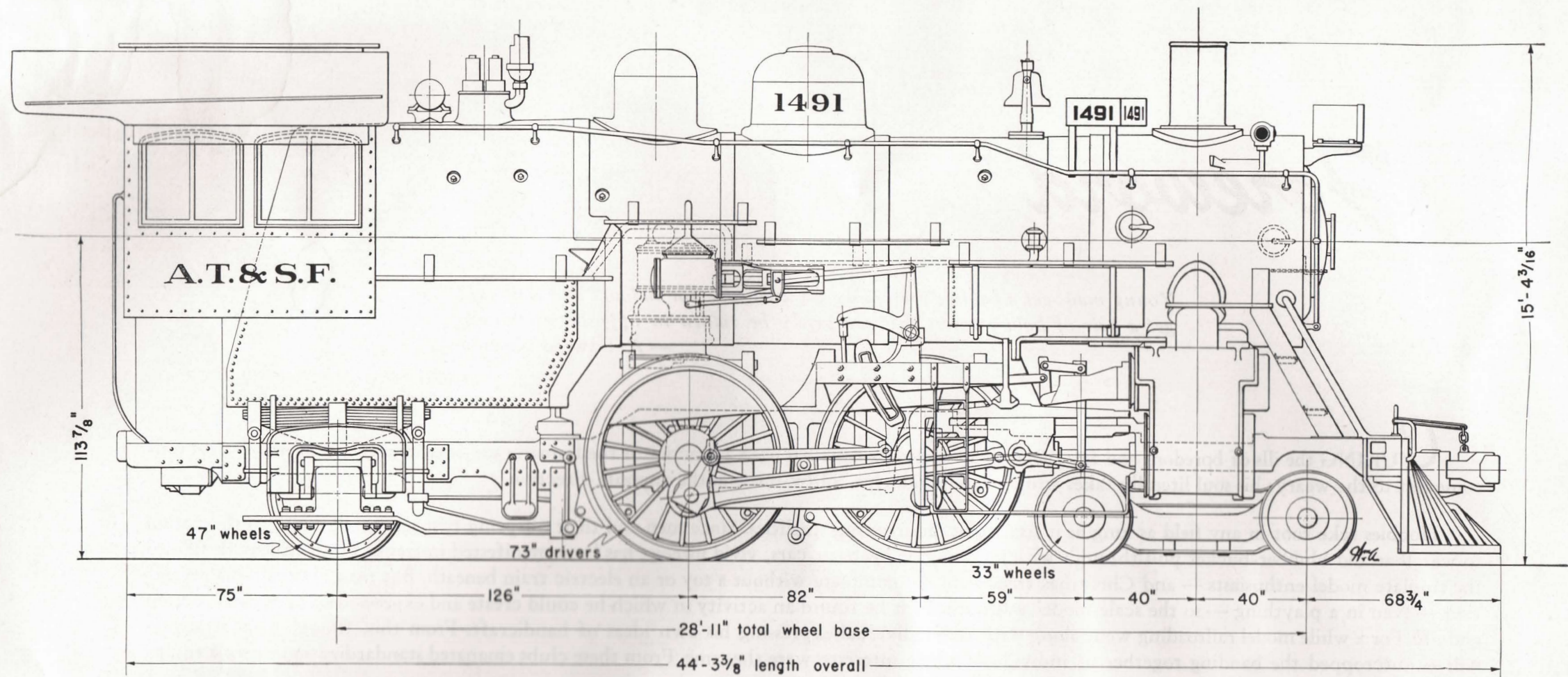
As the snowball of attraction to model railroad construction rolled and grew, the Santa Fe was virtually inundated with requests for charts and drawings of its equipment, so it replied with a large four-page piece, *Build Your Own Railroad*.

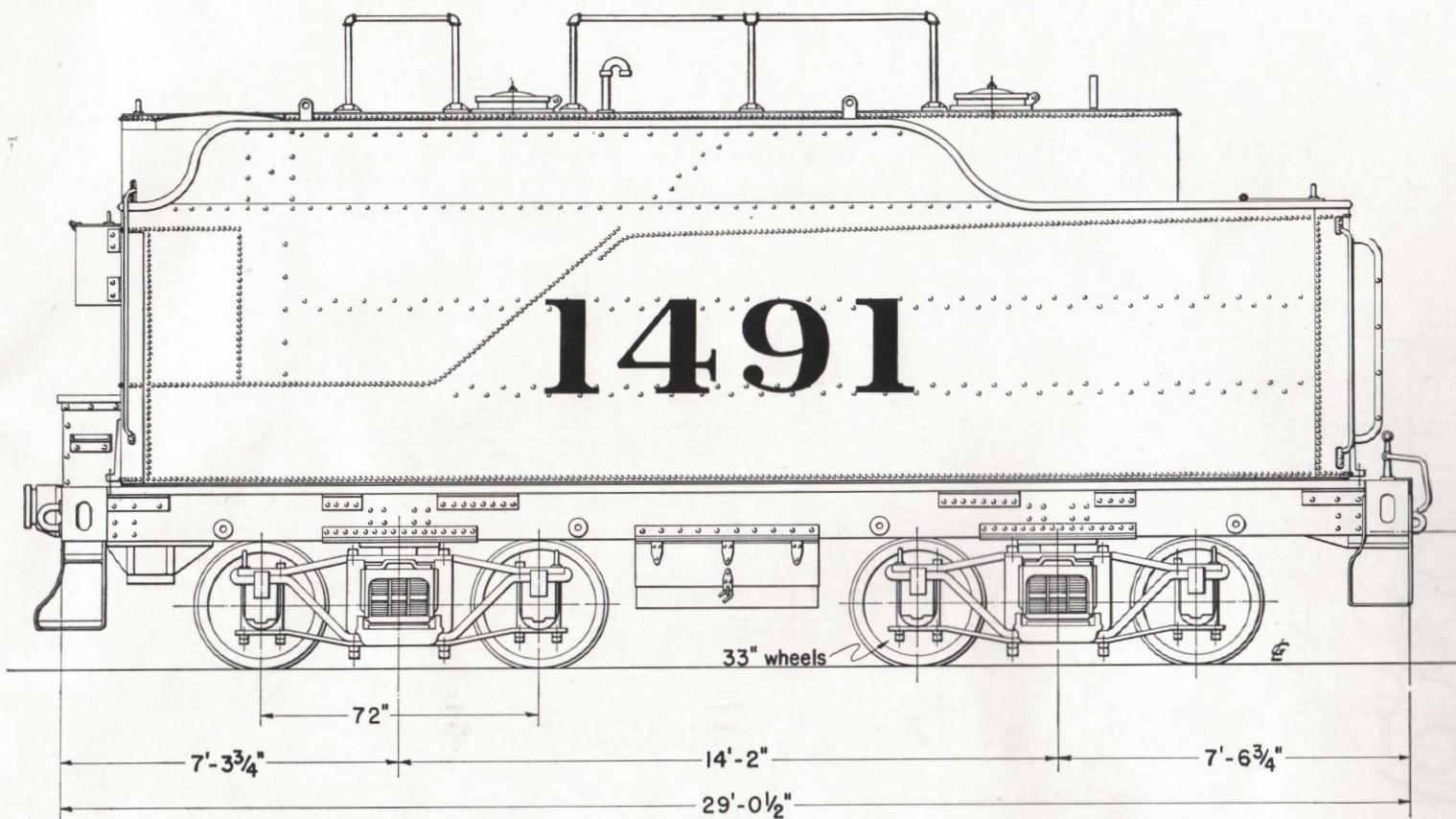
But this was inadequate as clubs mushroomed and more people became railroad model-wise — and so this booklet was created. Knowing that all model railroaders work for perfection, Santa Fe had the staff of THE MODEL RAILROADER magazine prepare the pictures, drawings, blueprints and charts for this album.

Now it is yours place it with your tools may it add another gait to your hobby-horse.

 President

SANTA FE SYSTEM LINES





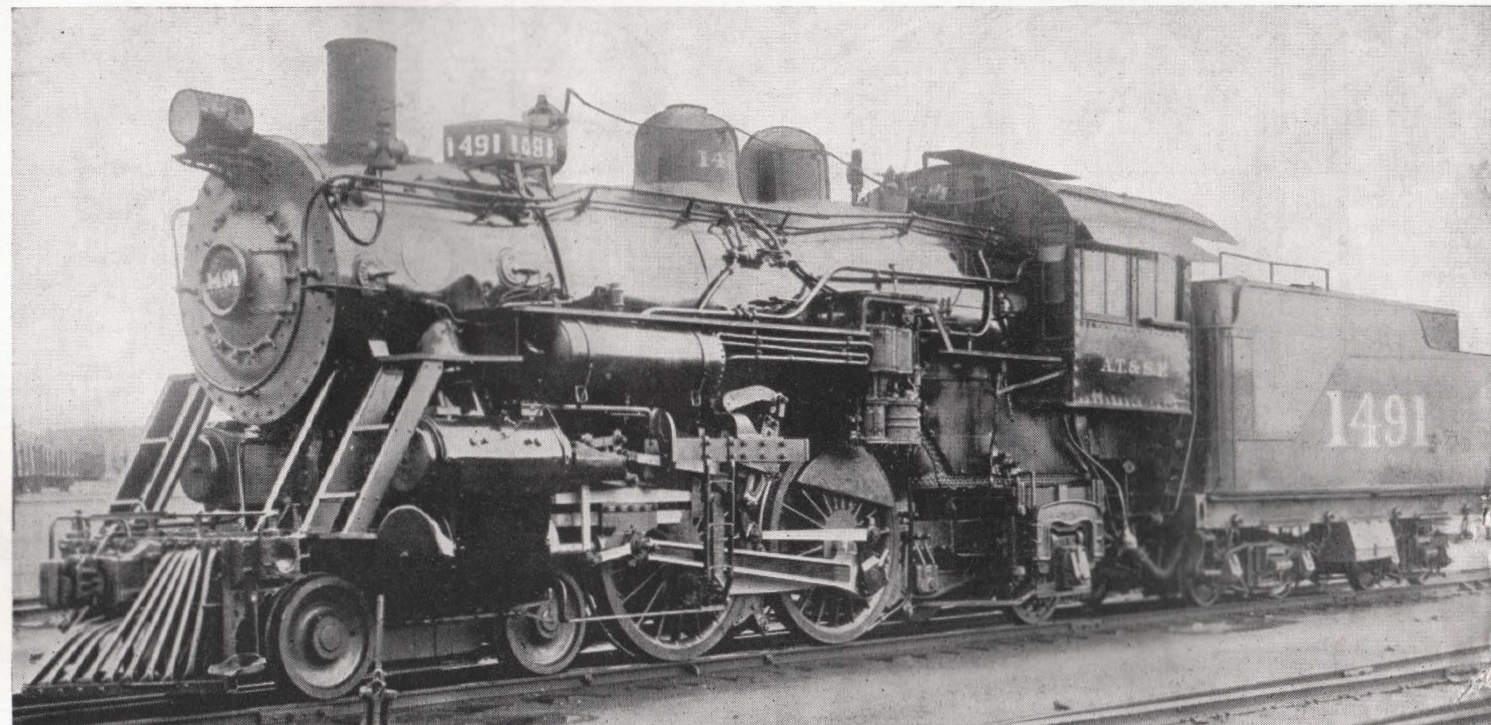
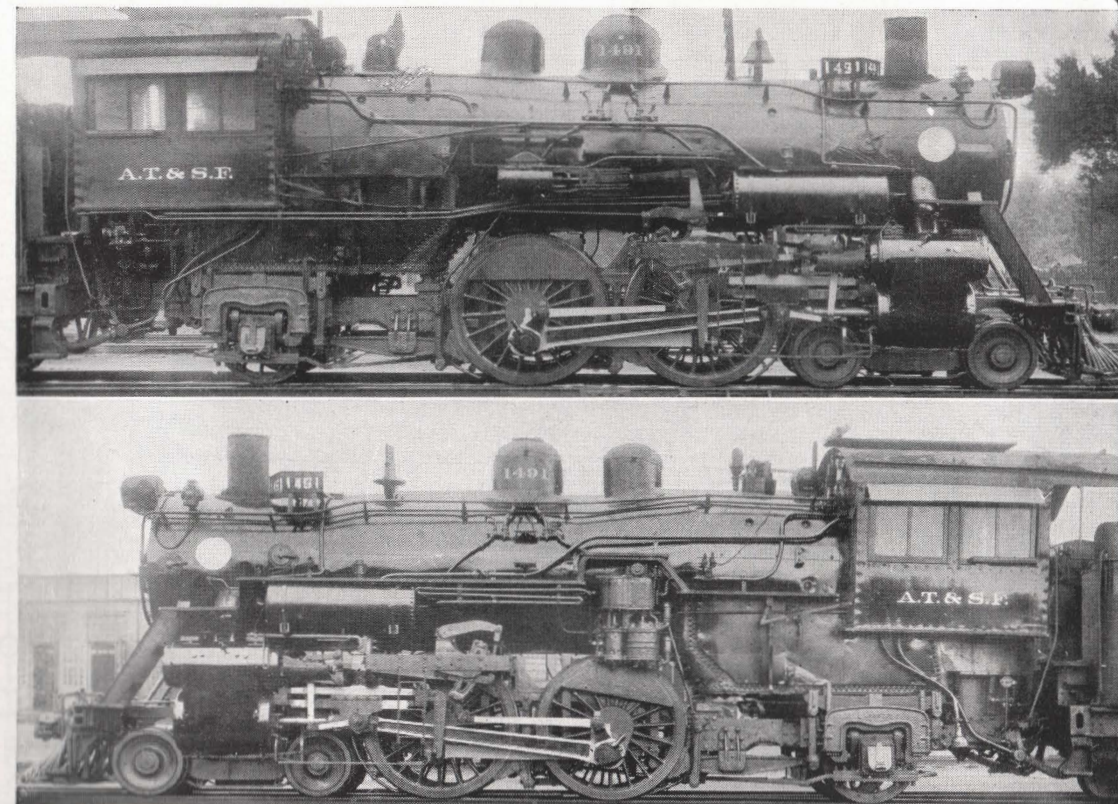
4-4-2—Class 1480

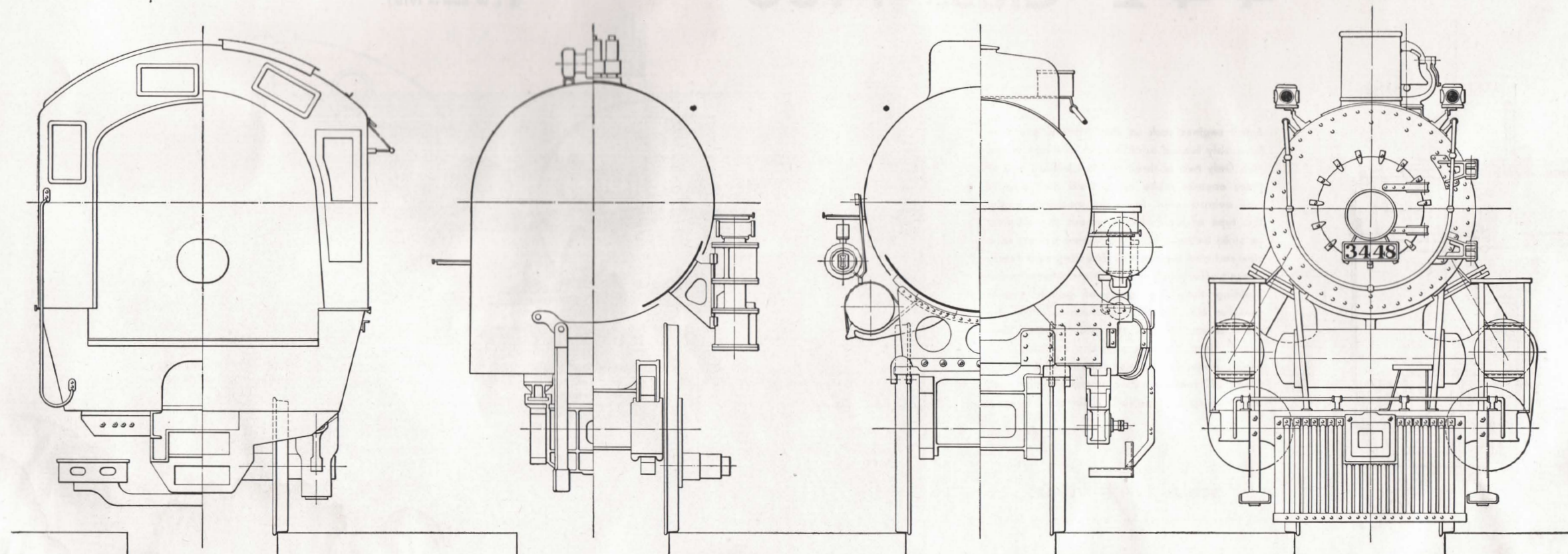
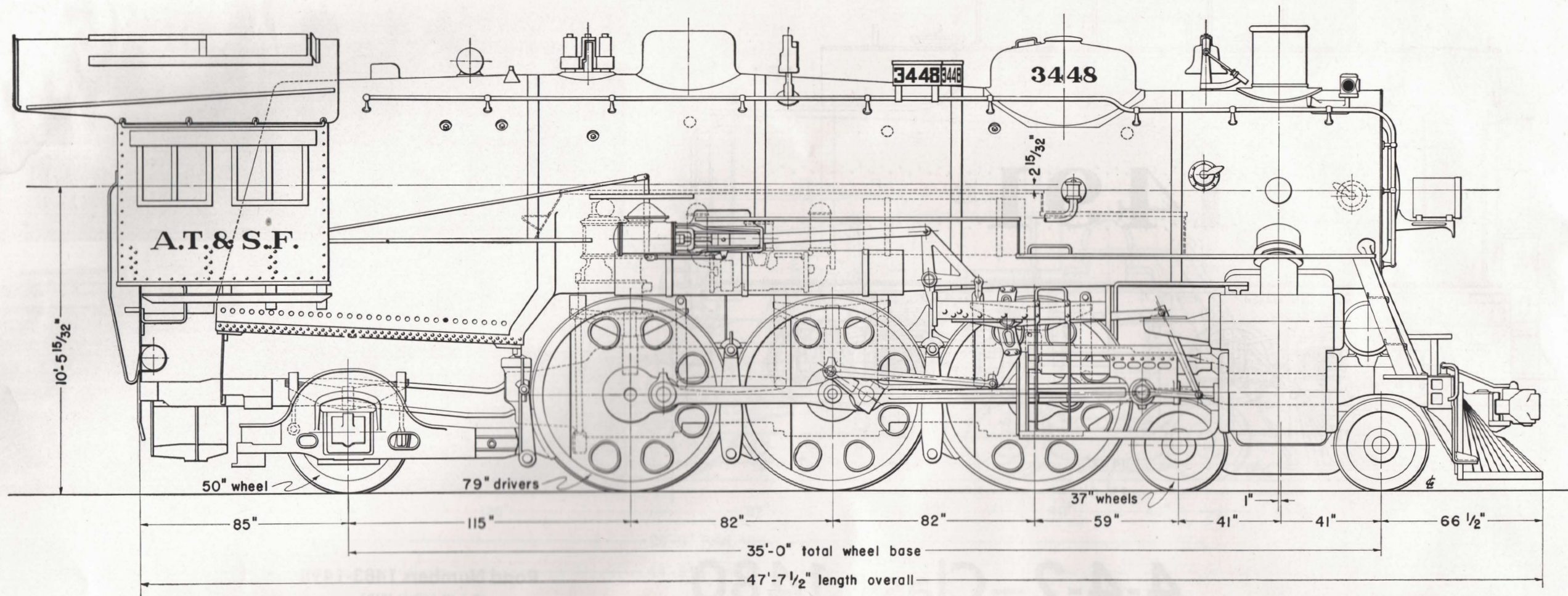
Road Numbers 1483-1498

(B. L. W.-built in 1910.)

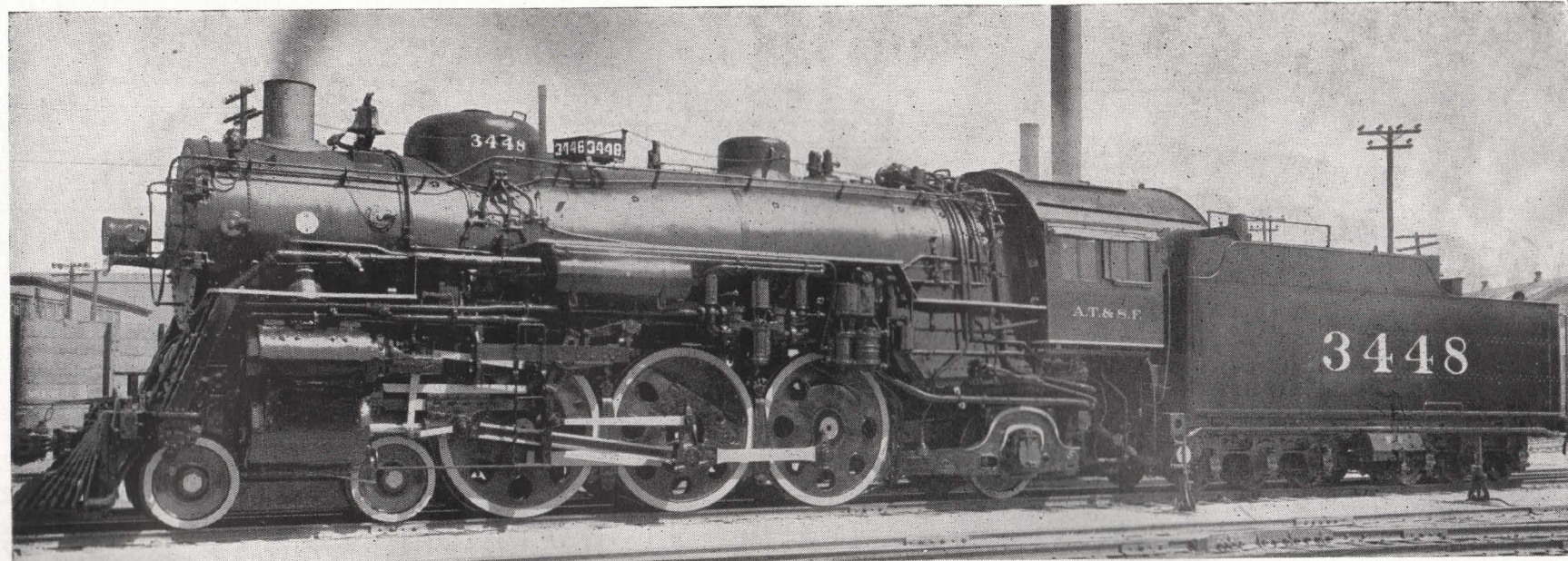
Small engines such as this Atlantic are very favorably looked upon by the average model rail. Only two or three coaches behind one of these engines make up a train that doesn't look overpowered. From the modeling angle, this type of locomotive is about the simplest to build because fitting only two drivers to a side rod and making the assembly turn freely doesn't offer much of a problem. Men who are building their first piece of power should consider No. 1491 an excellent choice. Tin plate seems to hold the paint better than brass. Used 5-gallon oil cans contain much useful modeling material (about .013" thick). Clean off soldering flux at the end of each modeling spree, especially if tin plate is used.

Scale: $1/4" = 1'-0"$





Here is a Pacific that gives the feeling of huskiness and fleetness. The nicely proportioned cab sets low, and the boiler has graceful tapering lines. No. 3448 is equipped with Boxtype driving wheels, which give this engine a modern touch. Modelers will like the profusion of pipes, pumps, and other equipment on the superstructure. All this, plus the capable-looking trailing truck, lends a rugged and powerful air to the engine. The rectangular tender has hundreds of rivets and a beaded top edge. Plenty of detail on its front end, too. As is customary with professional modelers, use .013" half-hard brass sheet or tin plate for the tender sides, deck, and cab. Either of them can be impressed with rivets and is sufficiently heavy to withstand the usual handling.

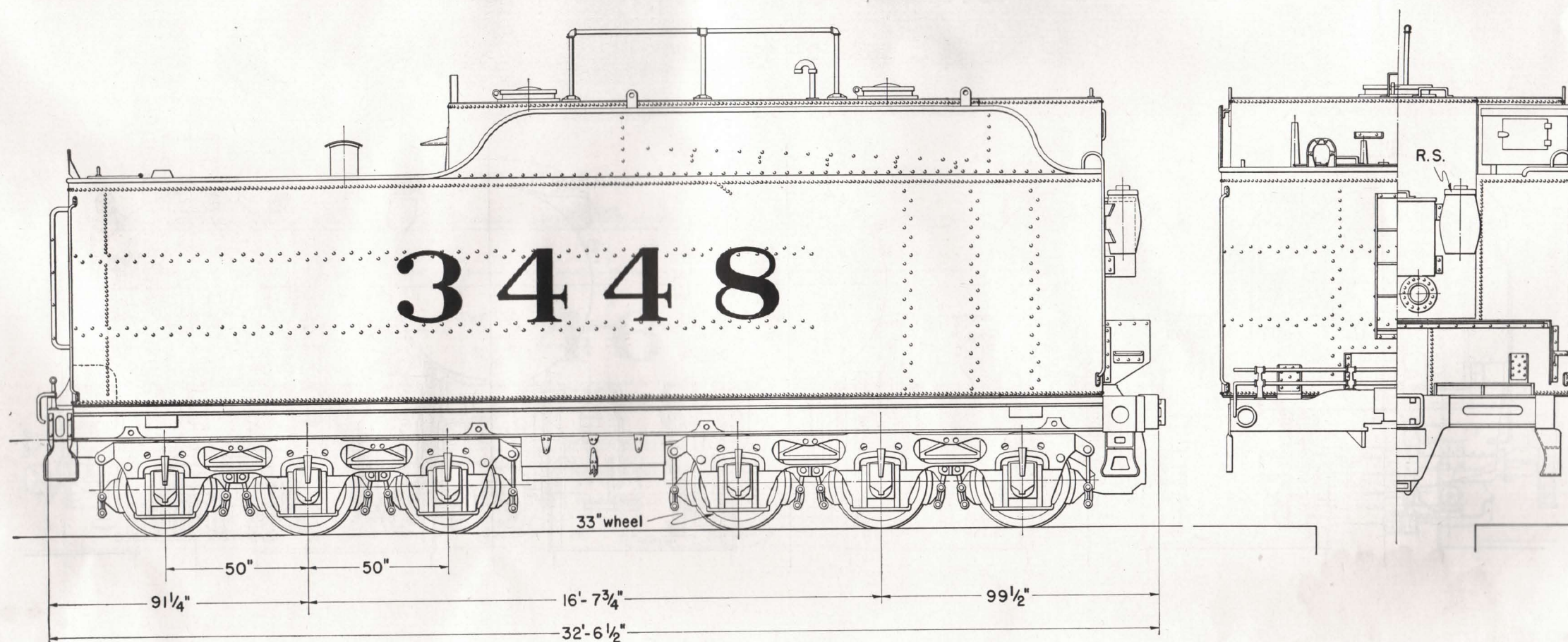


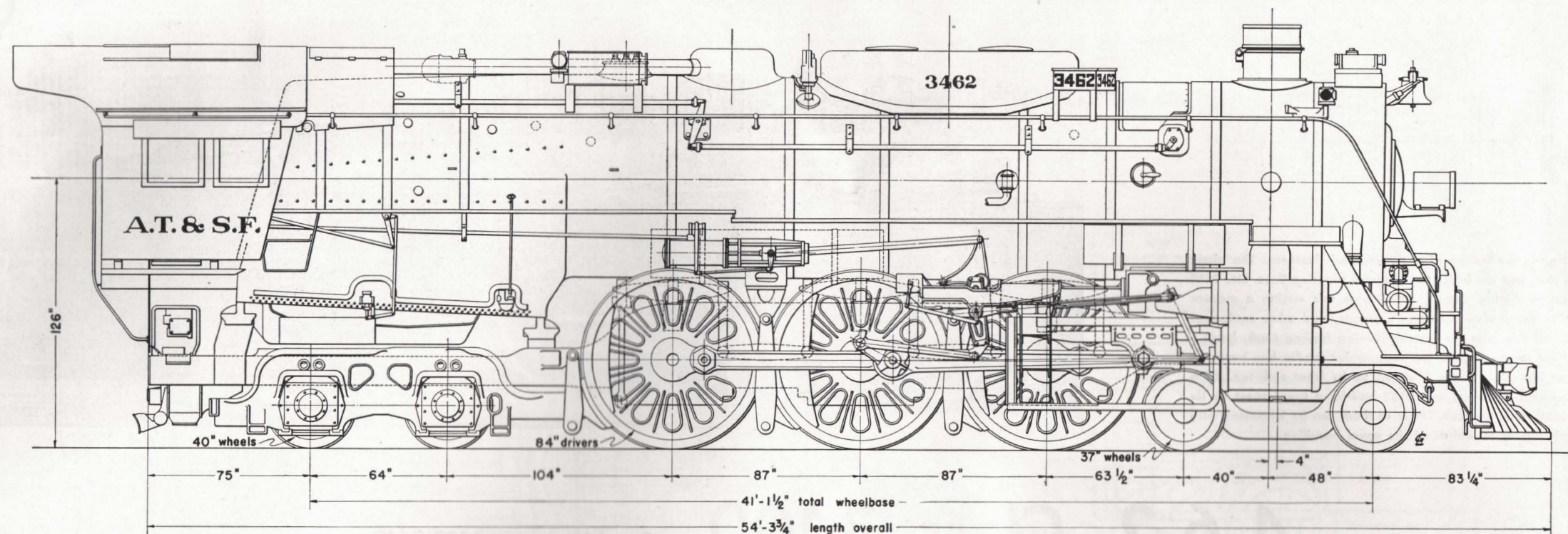
4-6-2-Class 3400

Road Numbers 3400-3449

(B. L. W.-Built in 1919-24.)

Scale: 1/4" = 1'-0"



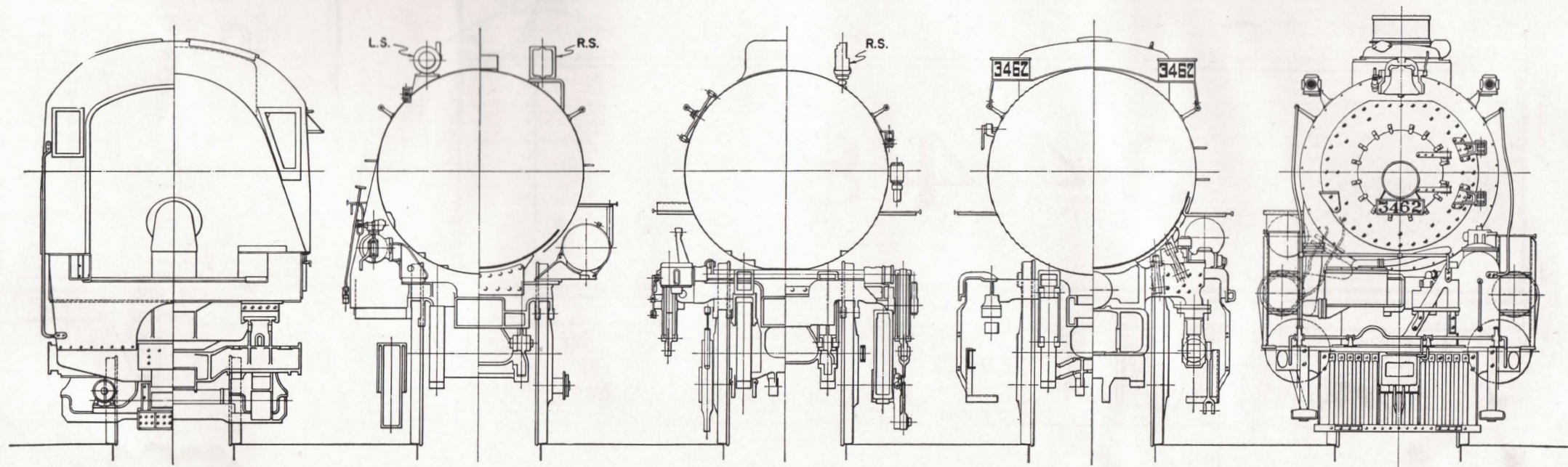


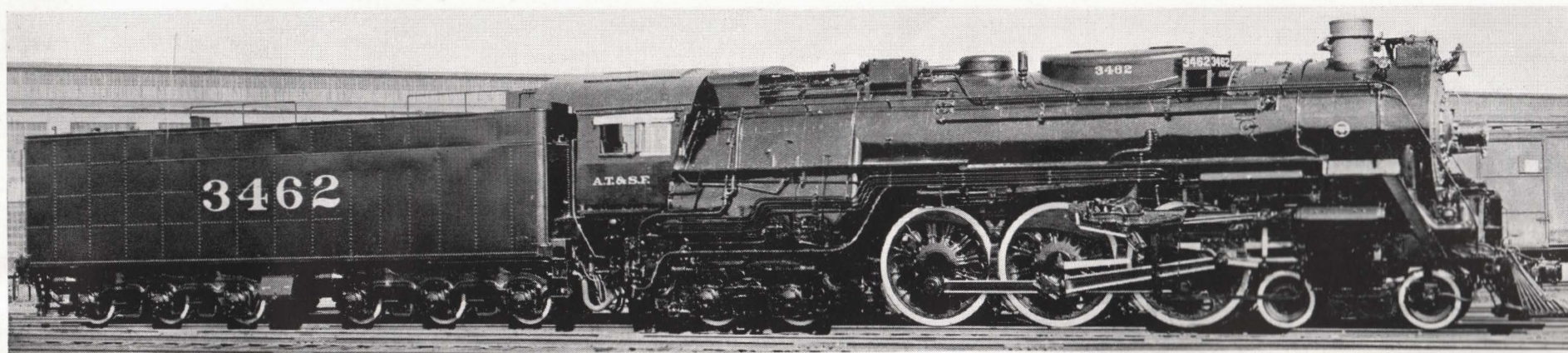
4-6-4—Class 3460

Road Numbers 3460-65

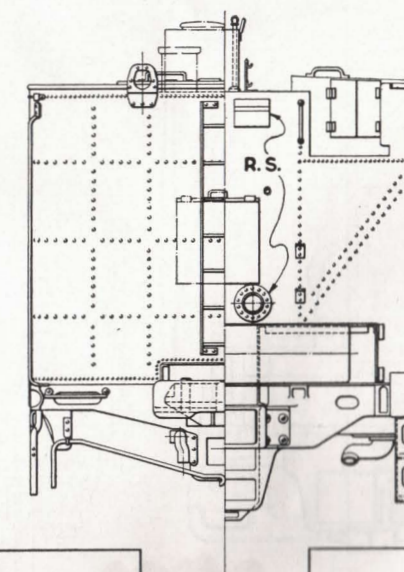
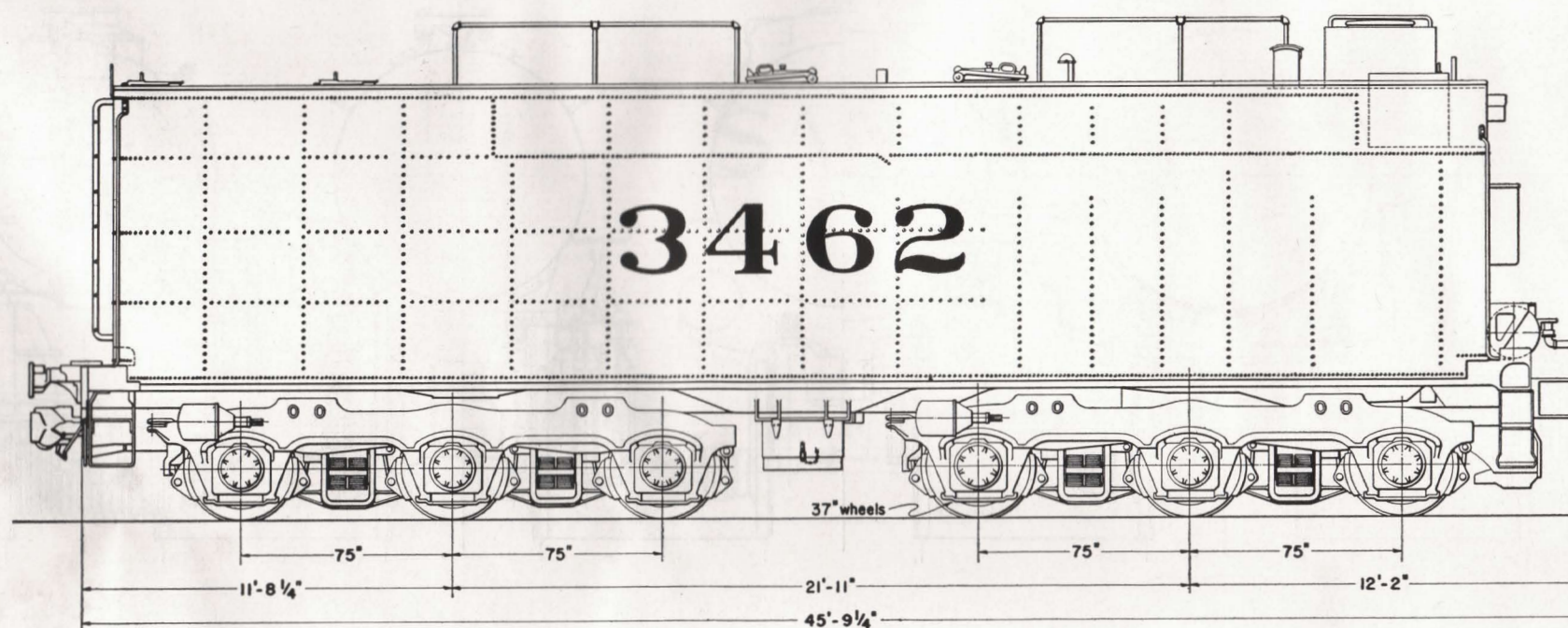
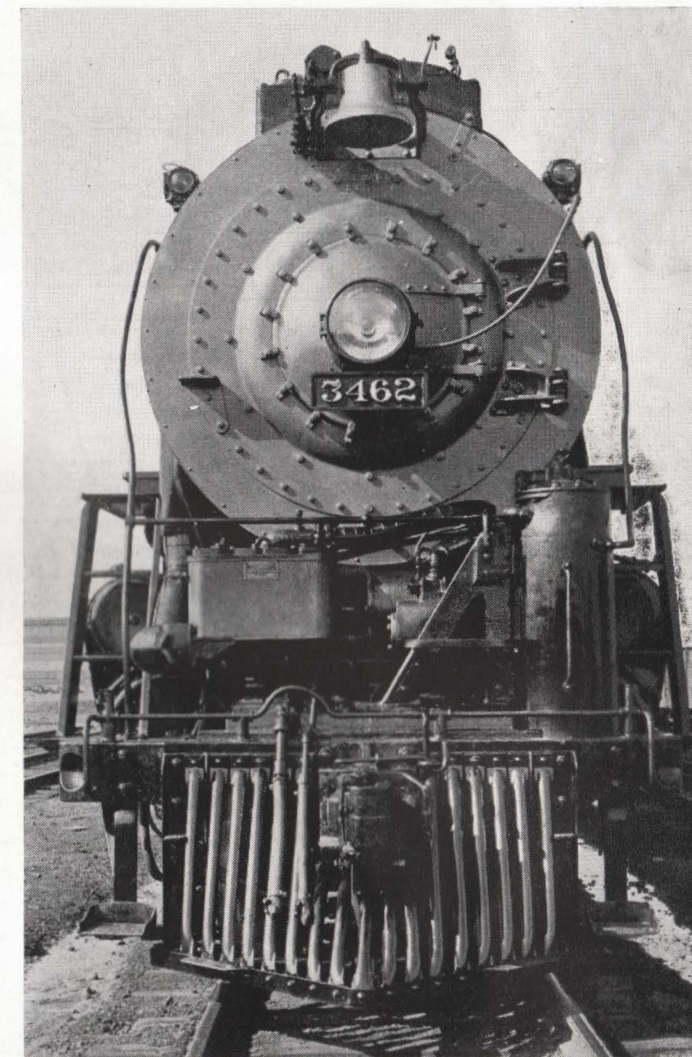
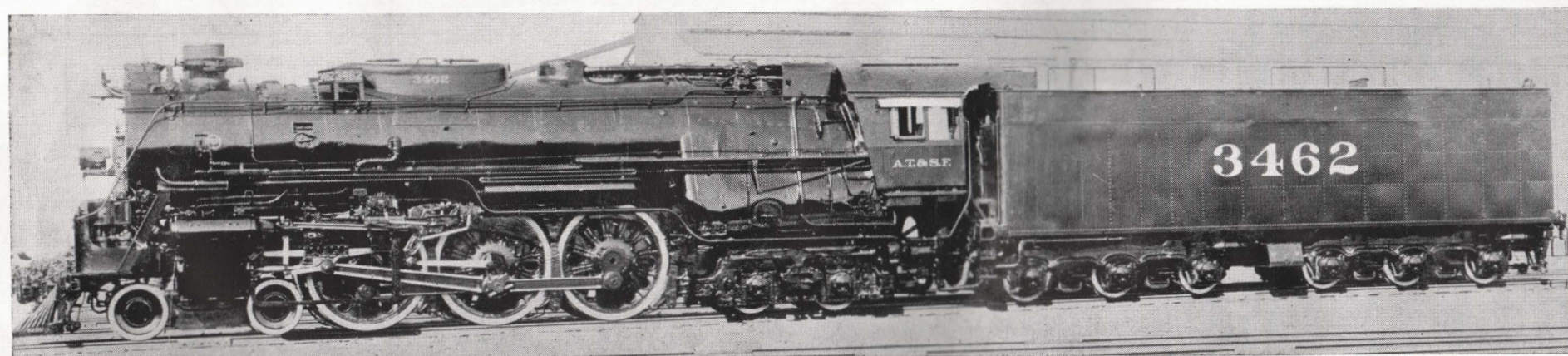
(B. L. W.-built in 1937.)

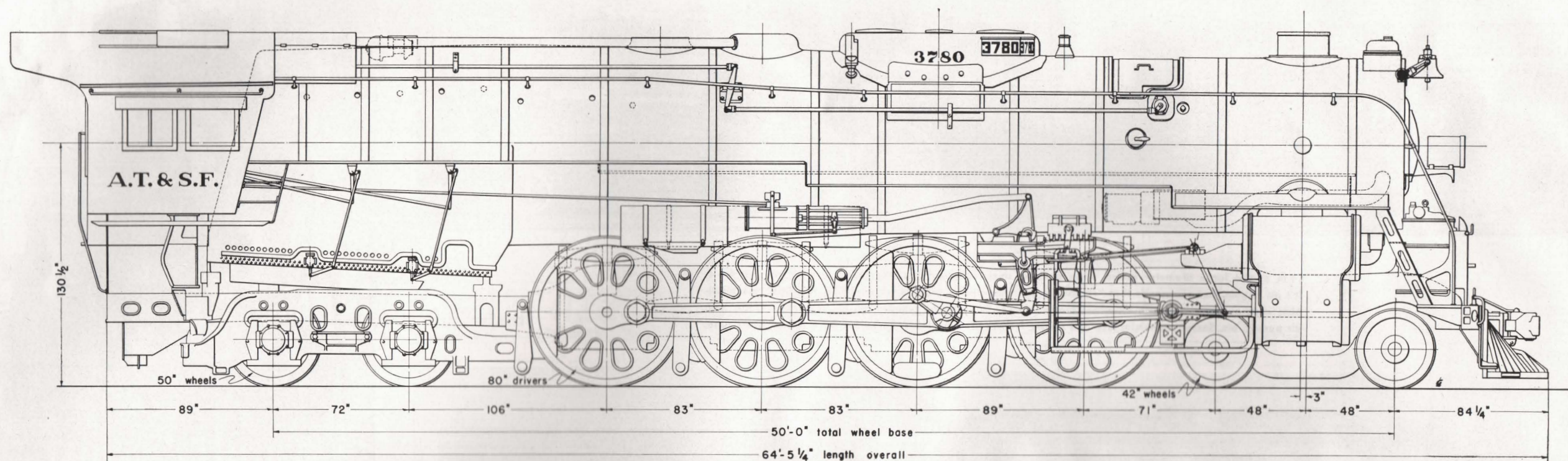
Scale: 3/16" = 1'-0"





Look at the large diameter boiler, wide firebox, sleek cab, and the tremendous tender of this 4-6-4. It's an engine that commands that "second look." Many parts suitable for modeling No. 3462 are available such as Commonwealth six-wheel tender trucks, 84" drivers, cylinder blocks, smokebox front, bell, air pumps, etc. Some commercial loco and tender frames are adaptable. Boiler can be a turned brass tube.



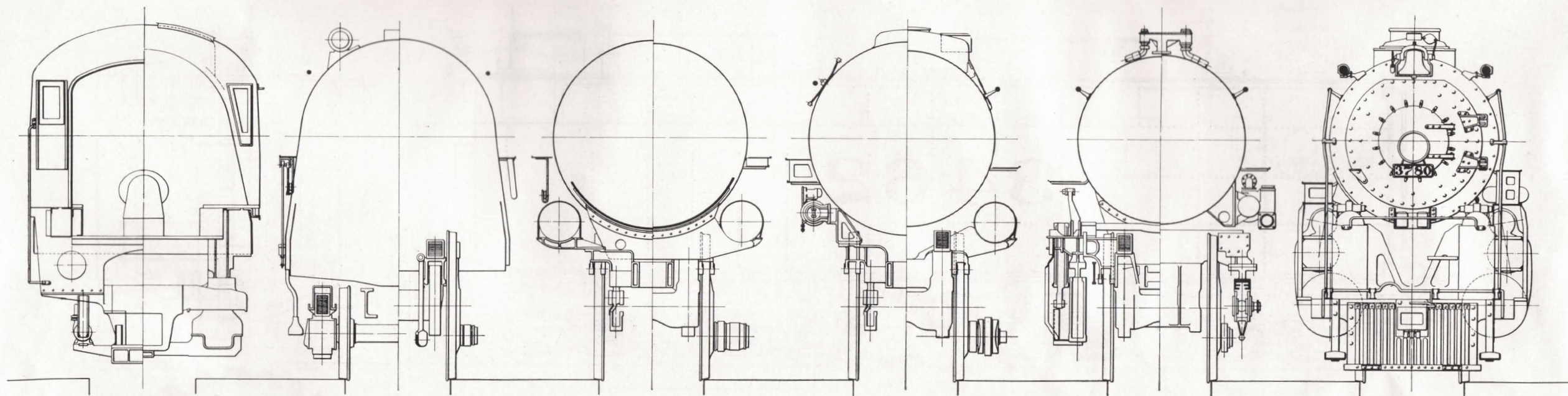


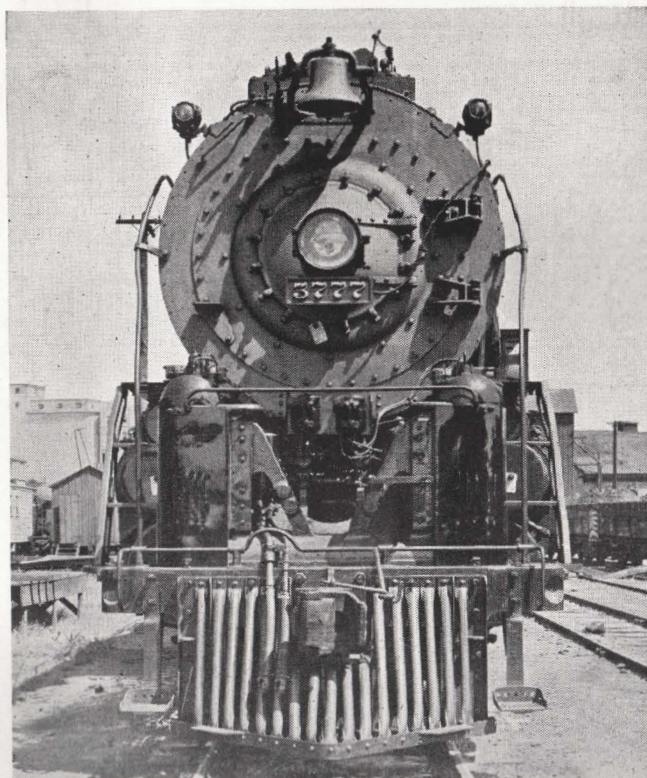
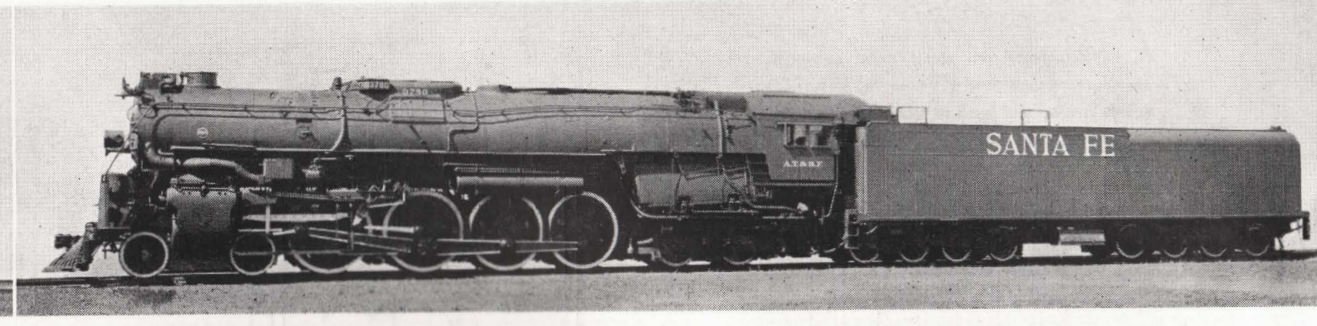
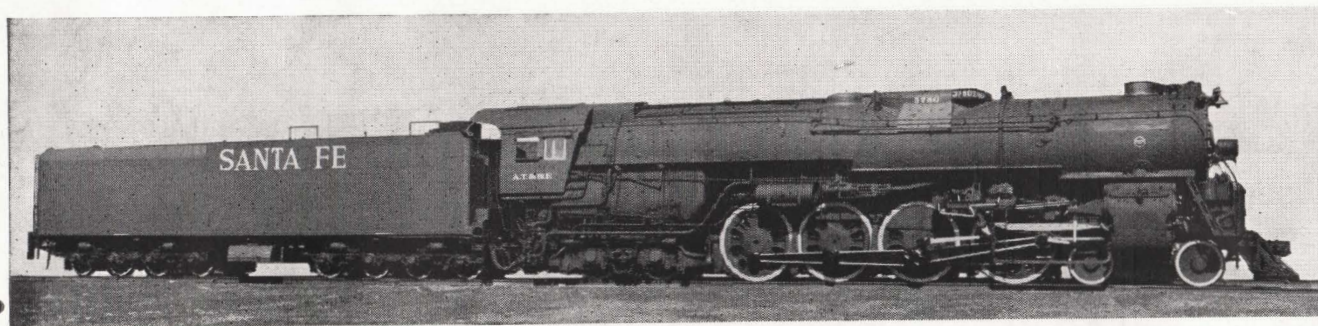
4-8-4—Class 3776

Road Numbers 3776-3785

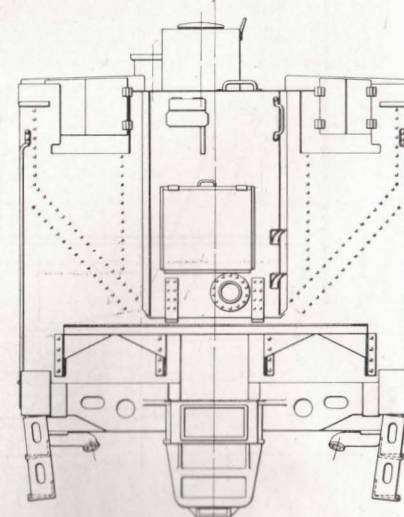
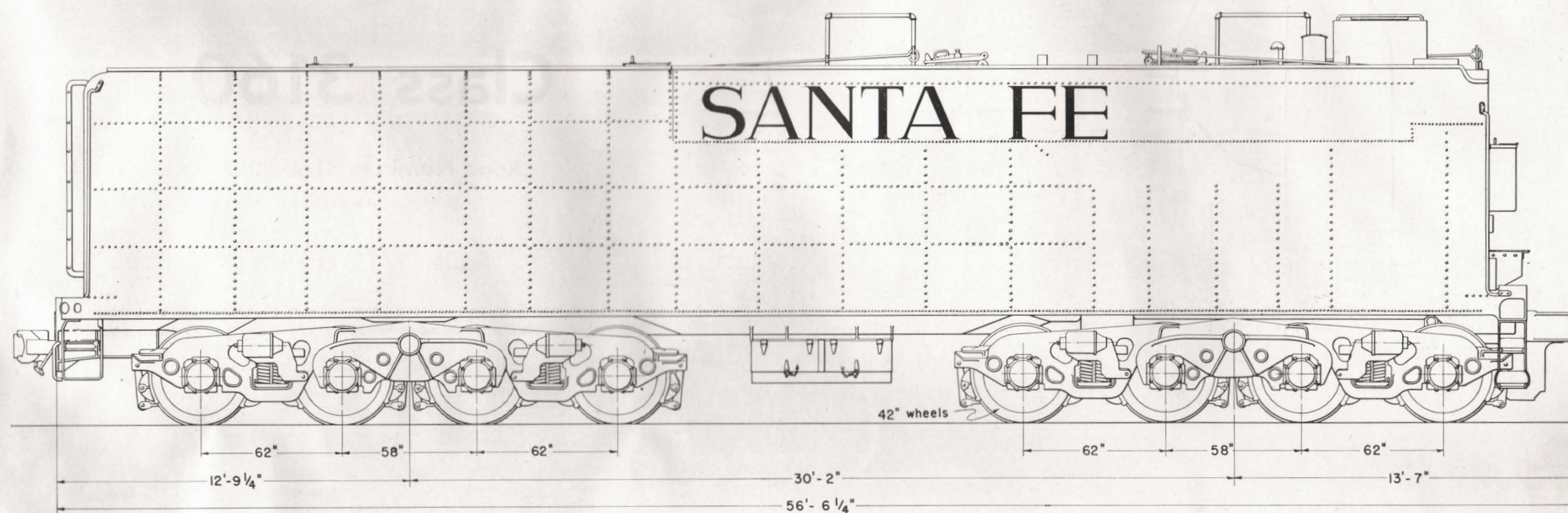
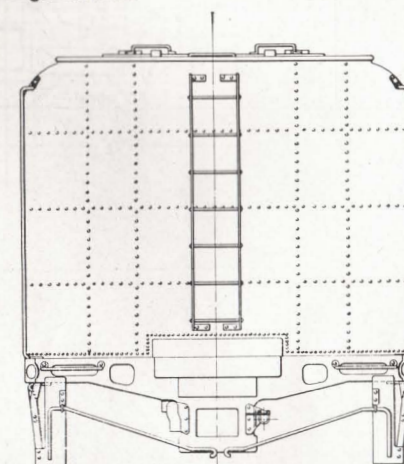
(B. L. W.-built in 1941.)

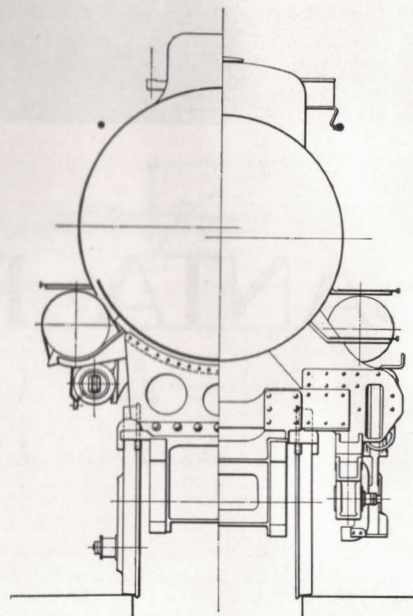
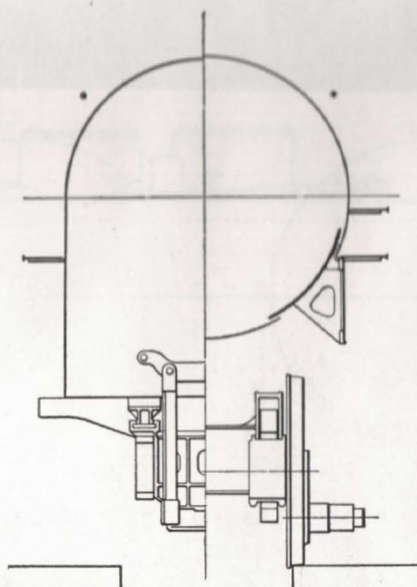
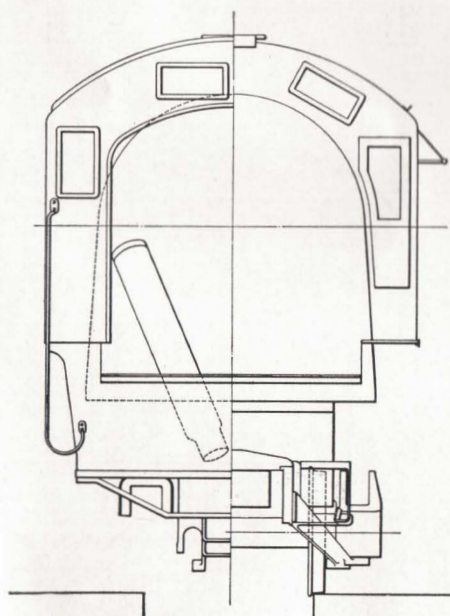
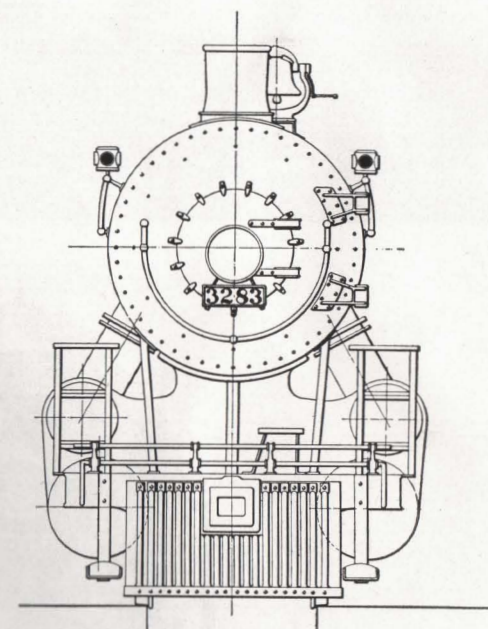
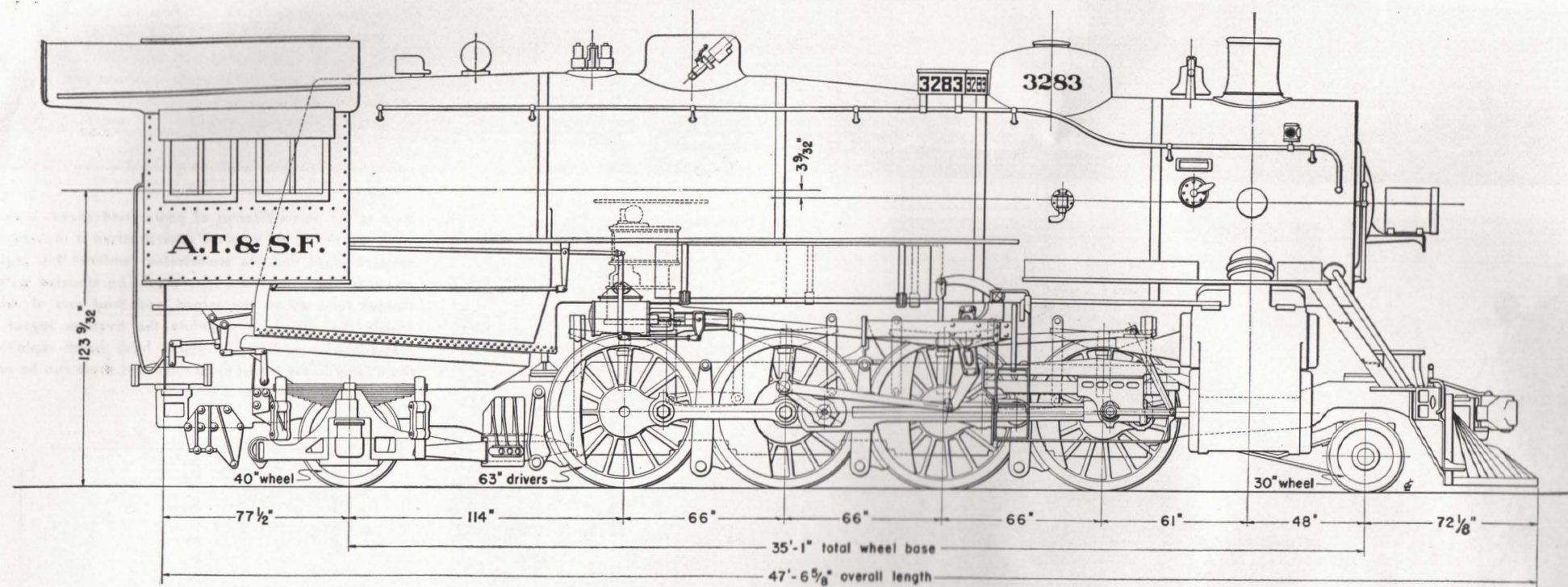
Scale: $\frac{3}{16}'' = 1'-0''$





Here is the personification of power and speed. Look at the front-end detail, the way the superstructure is tapered, the impressive pipes and the multiriveted tender — this engine has plenty of "it." This 4-8-4 type should be modeled with wheel flanges removed on the second and third sets of drivers to enable the engine to negotiate the average layout curves. Methods of modeling an engine have been exploited very thoroughly in the model magazines and these can be reviewed in most large libraries.





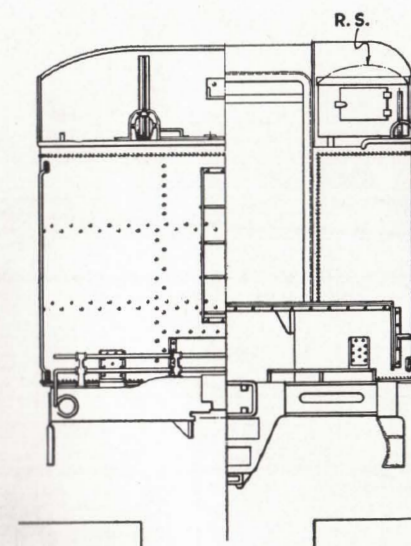
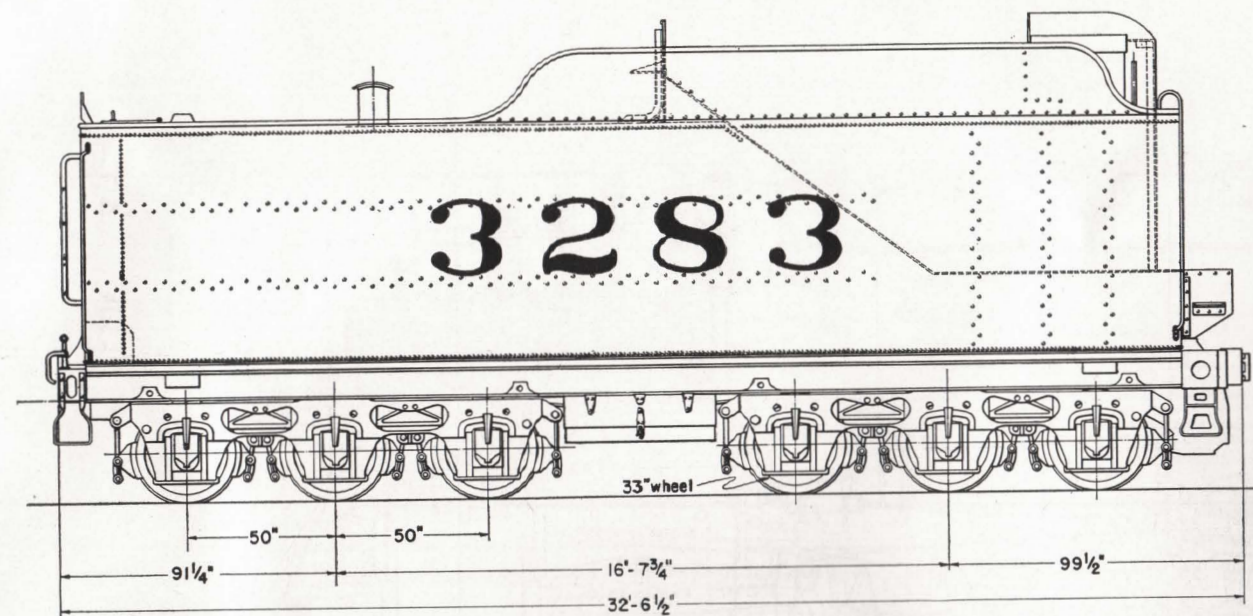
2-8-2 Class 3160

Road Numbers 3160-3287

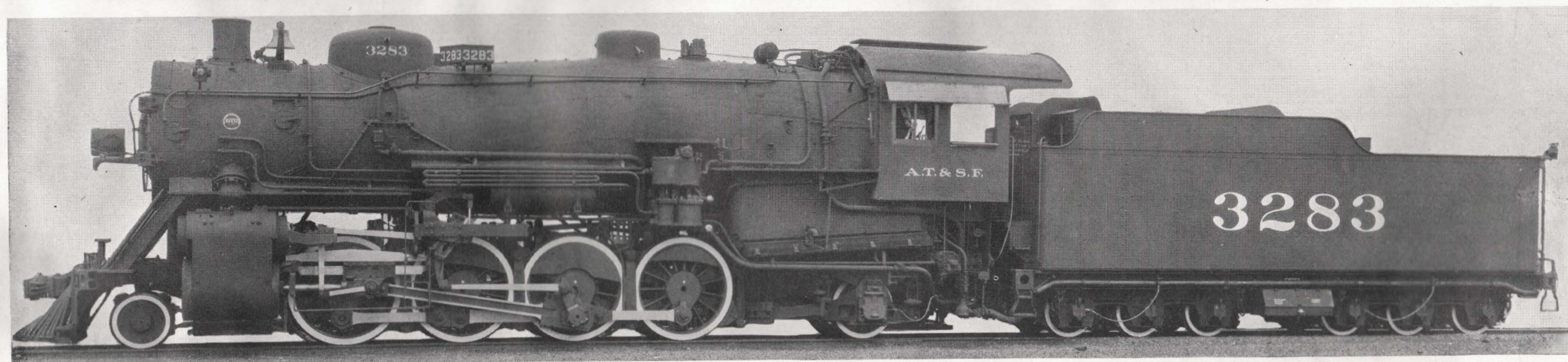
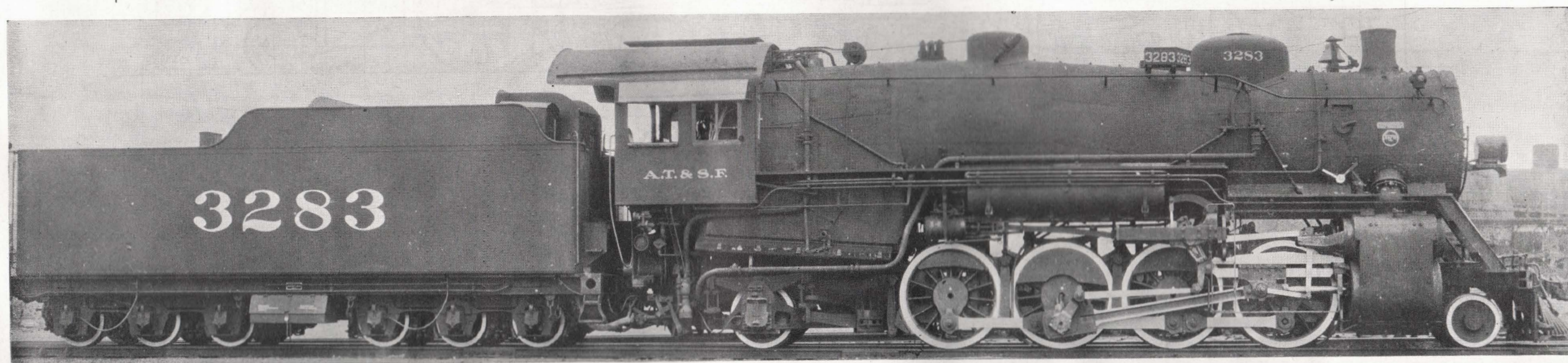
(B. L. W.-built in 1917-20.)

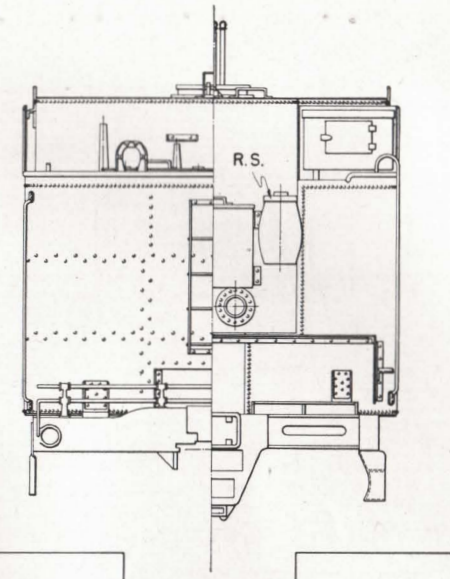
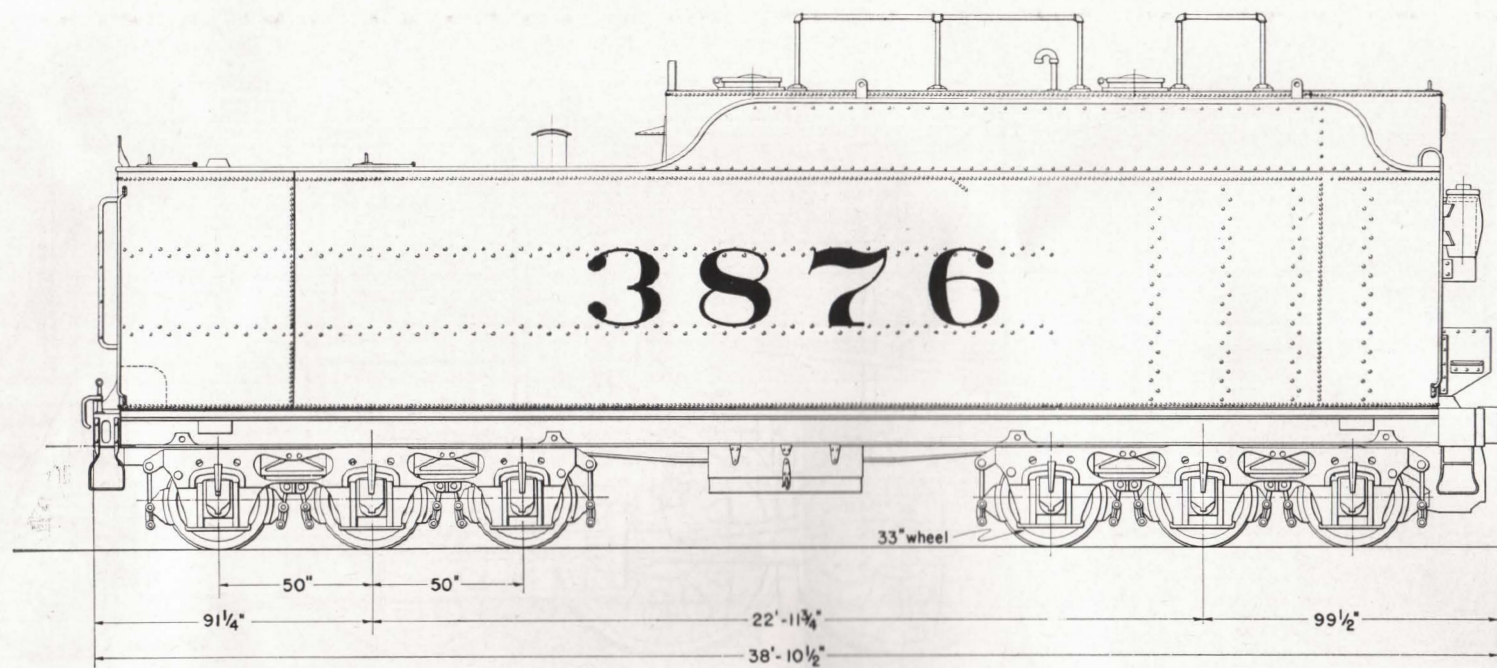
Scale: $\frac{3}{16}$ " = 1'-0"

For ease in modeling, those interested in building to other scales can have these plans photographed or photostated to full size of the model to be constructed.



Mikados have been the work horses of railroads for many years, and you should build one of these to haul the freight drags over your pike. Engine frames, driving wheels, leading, trailing, and tender trucks are but a few of the parts that can be purchased. The boiler can be turned in a lathe, using a brass tube, or it can be formed around a turned wood core using brass or tin plate sheet stock. The drawing shows that the boiler has four distinct courses or differences in diameter, therefore four separate pieces of sheet stock should be cut, fitted, and soldered together on the wood core. German silver, obtainable from large brass firms, is ideal material for the side and main rods and valve motion parts. Flanges of two center sets of drivers should be removed to enable the model to traverse sharp curves.





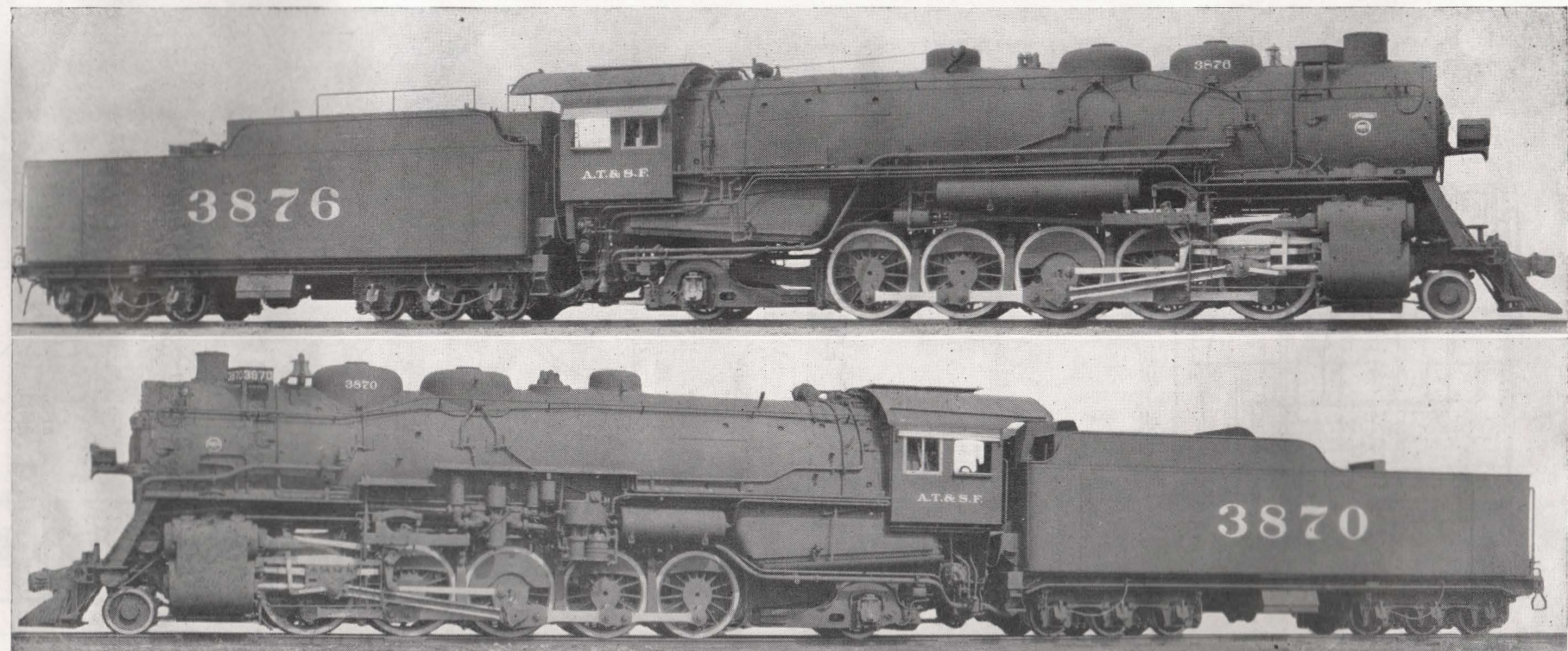
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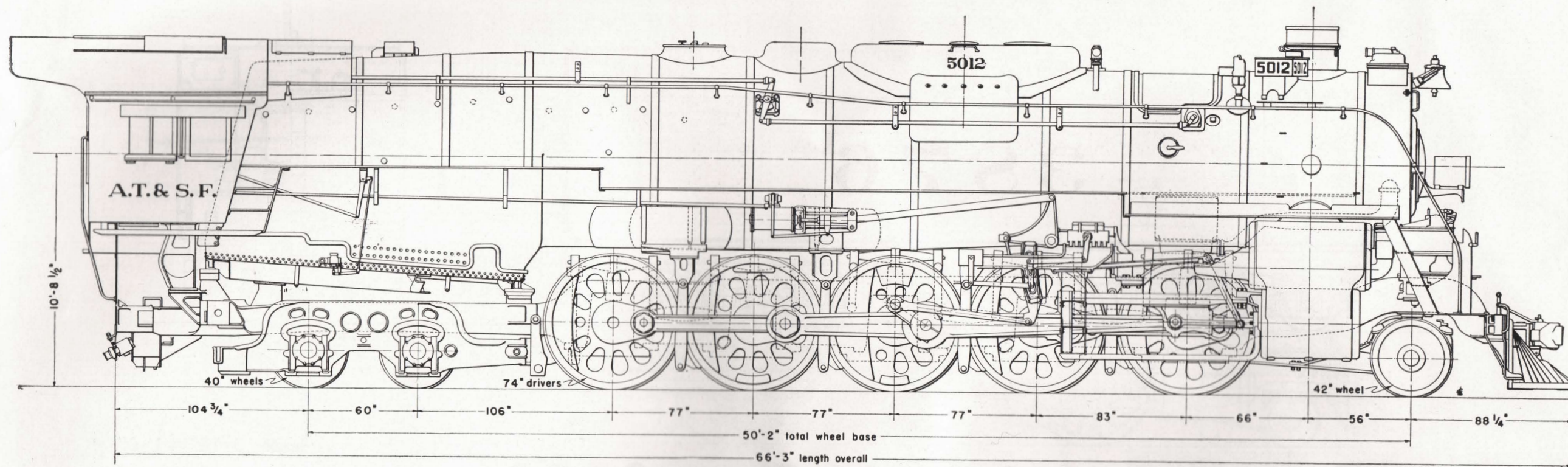
2-10-2—Class 3800

Road Numbers 3800-3940

(B. L. W.-built in 1919-27.)

The action of this Santa Fe's 10 drive wheels working in unison with the side rods is a real display of machinery at work. The bottom picture shows the profusion of detail that can be incorporated on the model. Intriguing, too, is the front end view which shows the husky stack and a wealth of rivets, rods and tank. The completed model should be weighted to a point where the drivers will barely slip on the test track when full voltage is applied and the engine is prevented from moving.

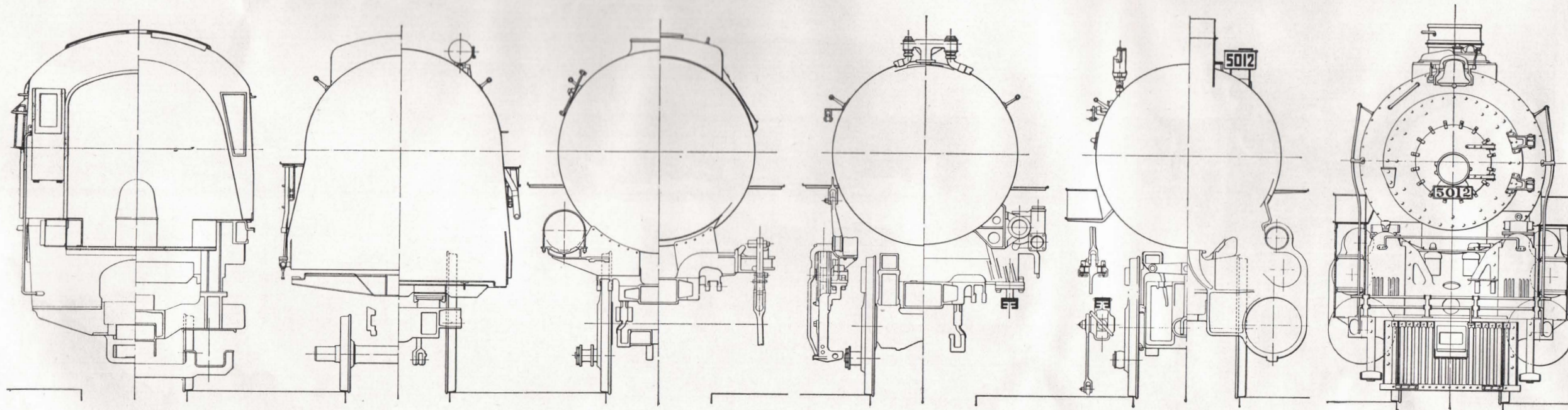


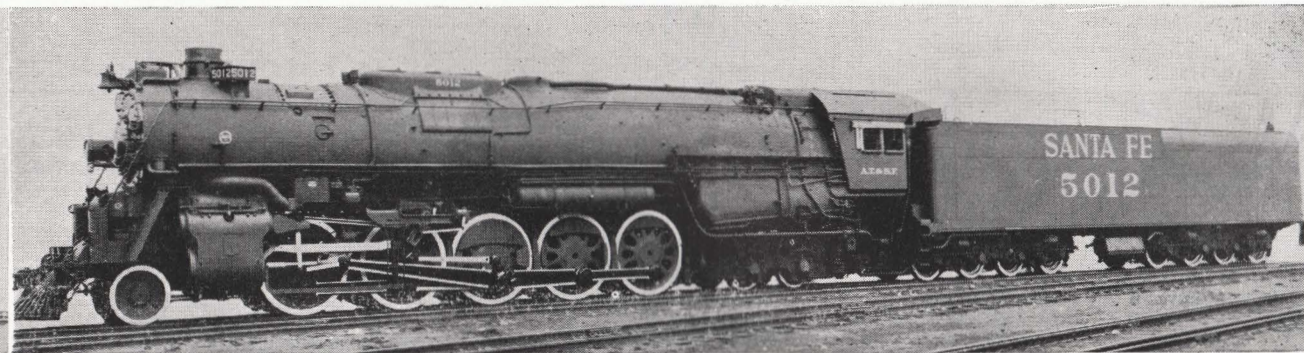
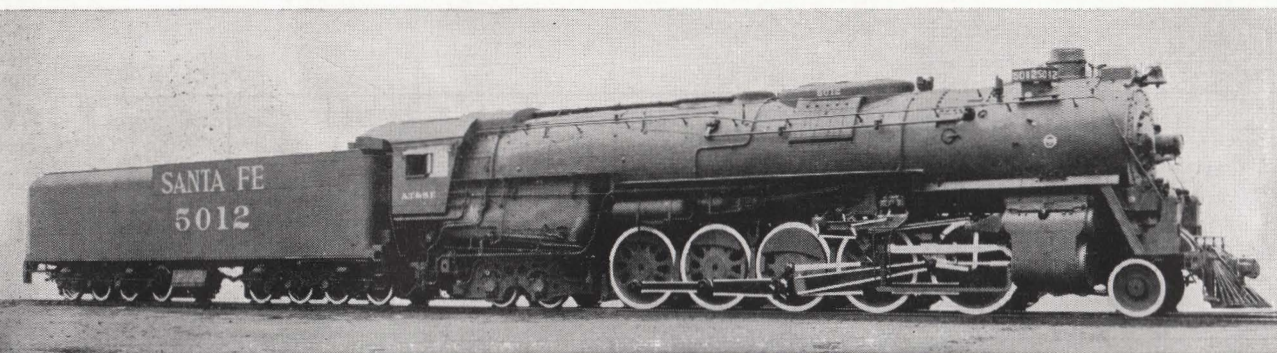


2-10-4—Class 5011

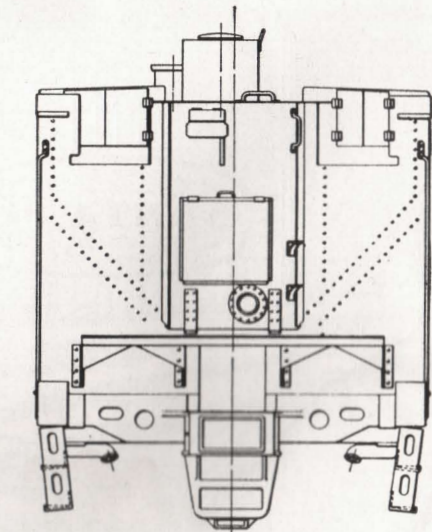
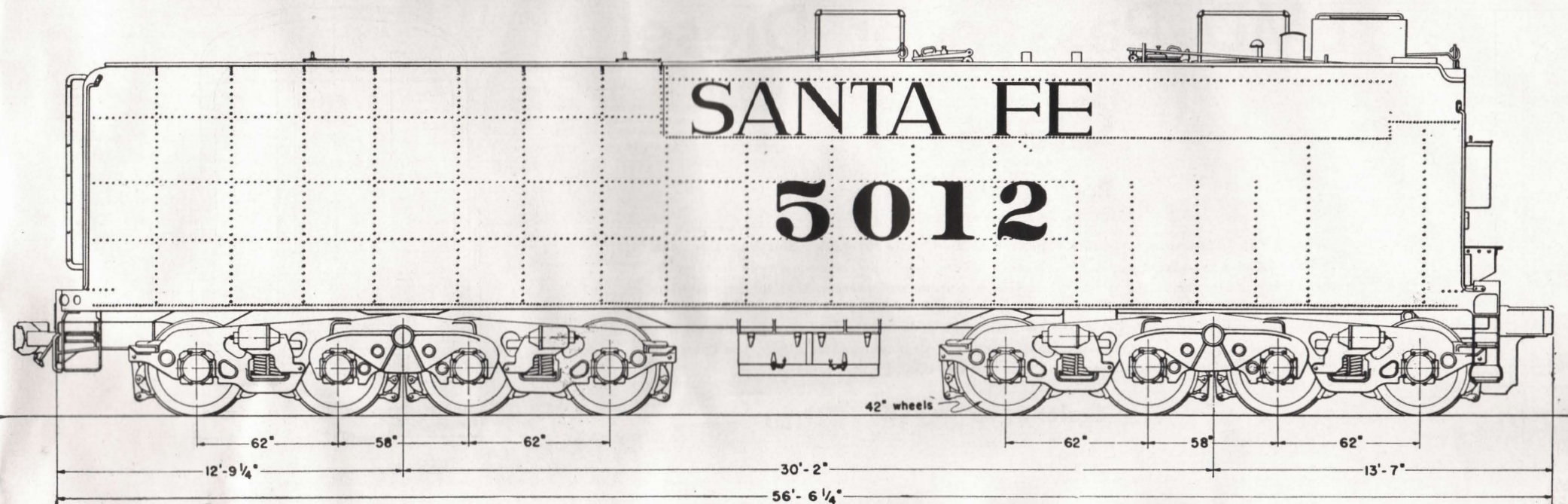
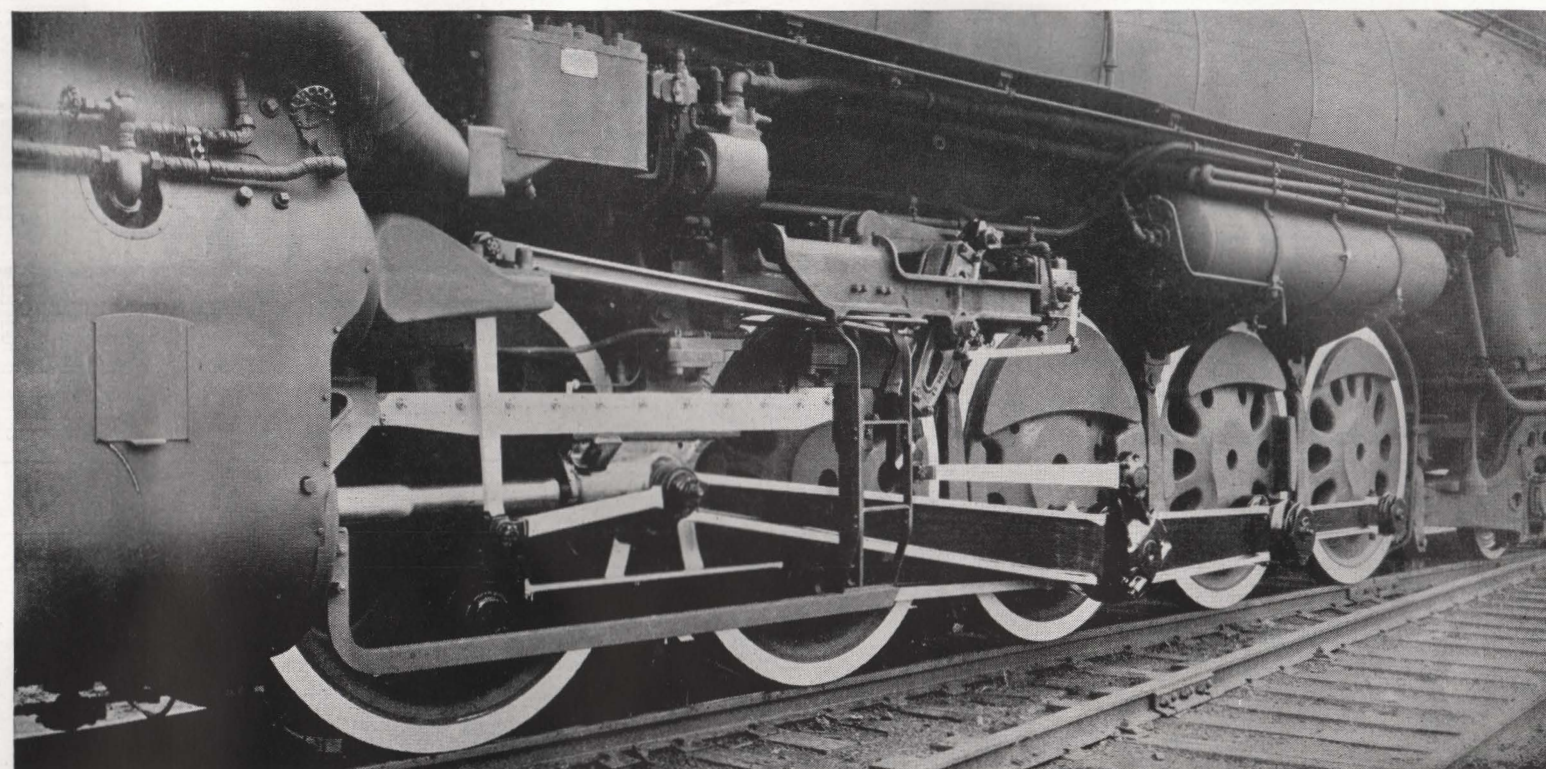
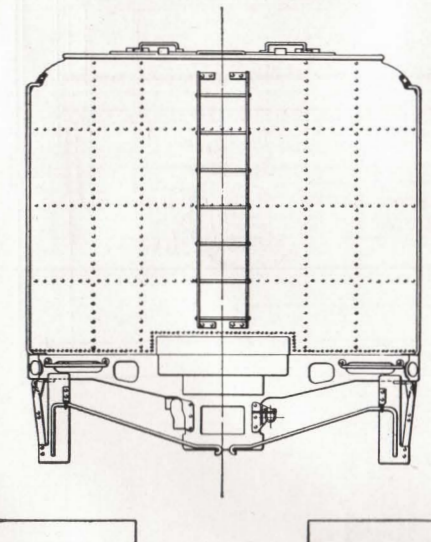
Road Numbers 5011-35 (oil burning)

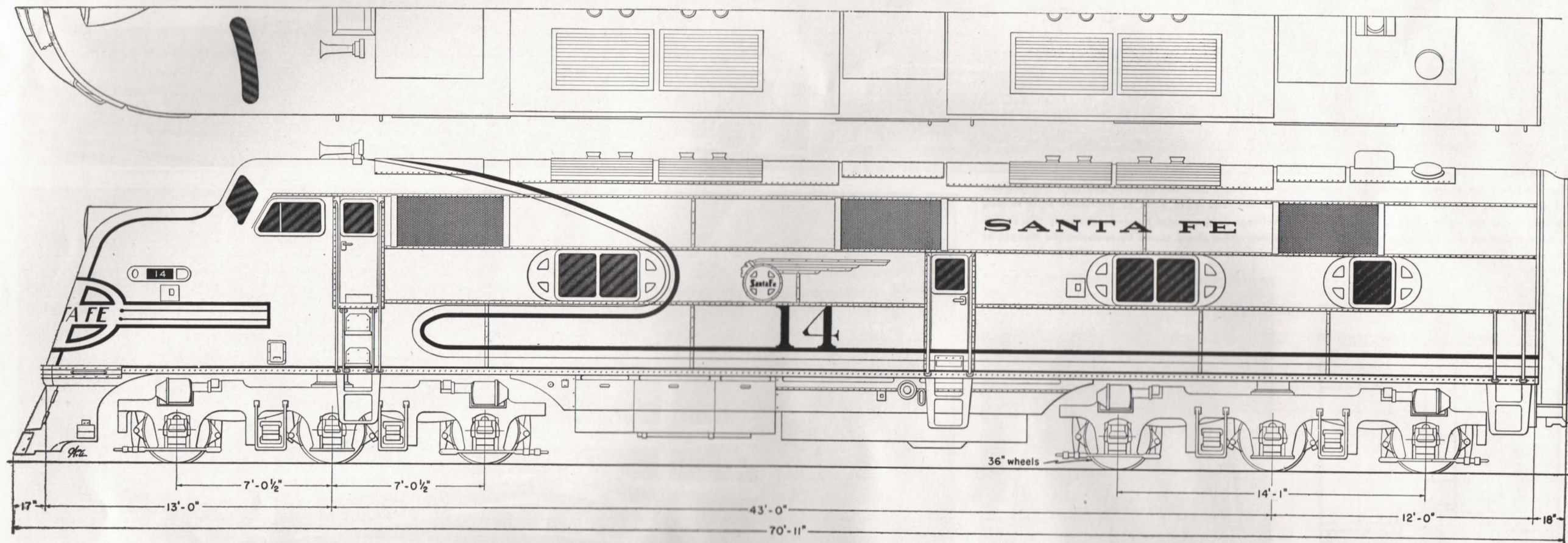
(B. L. W.-built in 1944.)





These 2-10-4's are massive engines with tenders that are longer than the average box car. The five sets of drive wheels connected with the gracefully tapered side rods make quite an impressive sight turning in unison, and the eight-wheel tender trucks are a challenge to the model builder. Obviously this engine is for mainline service, but it can be modeled to negotiate rather sharp curves by removing the flanges of the center sets of drivers.





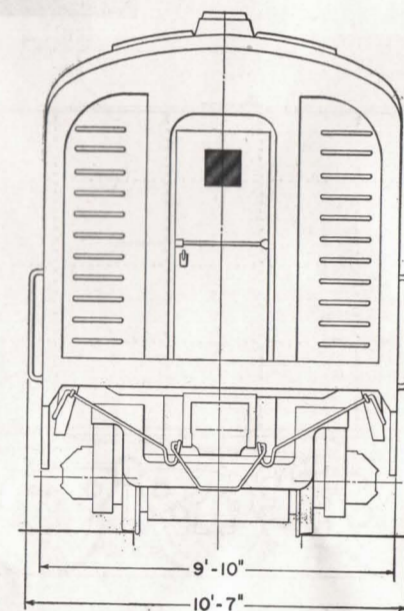
EMD Passenger Diesel Class 11

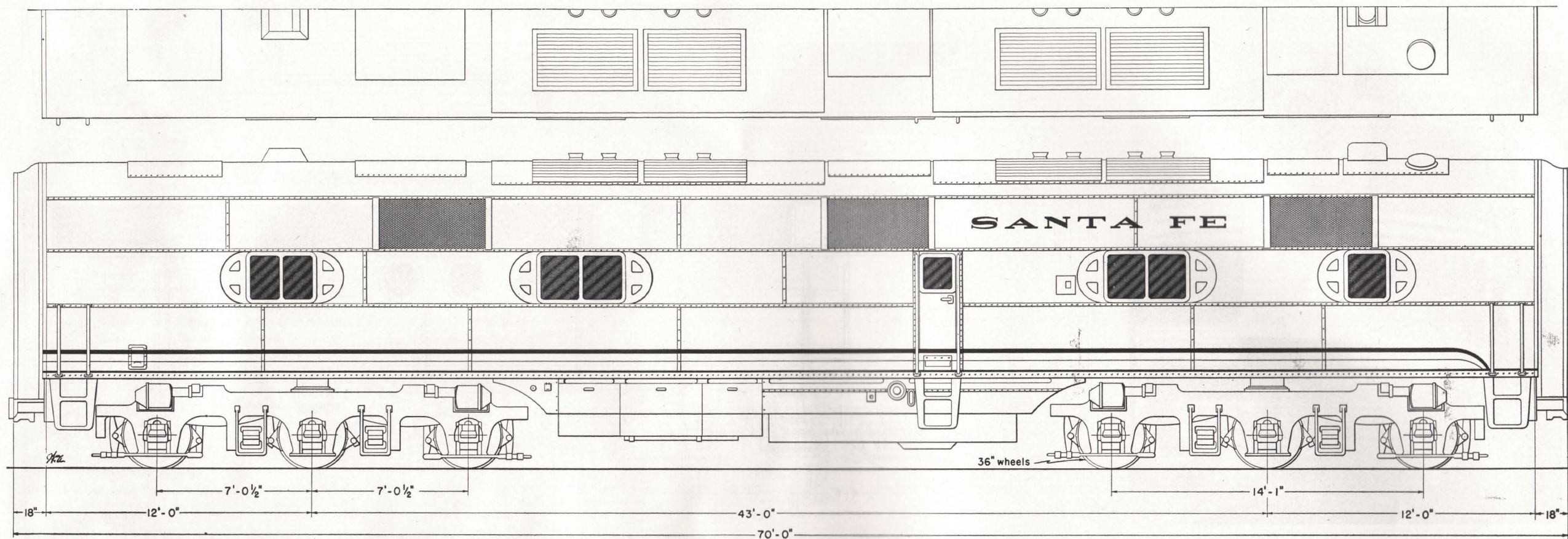
Road Numbers 11-15

(E. W. C.-built in 1939-41.)

Prototype diesel locomotives are more difficult to build and more expensive than comparable steam locomotives but in model railroading it's just the opposite. Few model railroaders build diesel trucks, preferring to buy commercial products complete with motor and gearing. Then the superstructure is all they need build. Often they make it of .013" half hard sheet brass, for it is easily soldered and takes rivet impressions well. Other possible materials include tin (five gallon automotive oil cans are fine when cut up), wood, fiber board, or cardboard. Air horns, ladders, designation lights and such are available at hobby stores for so little cost that it hardly pays to make them.

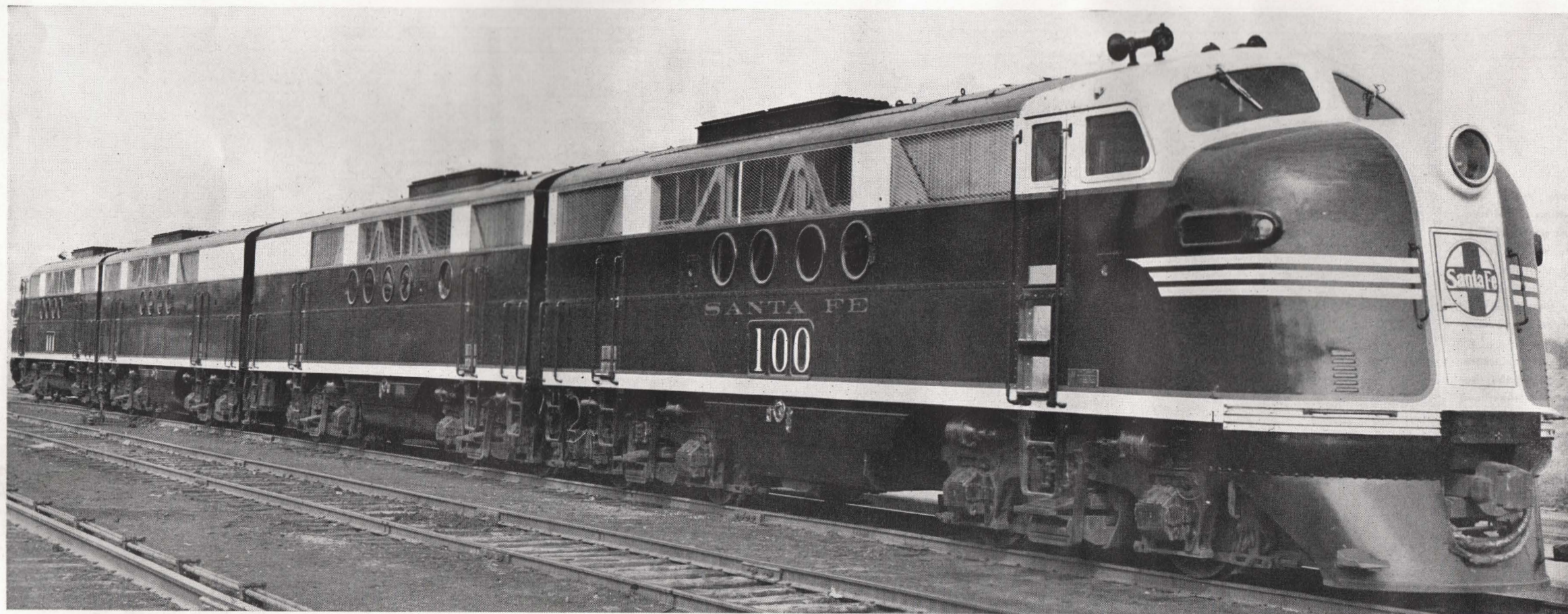
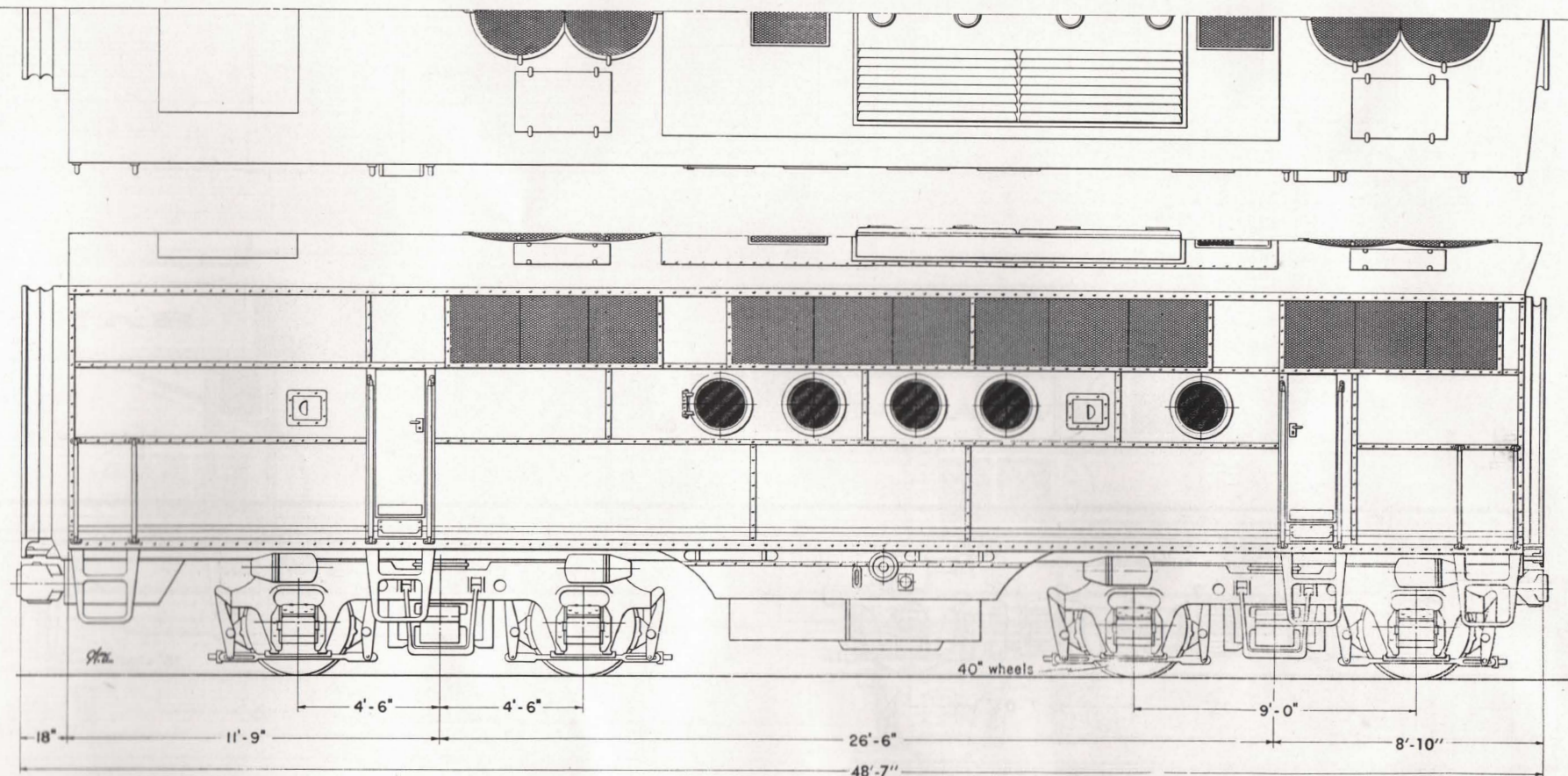
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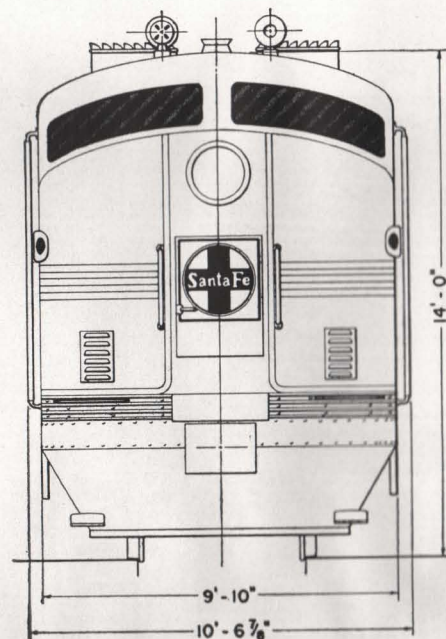
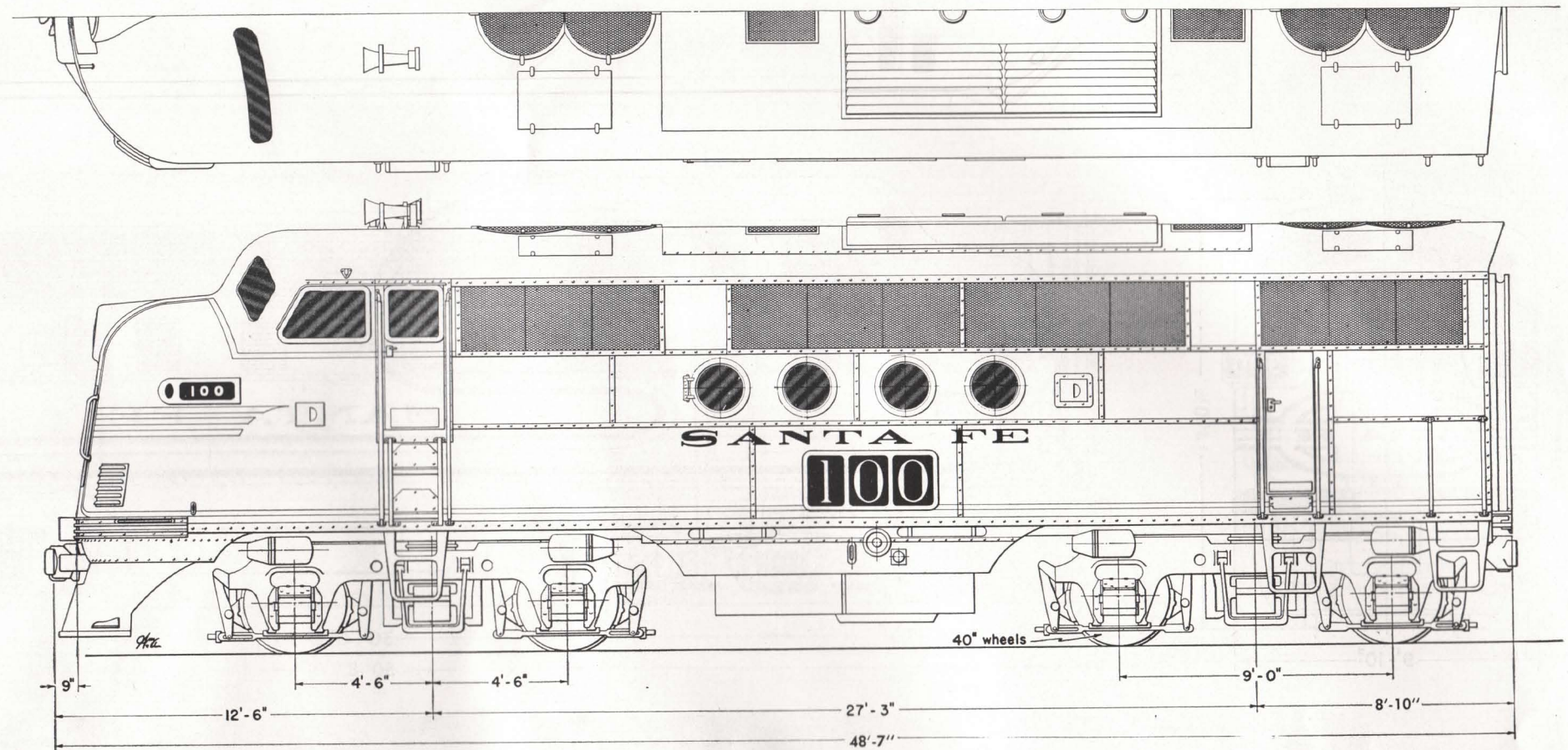
More and more model railroaders are putting diesel locomotives to work on their pikes, for the diesel's brilliant colors and apparently effortless operation make an attractive combination at the head end of a long string of modern corrugated-side coaches. An "A" and a "B" unit are shown here. The "A" unit contains the controls and has a streamlined nose. The "B" unit is a booster, added as train weight increased. It has no controls for road operation.





The roof of a diesel locomotive is one of its most interesting features. So when you build your model don't neglect to install the necessary exhaust stacks, cooling fan openings, service hatches, ventilation louvers, air horns, and other detail. The screened side panels over carburetor filters can be simulated with fine mesh copper carburetor filter screen available at automobile parts stores and repair garages. The round porthole-type windows are characteristic of freight diesels. Some model-builders make them and the headlight of brass grommets used to reinforce lacing holes in canvas. Such grommets are available in a wide variety of sizes and need only be inserted into a clearance hole drilled in the sides, then fastened in place with solder or cement. The thin riveted strips on the sides can be duplicated with paper or shim metal stock soldered or cemented in place.

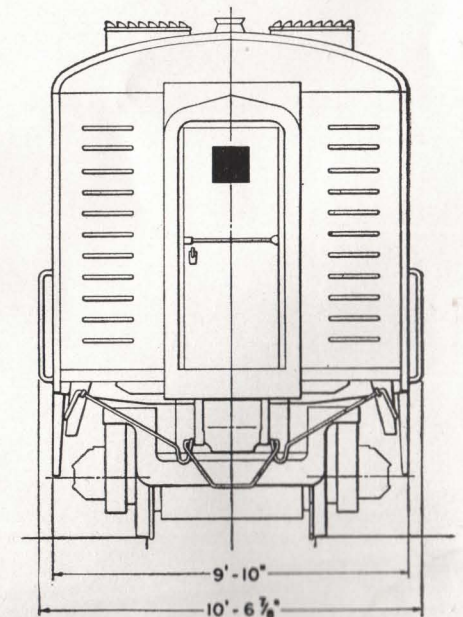
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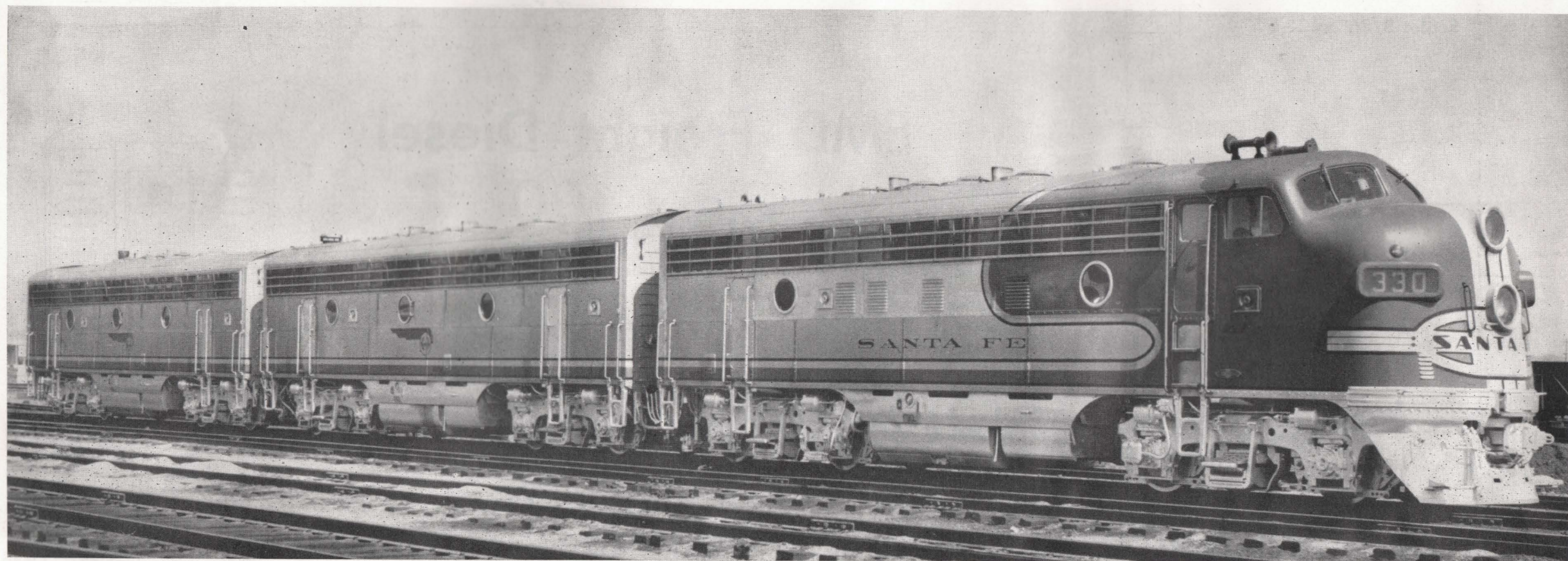
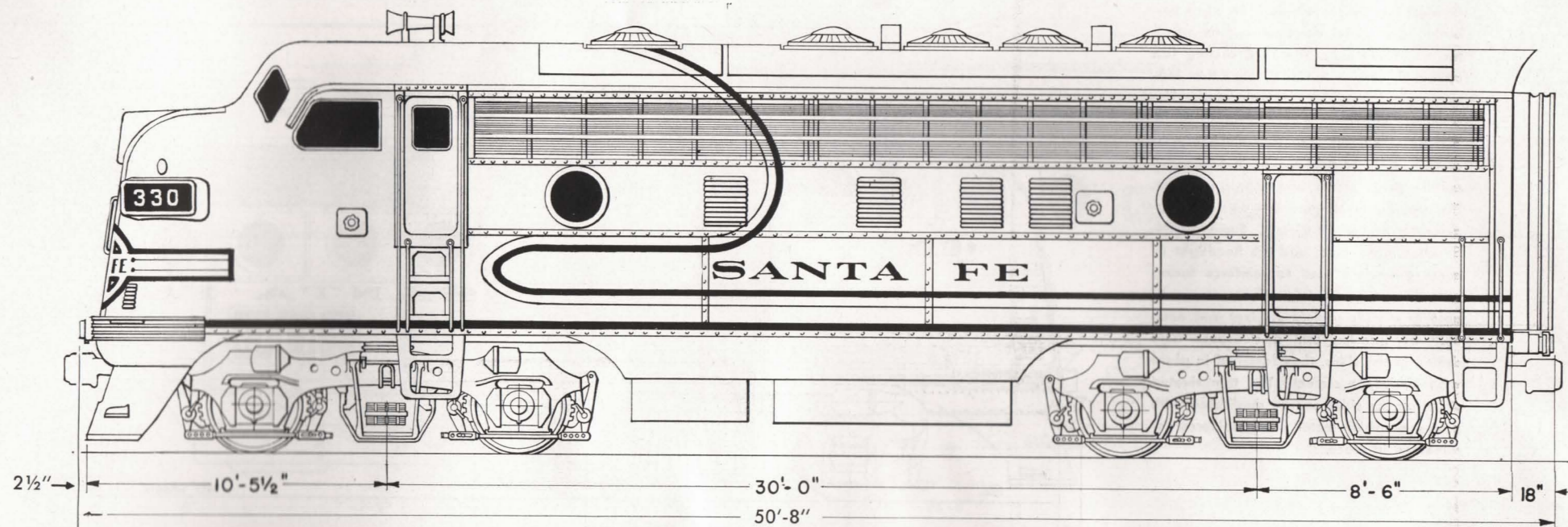
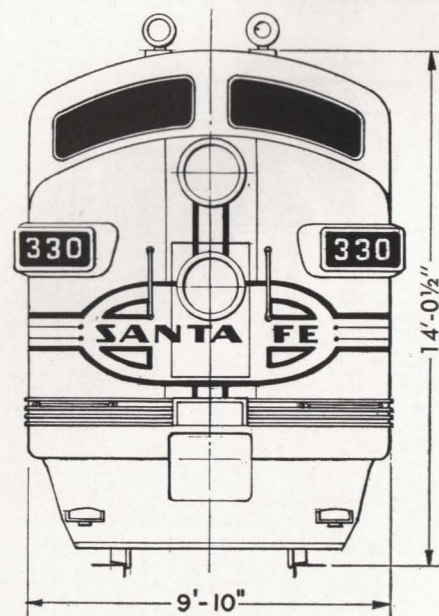


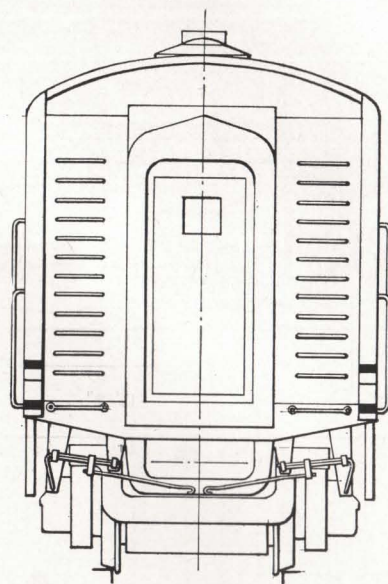
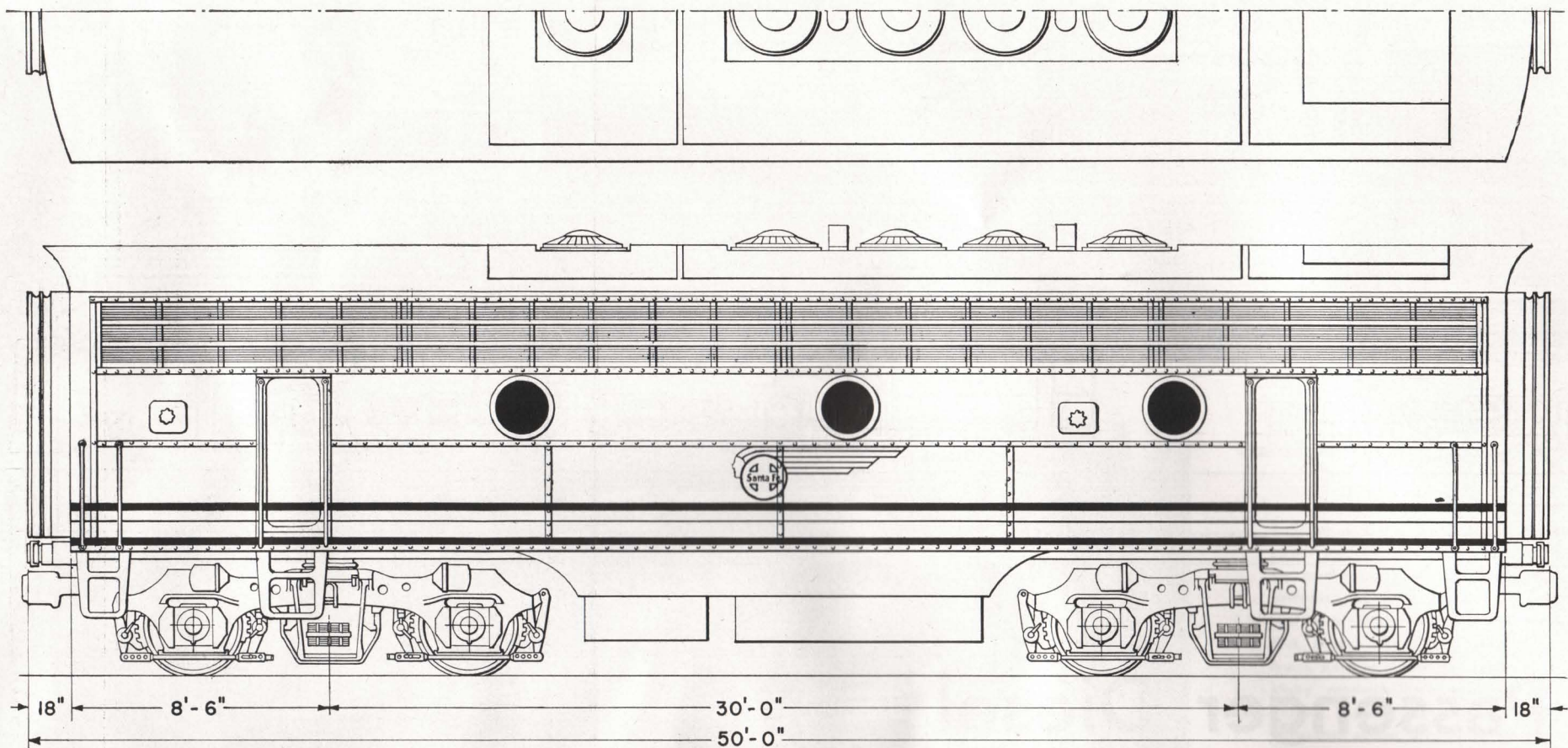
EMD Freight Diesel Class 100

Road Numbers 100-199
(When equipped for local train service are numbered 401-430)
(E. M. C.-built in 1940-45.)

Freight diesels like these haul mile-long trains at high speeds. Even though many model railroaders haven't the space for long trains, they often build a locomotive consisting of two "A's" and one "B" unit and run it ahead of shorter trains. Such a model multiple-unit diesel doesn't cost as much as might be expected, because only one unit, generally an "A," need be powered. The others are merely "trailers" but they make a train very impressive. Of course, one can later add another "B" unit, and put a power truck in the "A" trailer. Then one can make up either two "A-B" locomotives, or one "A-B-B-A" unit, such as No. 100 shown on the opposite page.







EMD Dual Service Diesel

Class 300

Road Numbers 300-314

Class 325

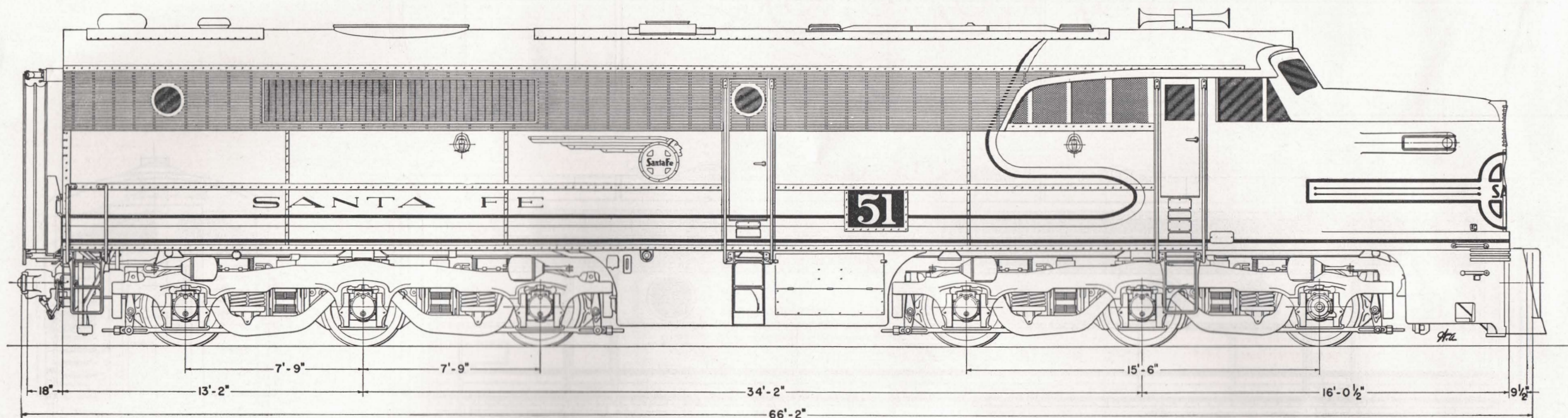
Road Numbers 325-344

(EMD Built 1949-53)

These Electro-Motive F-7 engines are used for either passenger or freight as the demand warrants. The 300 class, geared to 100 miles per hour, is used exclusively in fast passenger service. The 325 class is geared to 85 miles per hour for fast freight or passenger service. All are equipped with steam generators and dynamic brakes. Locomotives of the 300 and 325 class are generally operated in units of three, a cab unit and two booster units.

Scale: $3/16" = 1'-0"$





Alco Passenger Diesel Class 51

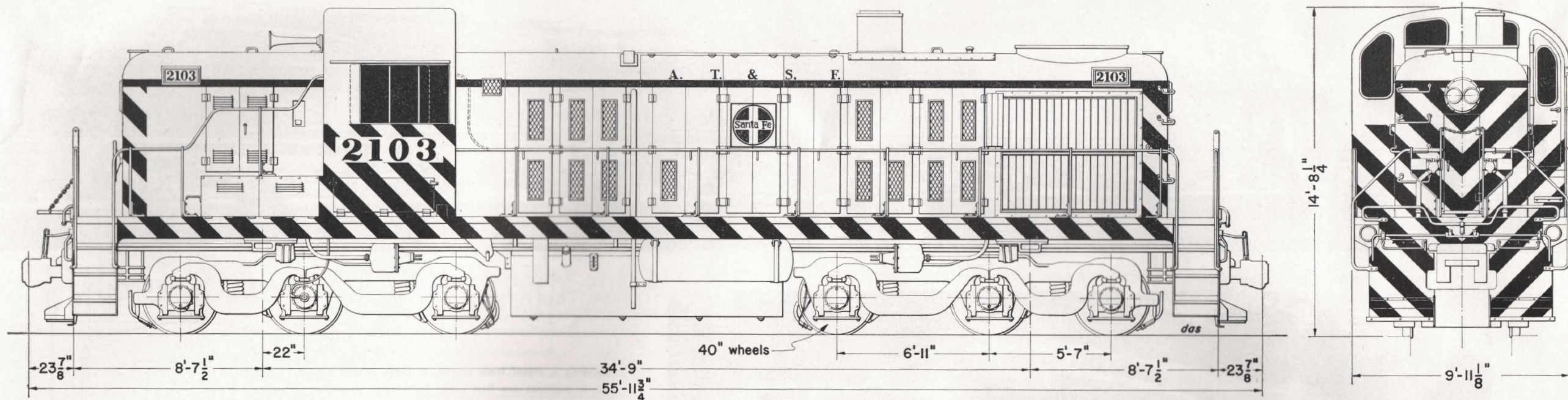
Road Numbers 51-78
(Alco-built in 1946-48.)



Scale: $3/16'' = 1'-0''$

Notice that the nose of this Alco locomotive is vertical, an advantage to the modelbuilder, for this type is easier to model in sheet metal than a slope front. This hood can be fashioned from thick brass or hard wood carved or filed to shape, then rabbeted so that it will nest down into the vertical section. Solder or wood filler can be used to fill in the seam or crack between the parts.





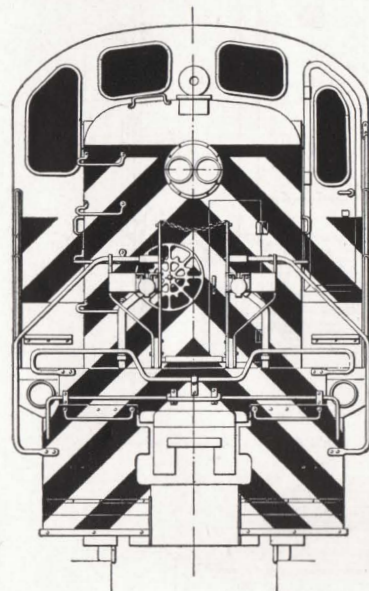
Diesel Road Switcher

Road Numbers 2100-2157

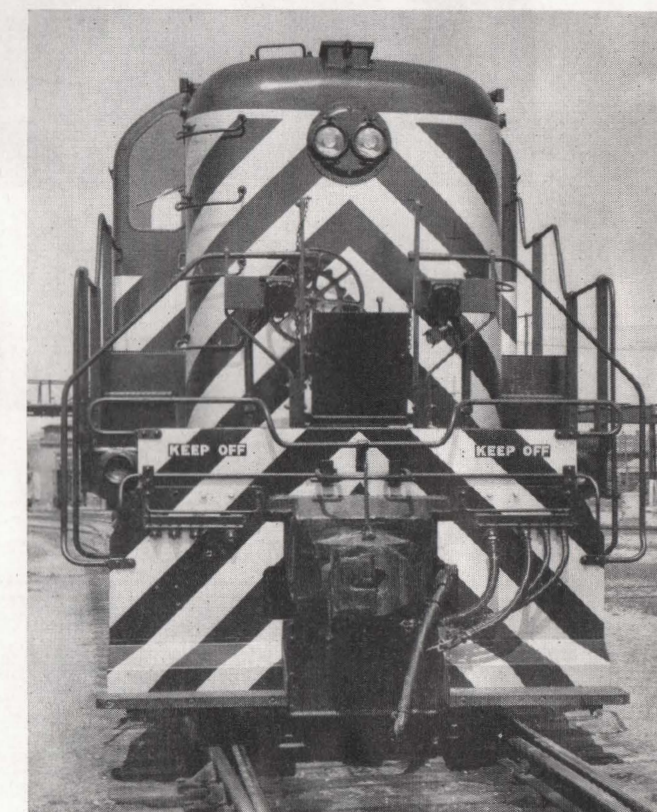
American Locomotive Company 1951-53

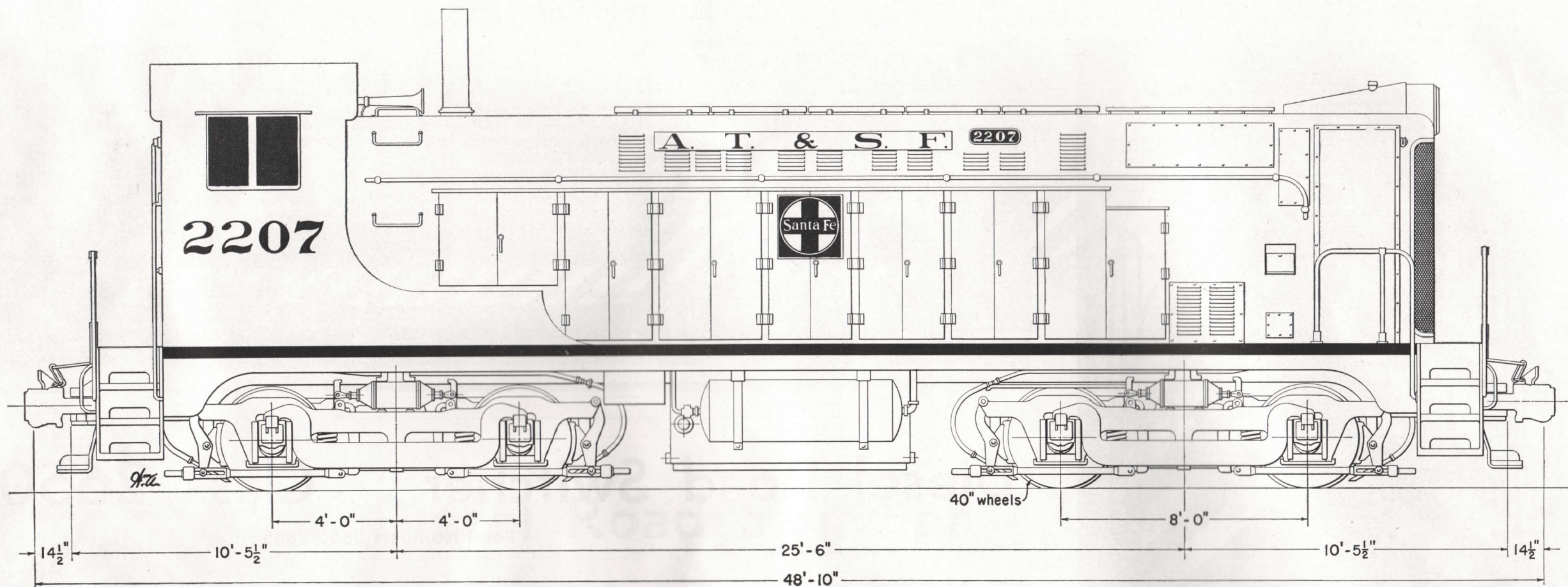
Class 2100

Scale: 3/16" = 1'-0"



These road switchers are used in way freight, branch line and helper service on various parts of the system.





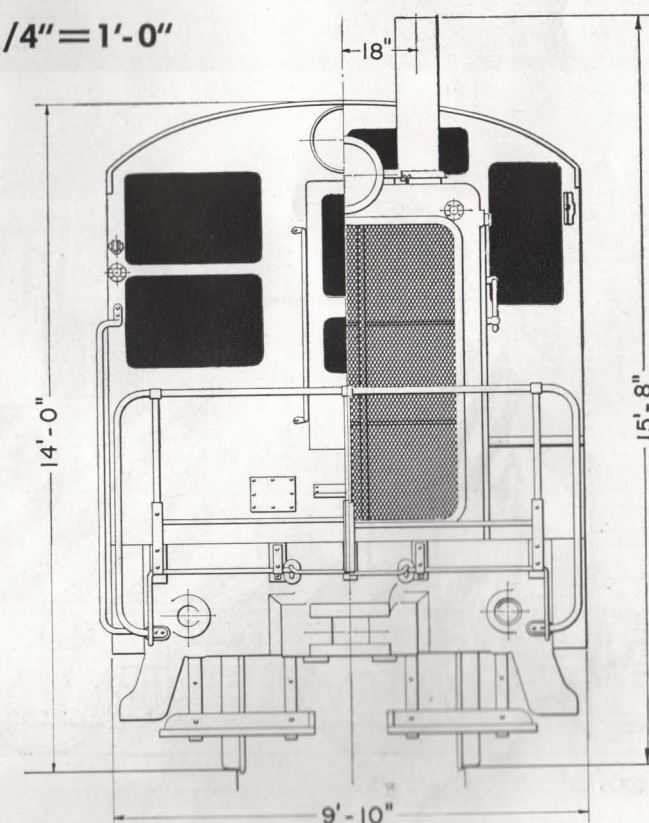
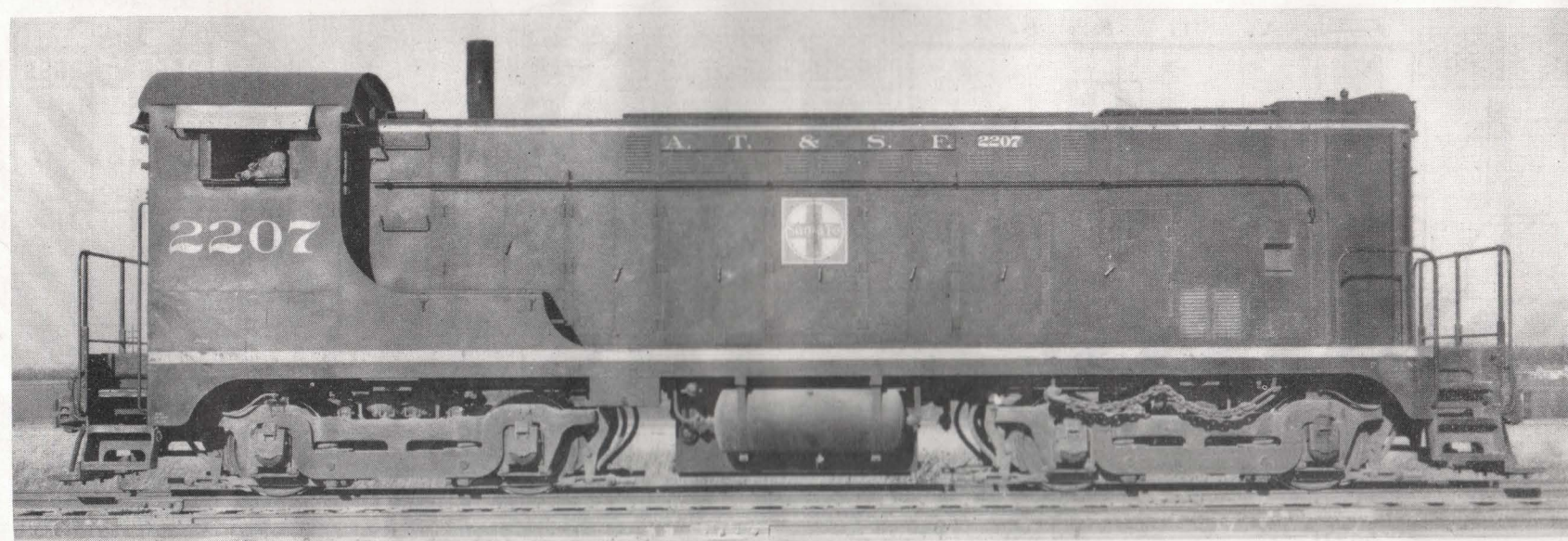
Diesel Switcher Class 2207

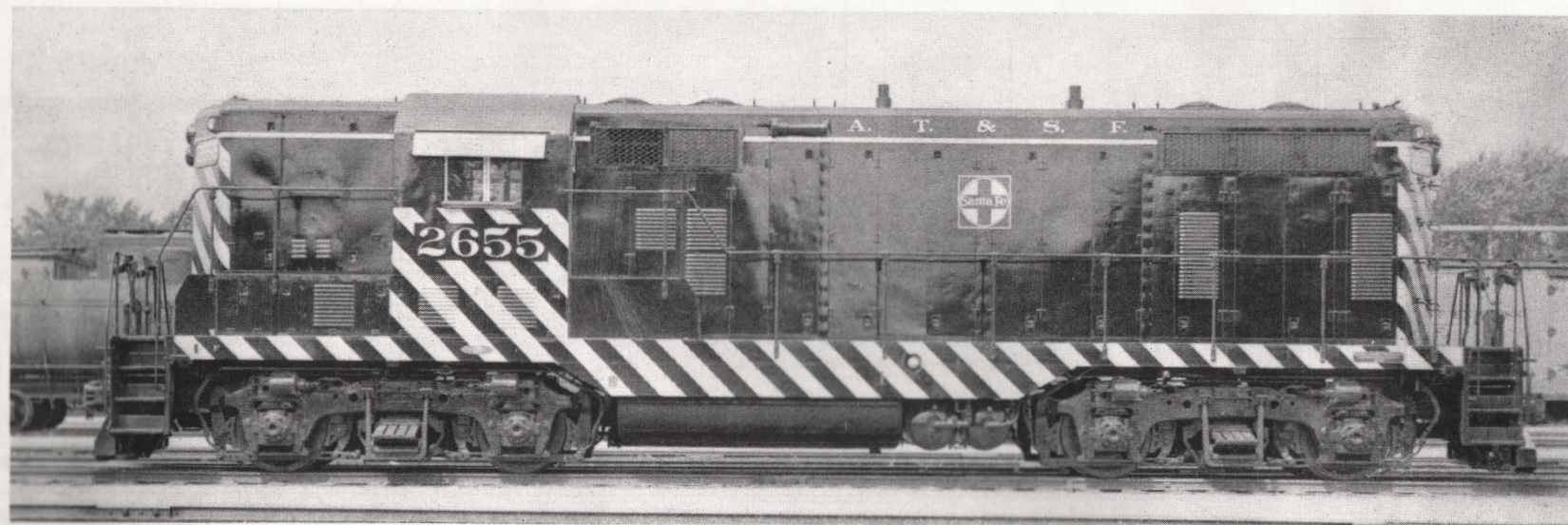
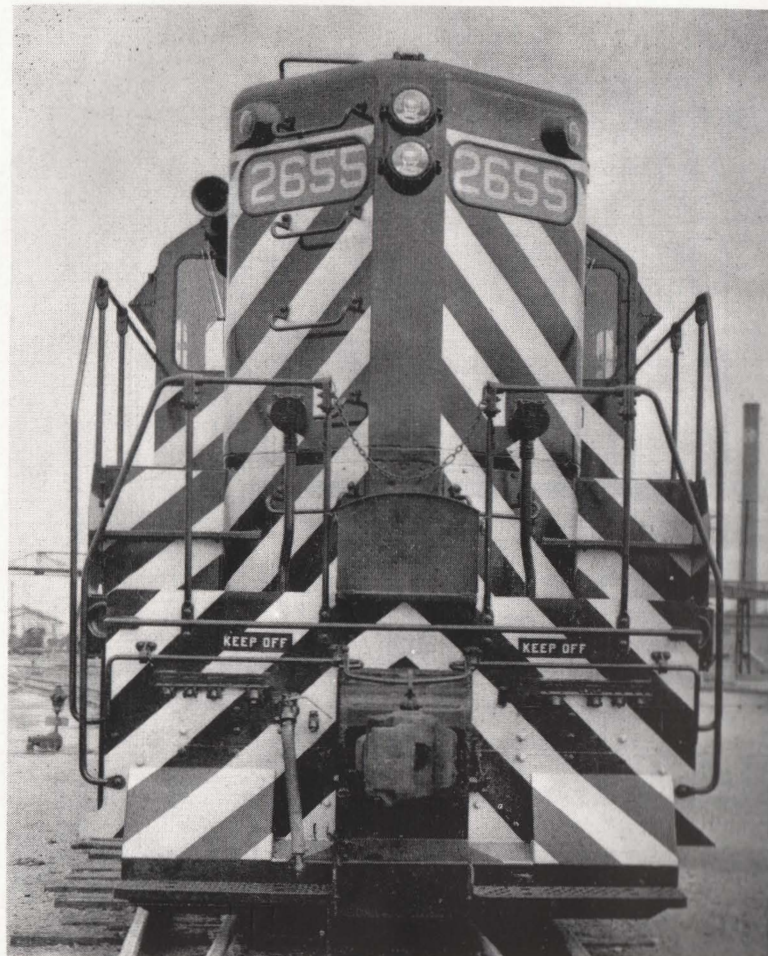
Road Numbers 2207-2259

(B. L. W.-built in 1942-45.)

This switcher's simplicity makes it an ideal first engine for the beginner. Its floor can be wood; the cab and hood, thin fiber board; trucks, commercial ready-to-run products, the tanks, wood dowel.

Scale: 1/4" = 1'-0"





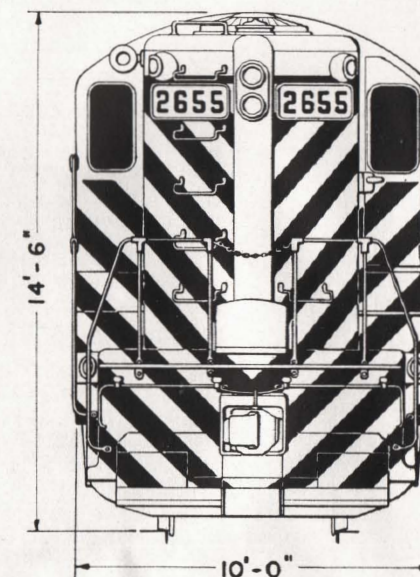
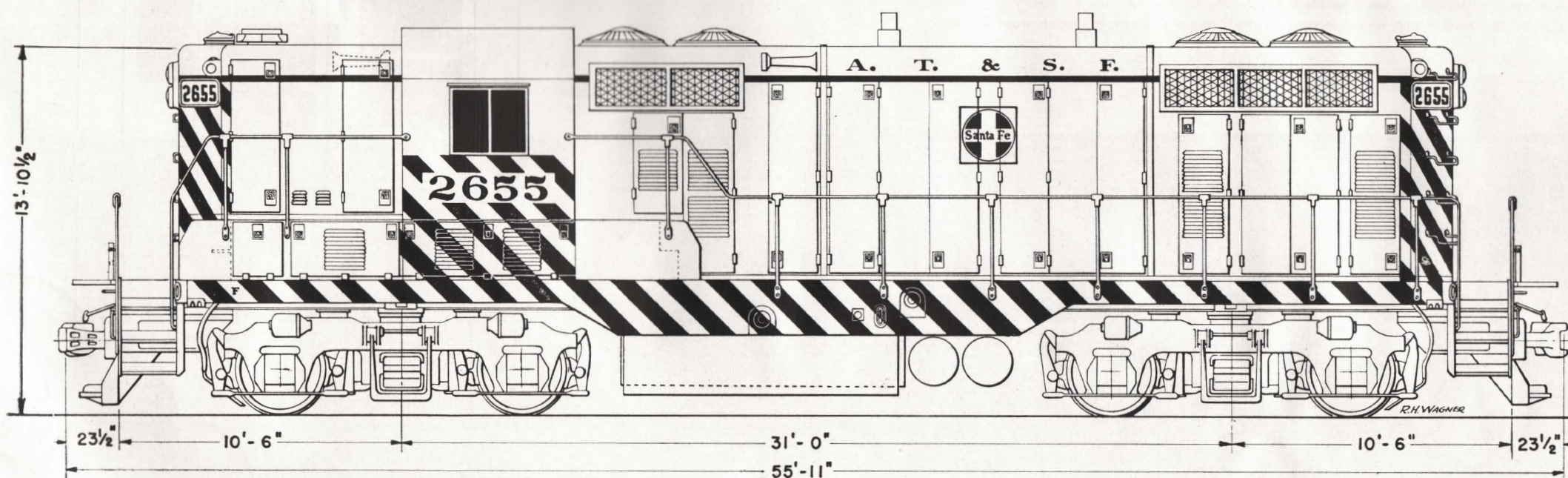
Diesel Road Switcher Class 2650

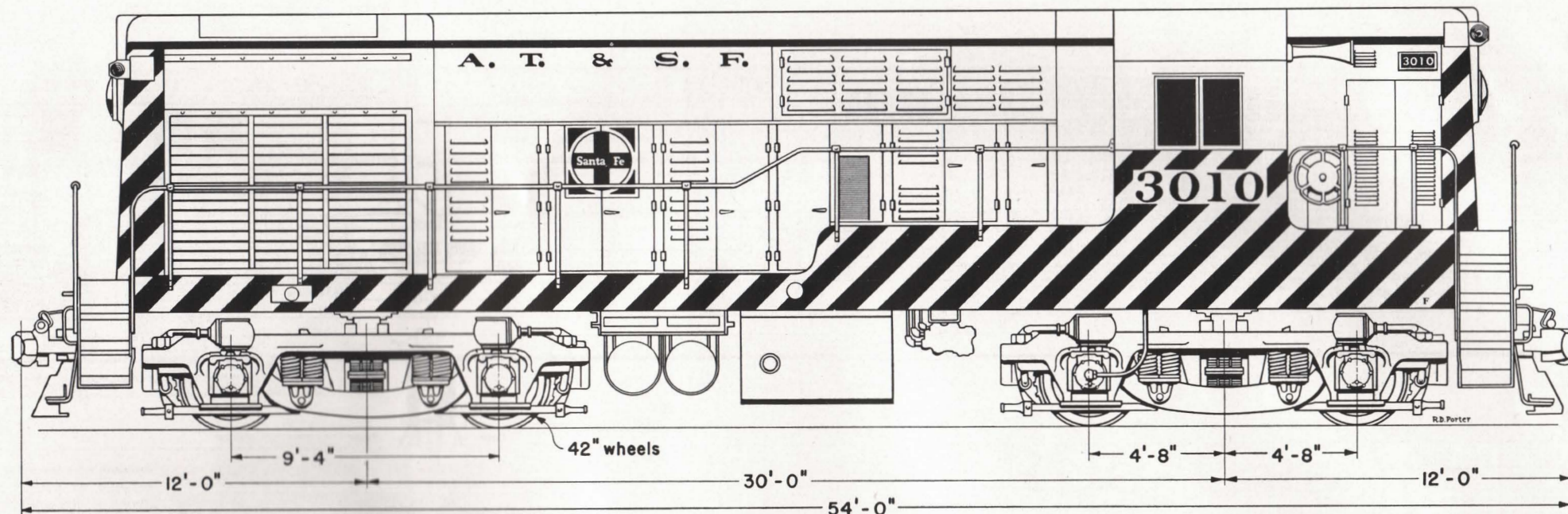
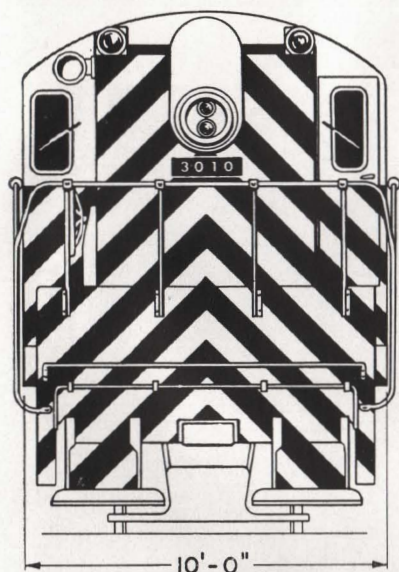
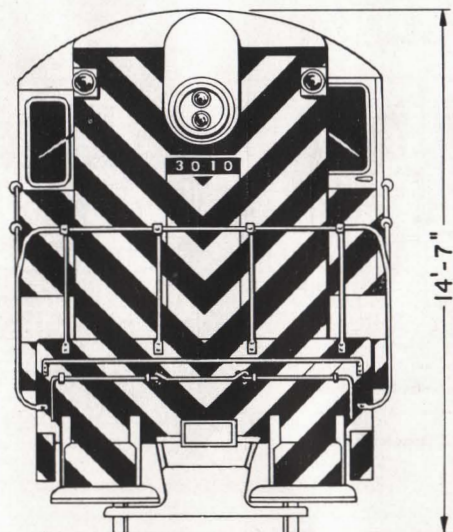
Road Numbers 2650-2848

(E. M. D. Built 1950-53)

Scale: 3/16" = 1'-0"

These General Motors GP-7 engines (more commonly known as "Geeps") are the mainstay of Santa Fe's diesel road switcher fleet. More are used than any other type of road switcher. A few are equipped with steam generators for use in local passenger service. Geeps are used principally on the Coast and Gulf lines in yard, local freight and through freight service.





Diesel Road Switcher

Class 3000

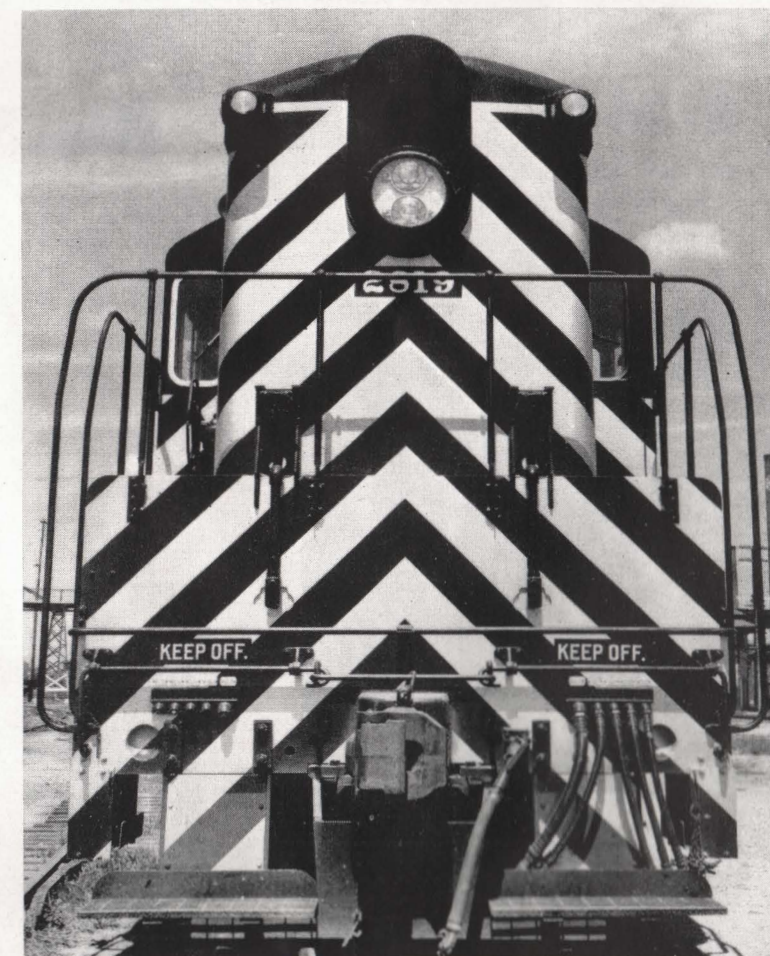
Road Numbers 3000-3019

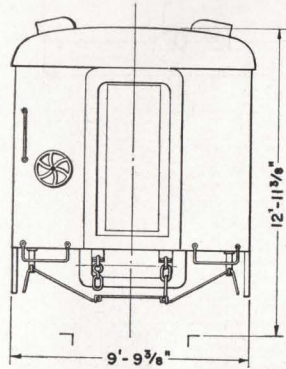
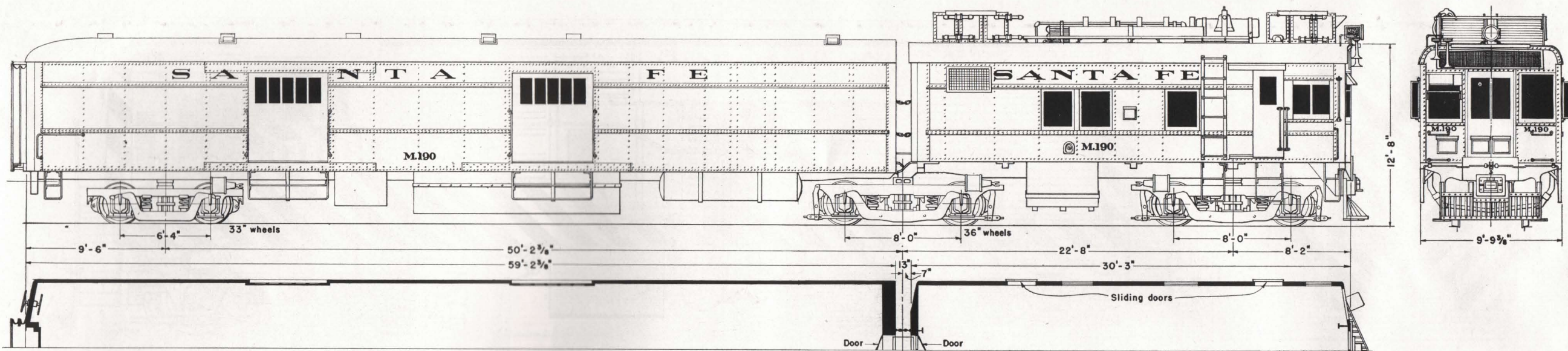
(F. M. & Co.-built in 1951-52.)

Scale: 3/16" = 1'-0"



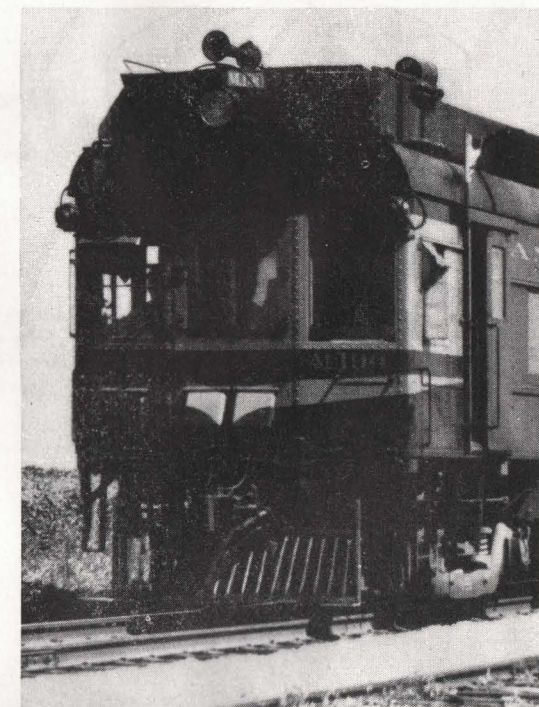
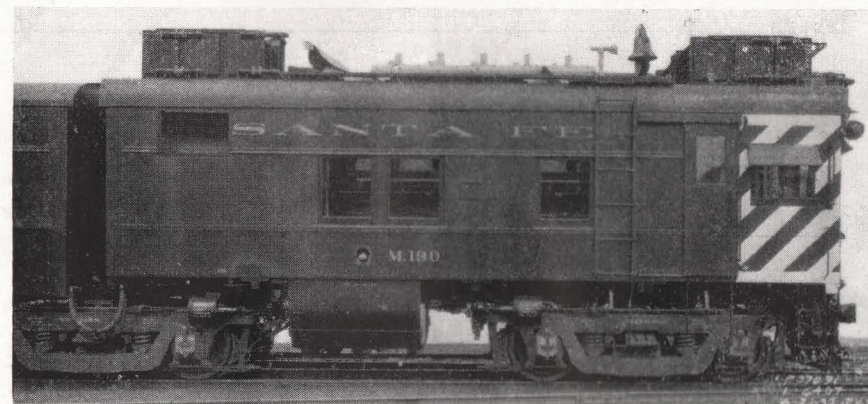
These engines have been re-numbered from the 2800 to the 3000 class. The photos were taken prior to renumbering.





Of all the motor cars operated by Santa Fe, the M-190 is the most unusual. M-190 is an articulated unit; its permanently coupled power and baggage cars ride on three trucks. Both car bodies pivot on the center truck. A good freight hauler, the M-190 is used in heavy branch-line passenger and freight service.

Scale: 1/8" = 1'-0"



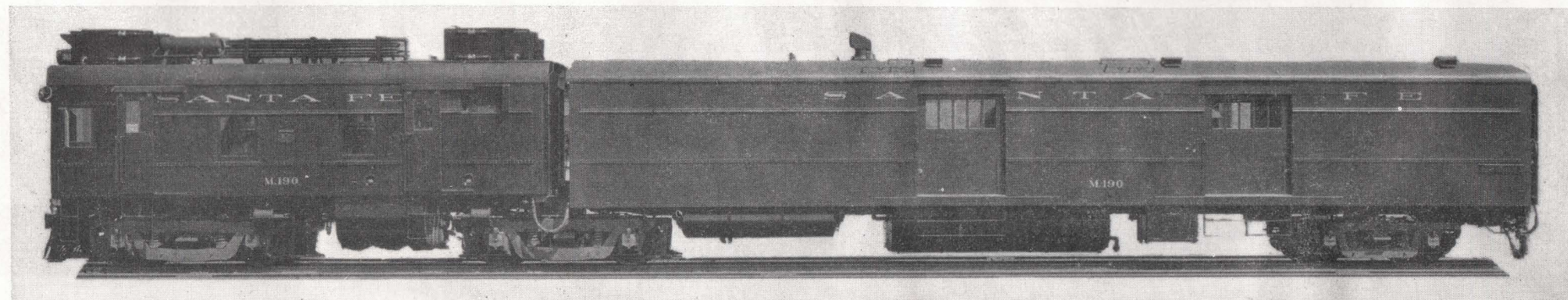
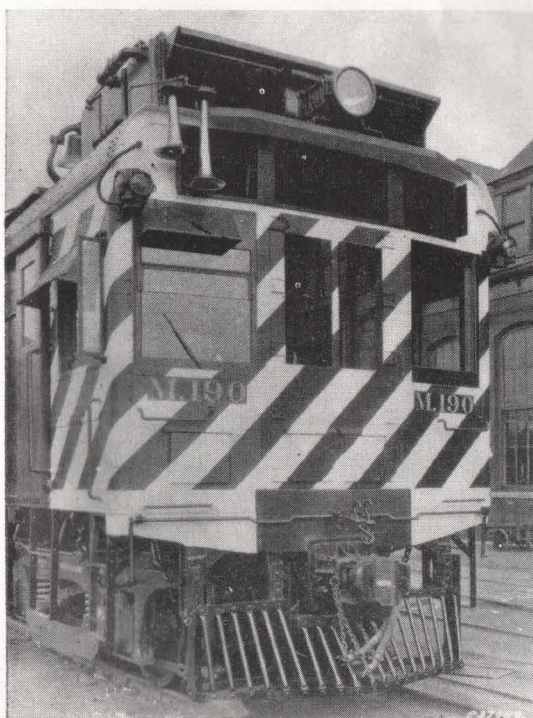
Articulated Motor Car

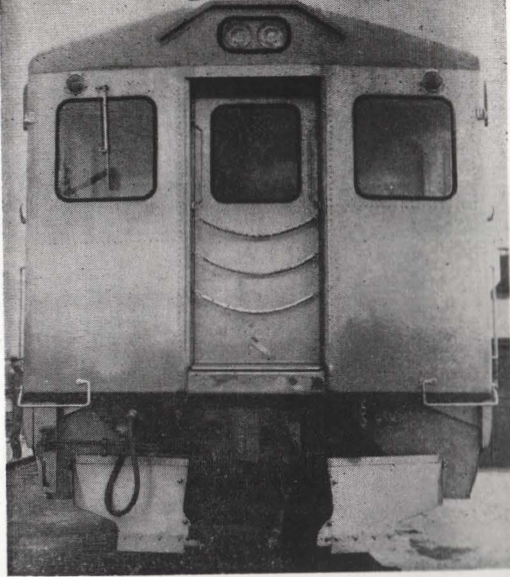
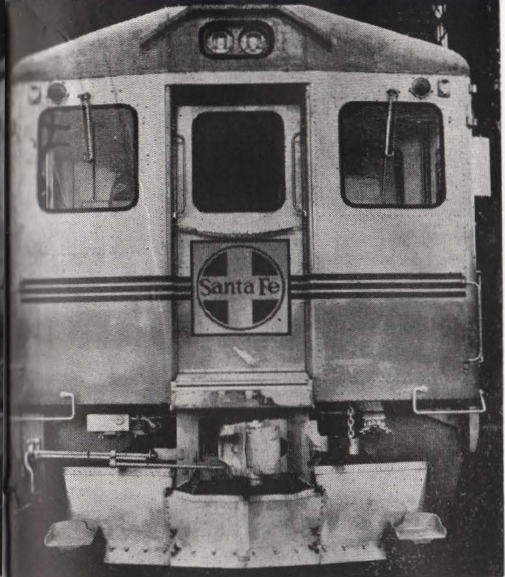
Class Motor Car

Road Number M-190

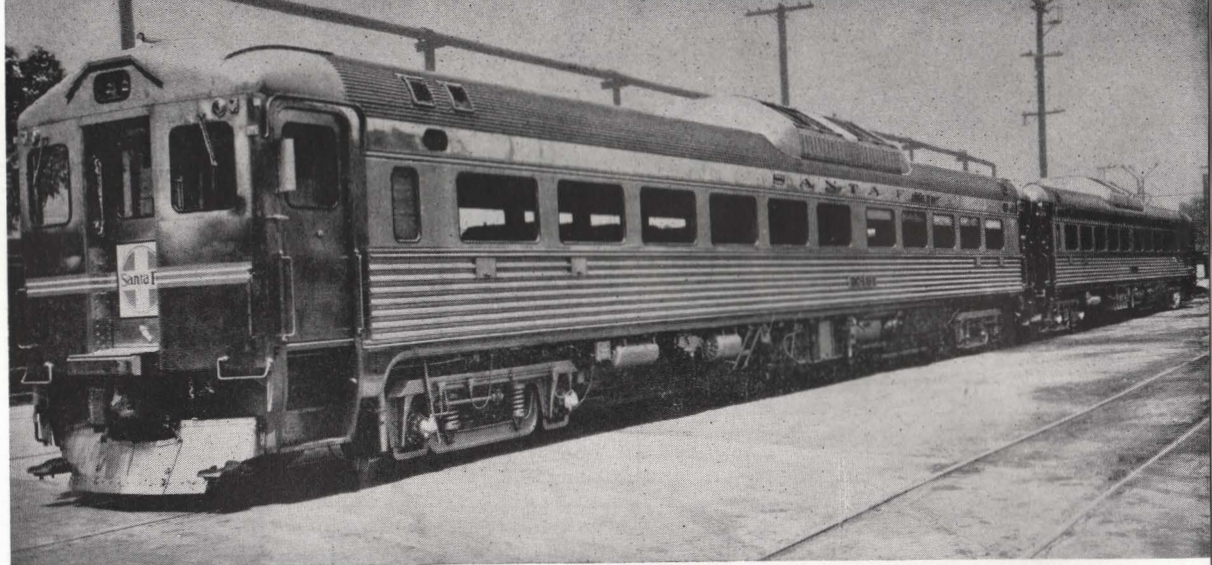
(P. S. M. Co. built in 1932)

Above is a revised front end paint scheme. Refer to the color chart for data. The black and white striping shown in the other photos is no longer used.

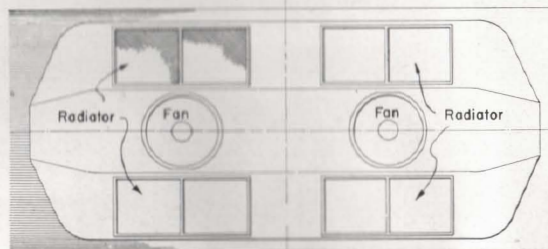




This two-car RDC train makes two daily round trips over the Surf Line between Los Angeles and San Diego.



Since these two motor coaches are never operated separately, the Santa Fe emblem and striping as well as a full-width stainless steel pilot are carried on but one end of each car as shown in the left-hand photo above. The opposite end is shown in the right-hand photo. Note the absence of lettering and the difference in the pilot. The "plain" ends of each car are always coupled together. This two-car unit never needs to be turned around. The engineer merely takes his throttle and brake handle to the cab at the other end of the train.

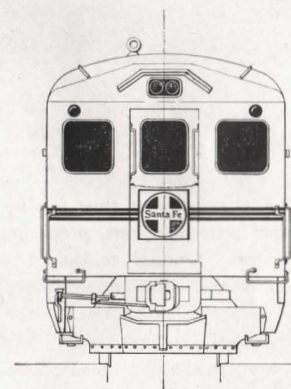
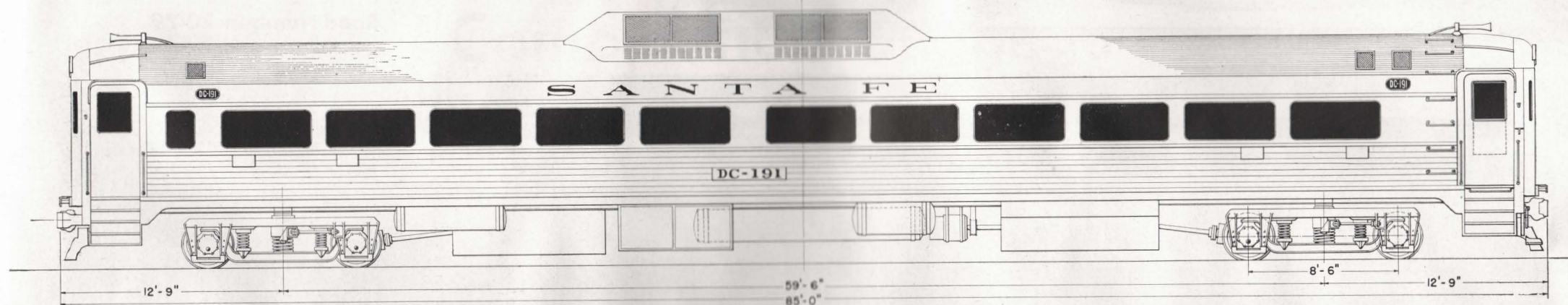


RDC Cars

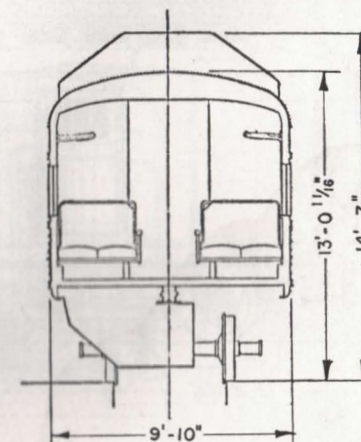
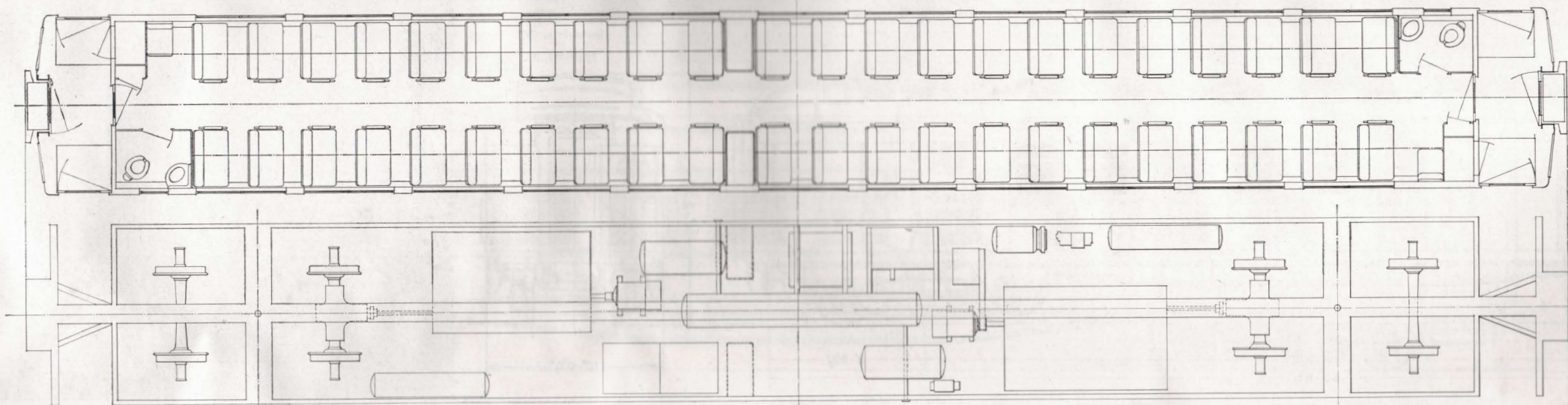
Class Coach

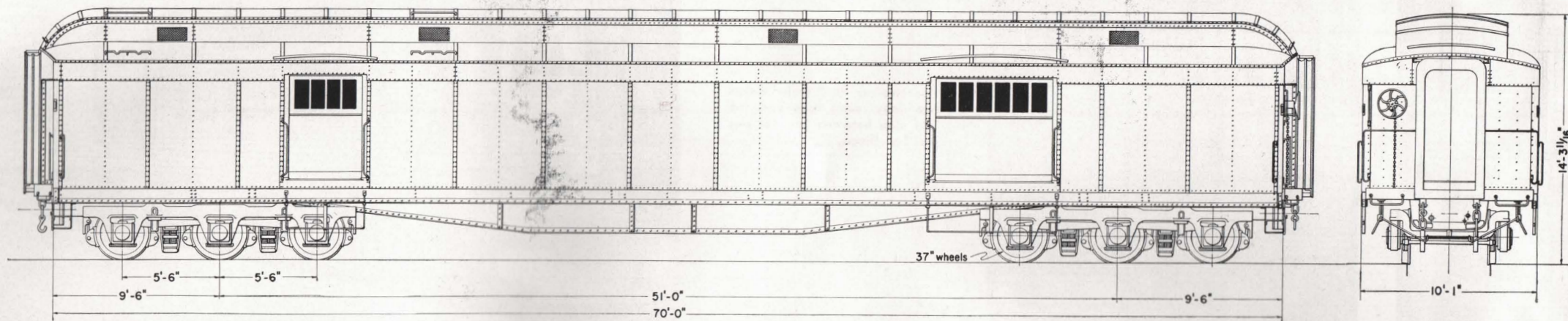
Road Numbers DC-191, DC-192

(Budd-built in 1952)



Scale: 1/8" = 1'-0"





Baggage Car

Road Numbers 1820-1829

(P. S. C. M. Co.-built in 1927.)

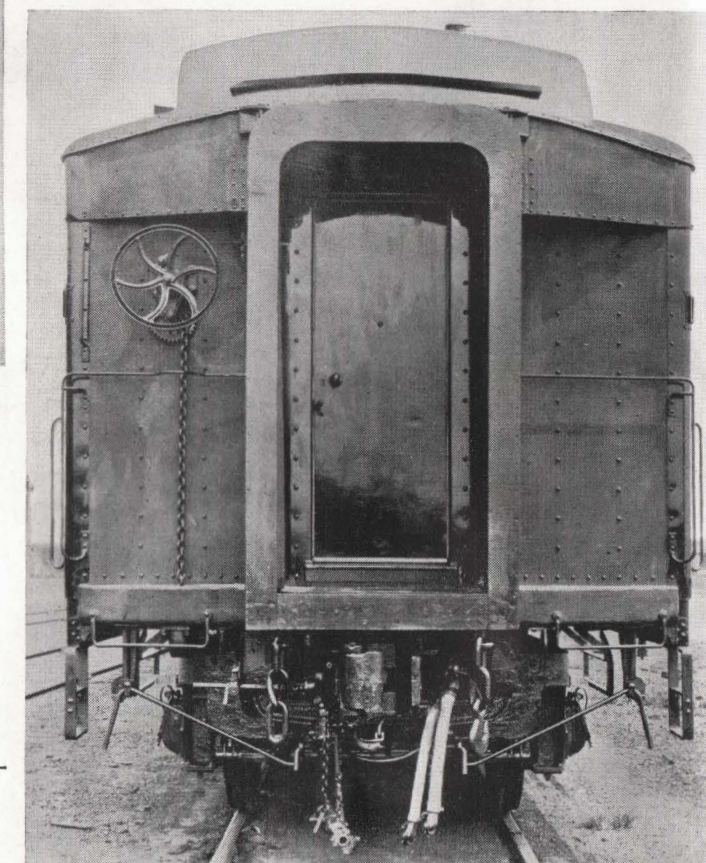
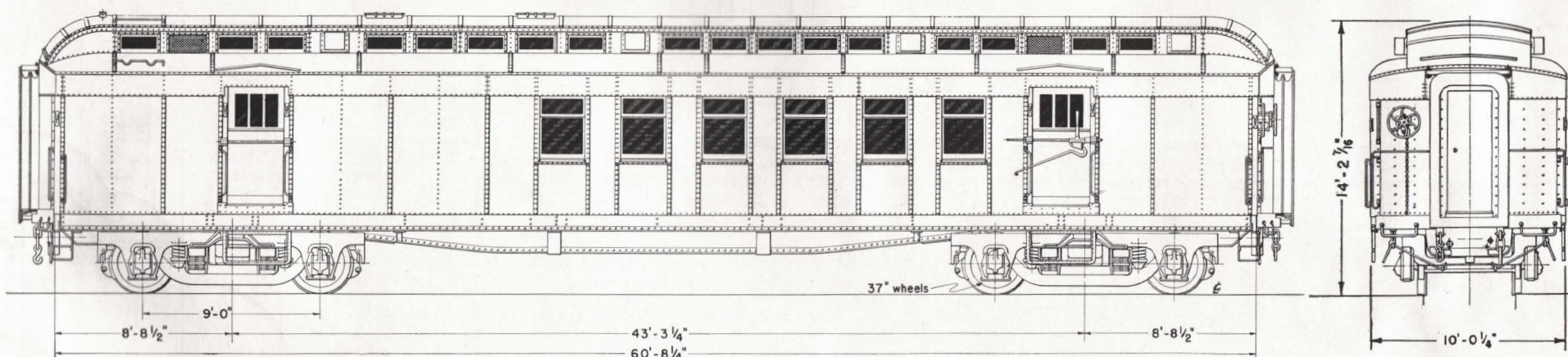
Postal Car

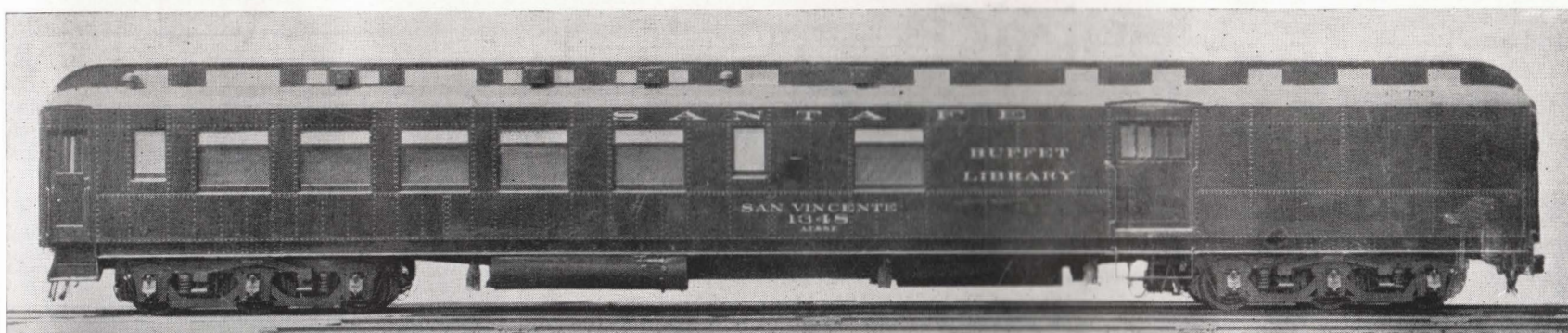
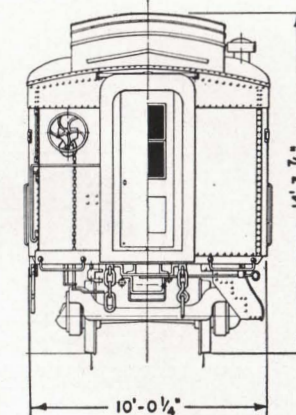
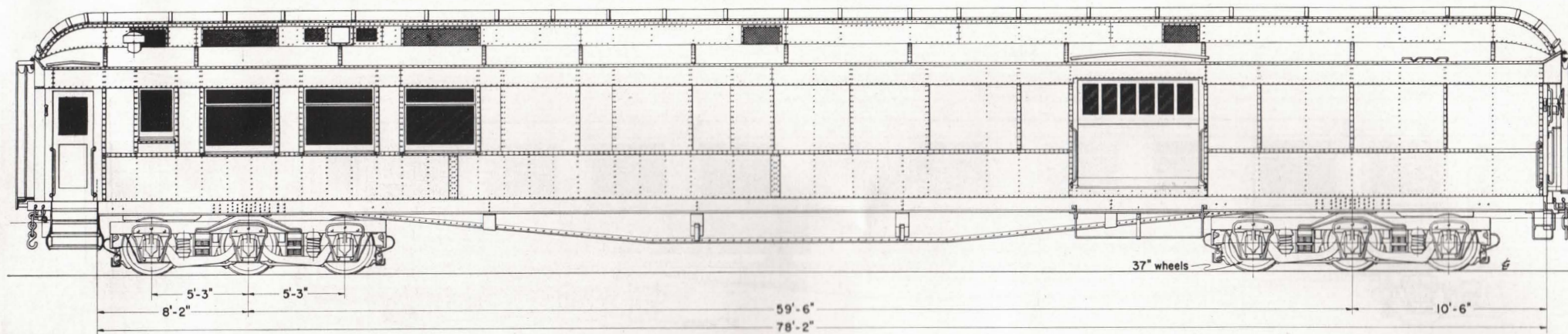
Road Numbers 70-79

(P. S. C. M. Co.-built in 1927.)

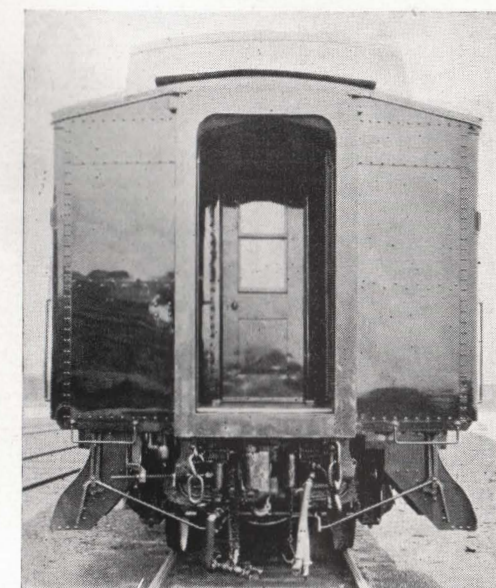
Scale: 1/8" = 1'-0"

Many model railroaders shun modern lightweight passenger cars, preferring instead older standard coaches, like these, with their riveted sheet-steel bodies and profusion of detail. Their clerestory roof sections, ends and trucks are available commercially. Bodies can be made of sheet metal, Bristol board stock, or wood. Paper strips embossed with rivets can be cemented to the sides.





The Santa Fe buffet-library car shown in the photograph was converted into the combination baggage-coach shown in the drawing by enlarging the baggage door and plating over the windows in the baggage section. The car is now frequently used at the rear end of mail trains. The passenger compartment, though small, is adequate for returning train crews and the few passengers who travel on mail trains.

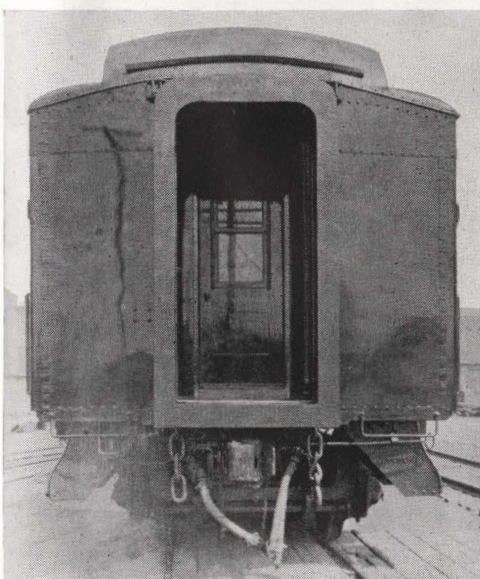


Combination Baggage Passenger Coach

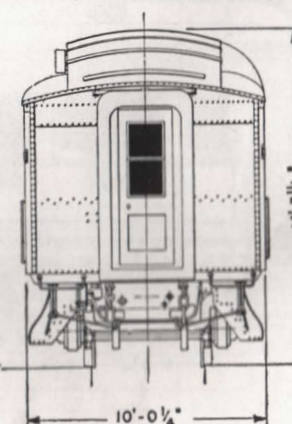
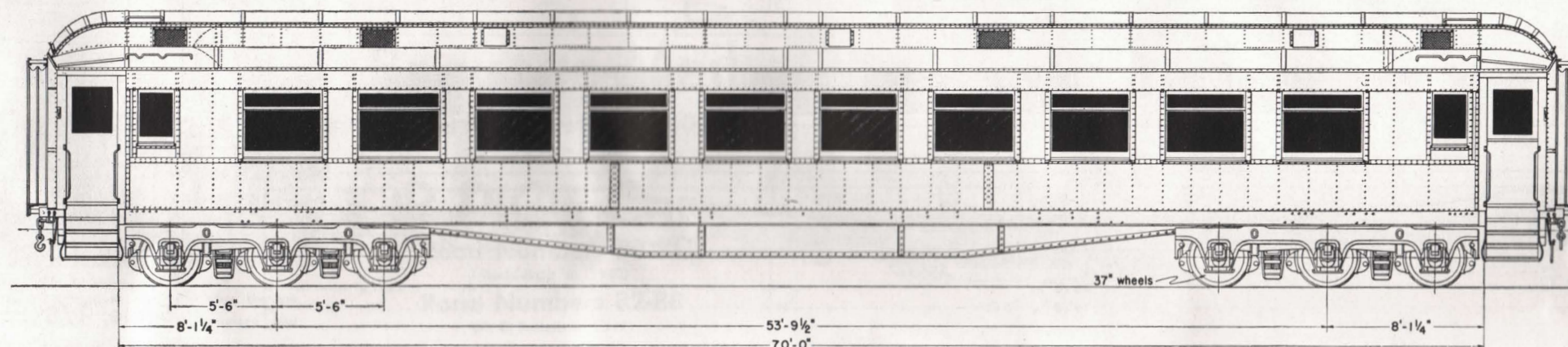
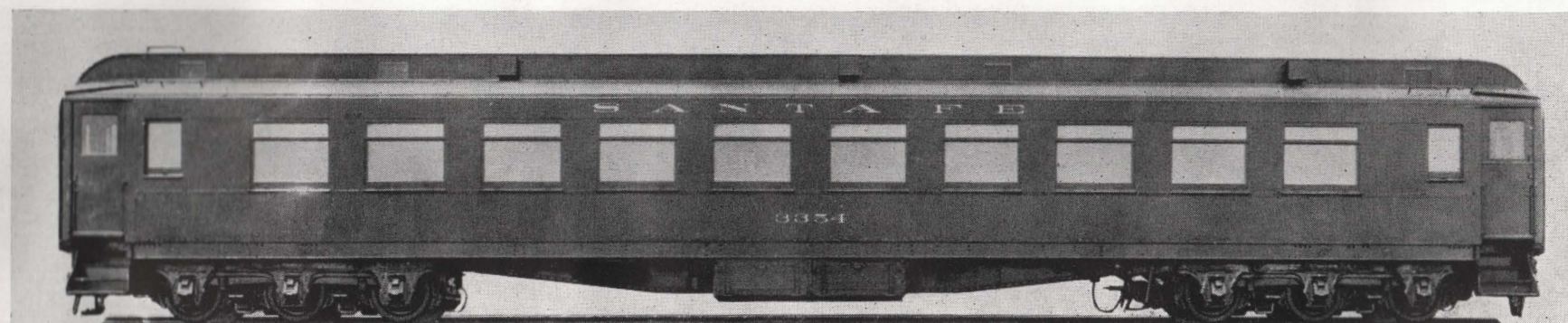
Road Numbers 2602-2607

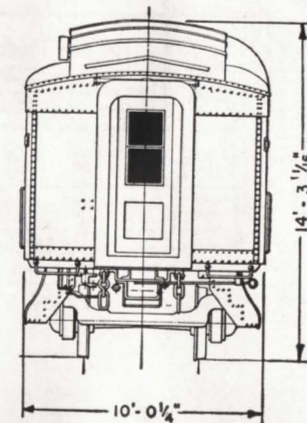
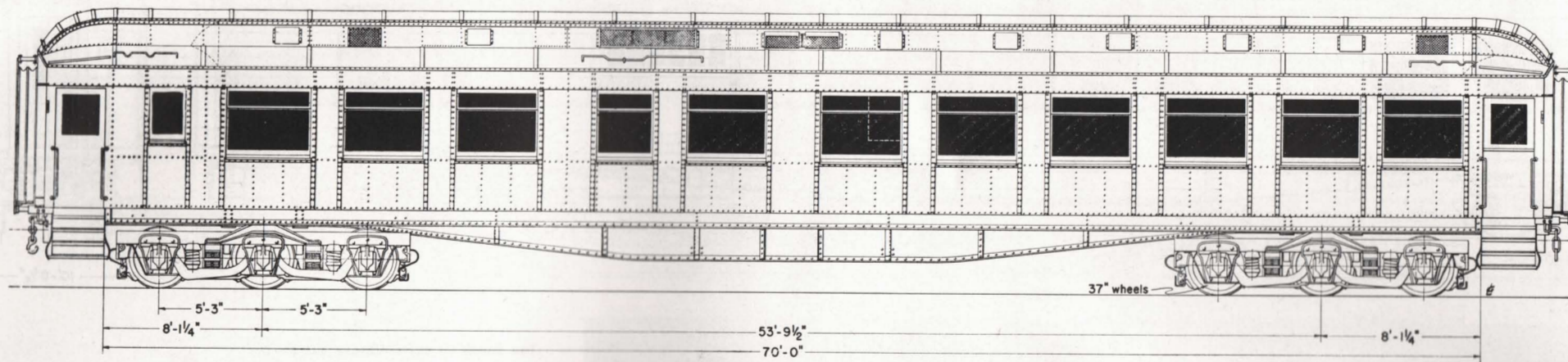
Road Numbers 3345-3362

Scale: 1/8" = 1'-0"



This coach has one air-conditioning duct on its monitor roof. Integral pedestal trucks are used but the standard Pullman type could be substituted. Commercial roofs, ends, and trucks are available for these coaches in all gauges. Sides can be cut from tin or brass thin enough to take rivet impressions well, or made of wood or Bristol board with a riveted paper overlay cemented in position.





Lounge Car

Road Numbers 1358-1359

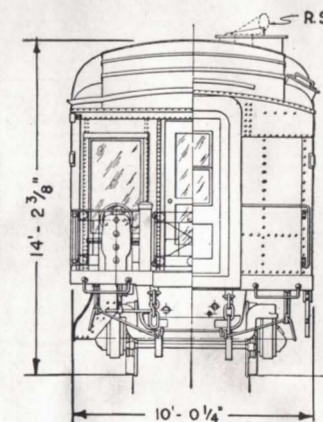
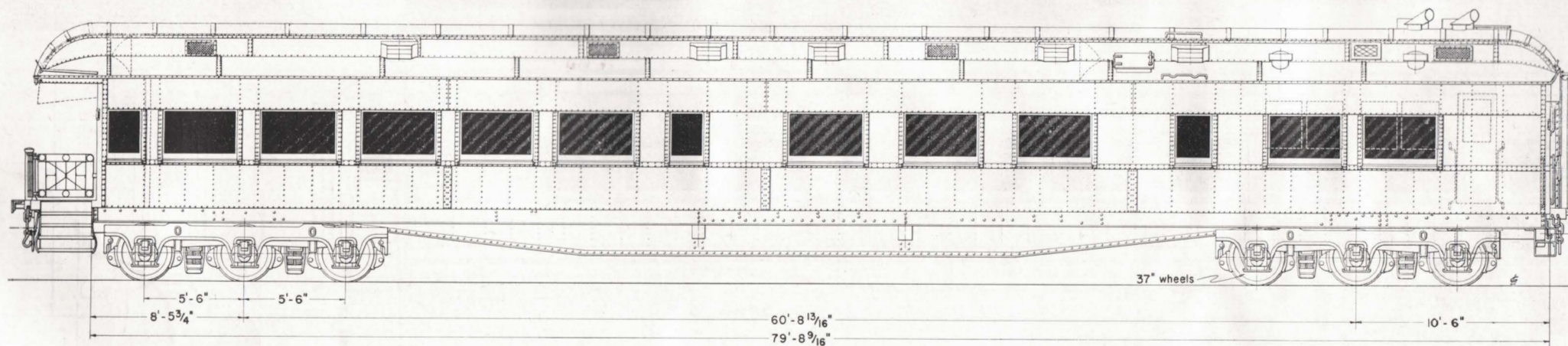
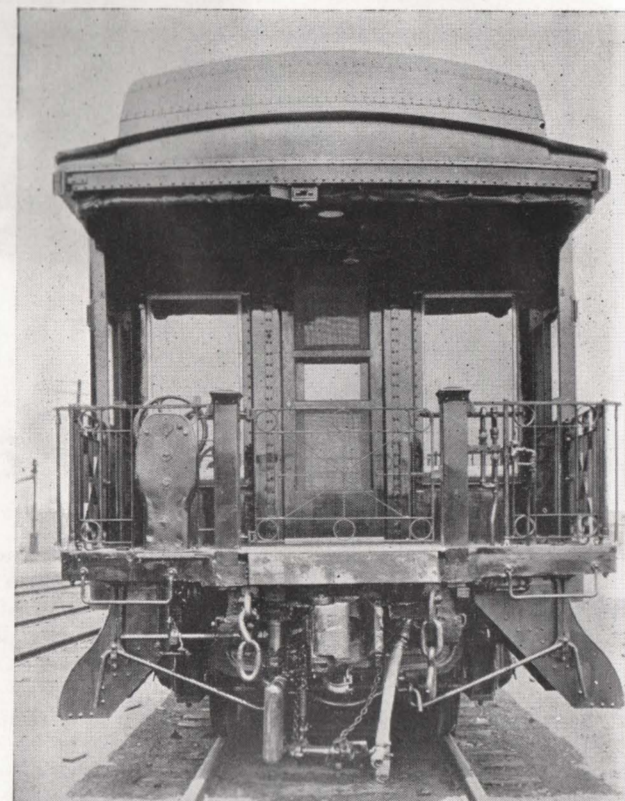
(Formerly coach-club car series 1500.) (P. S. C. M. Co.-built in 1914.)

A lounge car and observation car are standard equipment on any through train. Neither car possesses knotty construction problems unless one elects to make the observation car platform instead of buying a cast one. Some modelers scribe the railing design on sheet plastic and then fill in the scribed lines with gold ink.

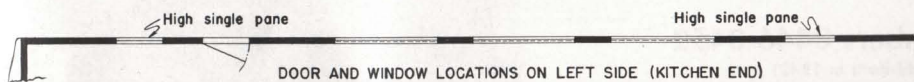
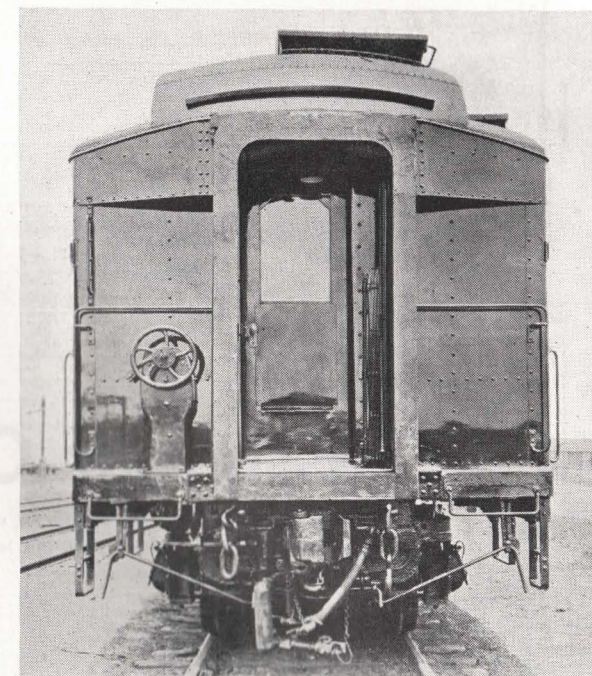
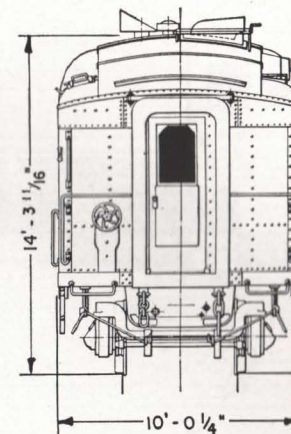
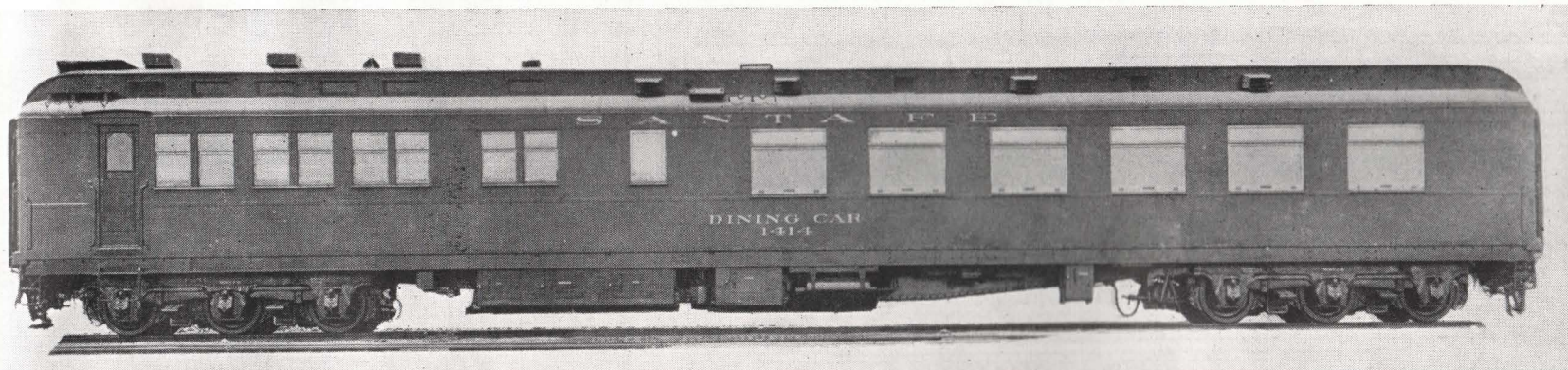
Observation Car

Road Numbers 1513-1514

(P. S. C. M. Co.-built in 1930.)



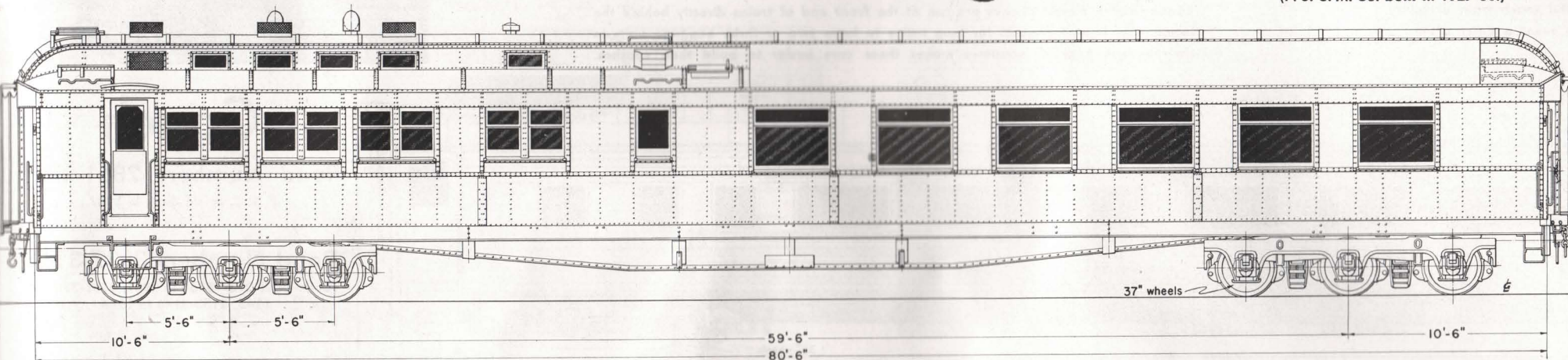
Scale: 1/8" = 1'-0"



Dining Car

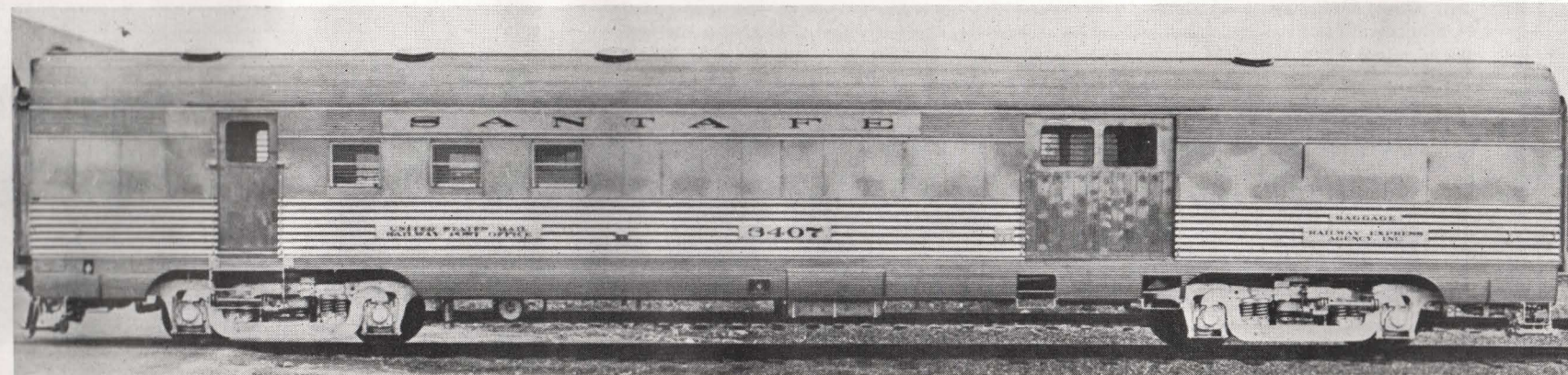
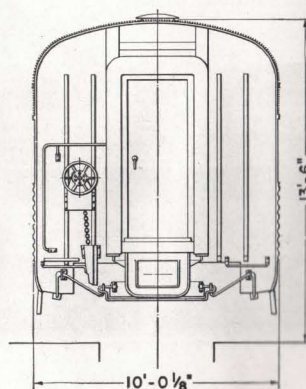
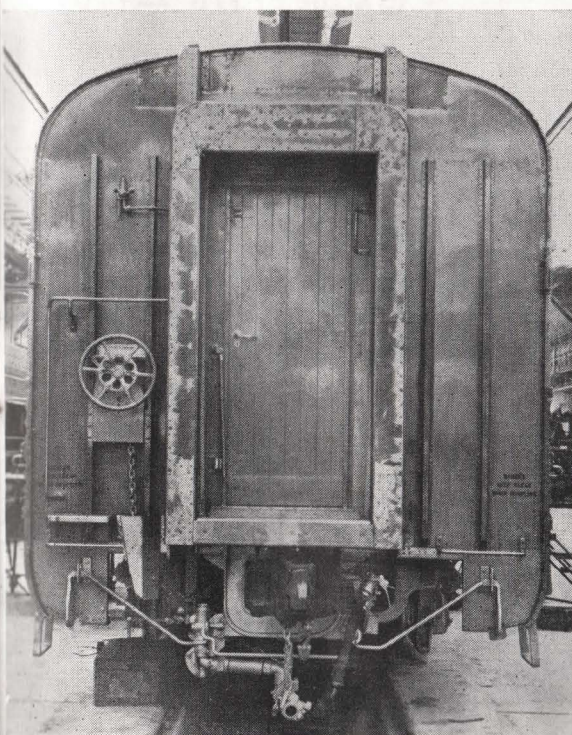
Road Numbers 1400-1418

(P. S. C. M. Co.-built in 1927-30.)



Any observant model railroader can spot a diner among a hundred other cars from its roof alone. Notice the roof vents, and smoke jacks on the kitchen end of this dining car. Don't forget to install these distinctive roof appurtenances on your Santa Fe diner.

All drawings on this page to scale of 1/8" = 1'-0"



Baggage-Mail

Road Numbers 3404-3408

(Budd-built in 1945.)

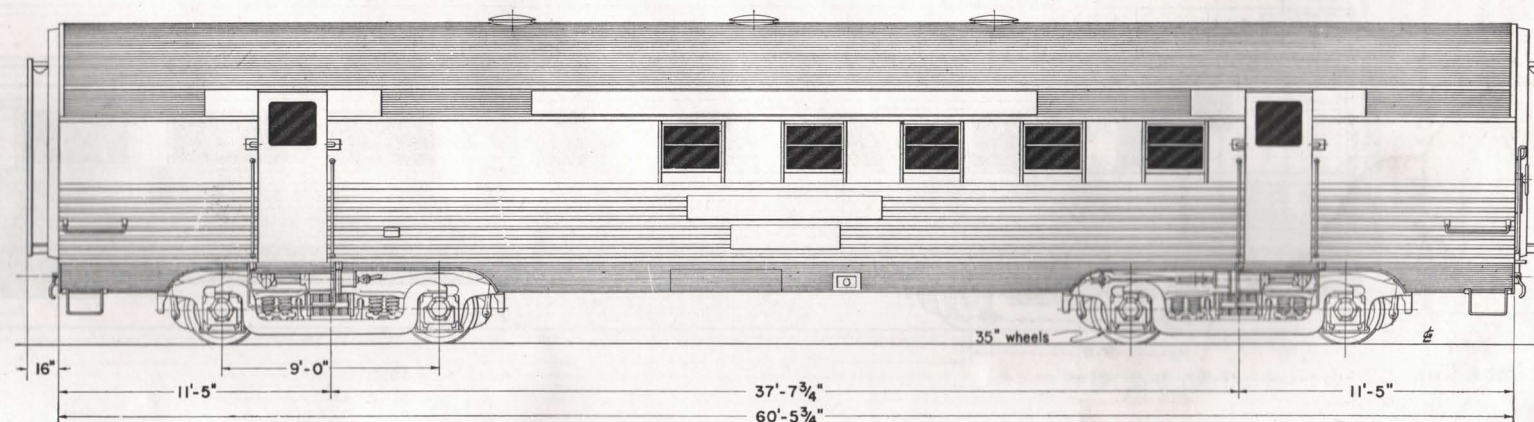
R.P.O. Car

Road Numbers 80-81

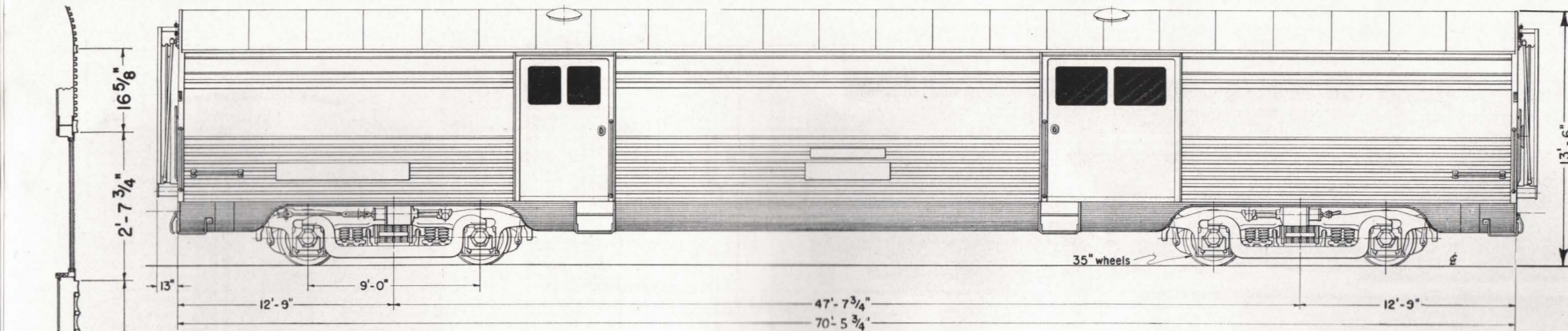
(Budd-Built in 1940)

Road Numbers 82-88

(A. C. F.-Built in 1947)



Don't forget car-end equipment. On real cars the air hose and steam line are as essential as couplers, and they should be installed on any good model.



Passenger Coach

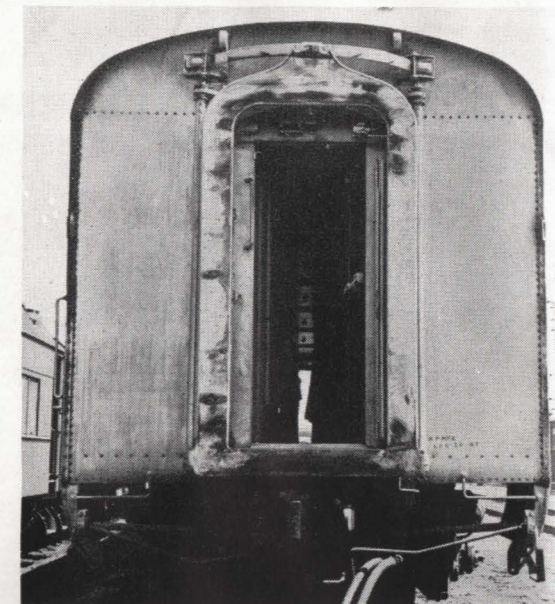
Streamlined coaches can be run as a solid coach train or in combination with Pullmans. In the latter event a diner often separates the two types.

Baggage Car

Road Numbers 3446-3452

(Budd-built in 1942)

Baggage cars almost always are run at the front end of trains directly behind the locomotive. It isn't unusual for long trains to have two or three baggage units in their consist. Lack of windows makes these cars easier to build than coaches.



Coach

Road Numbers 2861-2911

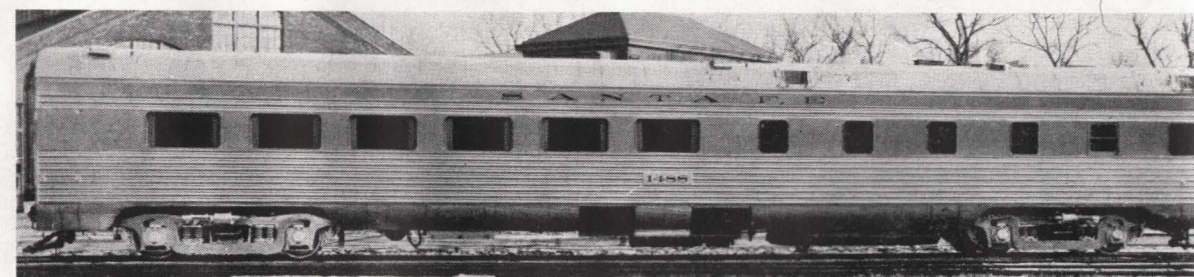
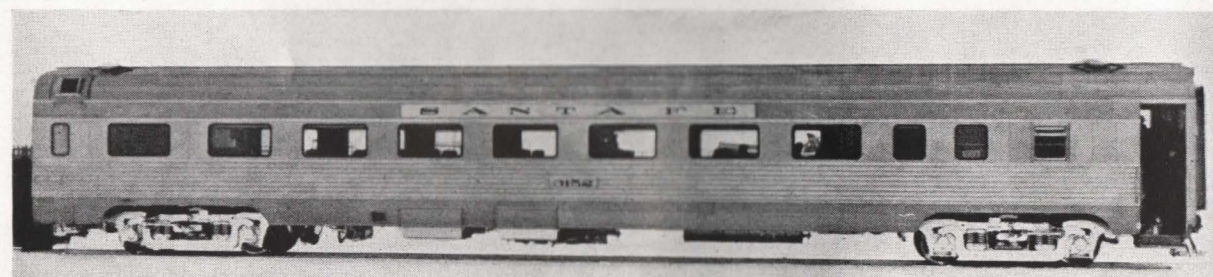
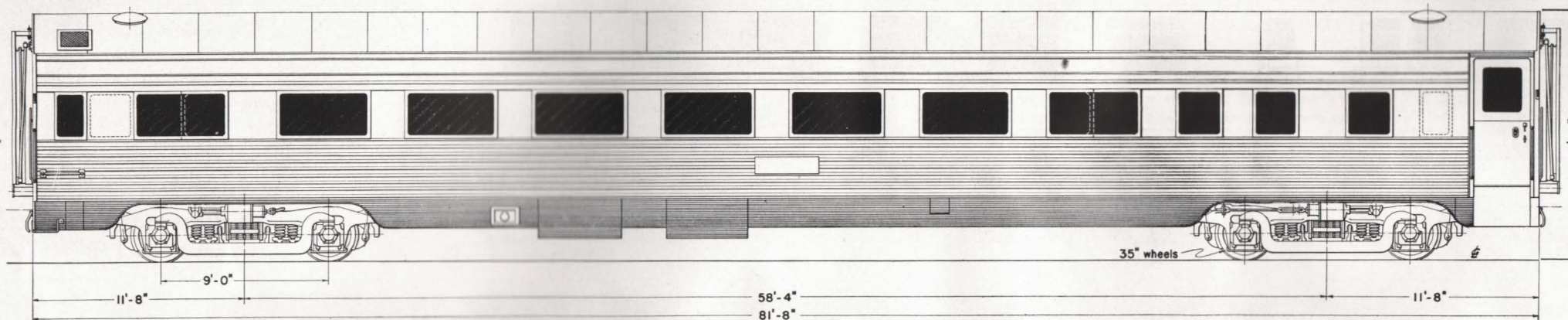
(P. S. C. M. Co.-built in 1947.)

Road Numbers 3137-3166

(Budd-built 3137-3150 in 1941, 3151-3152 in 1945, 3153-3166 in 1946.)

Car drawings on this page to scale of 1/8" = 1'-0"

Section Budd Car



Dining Car

Road Number 1488

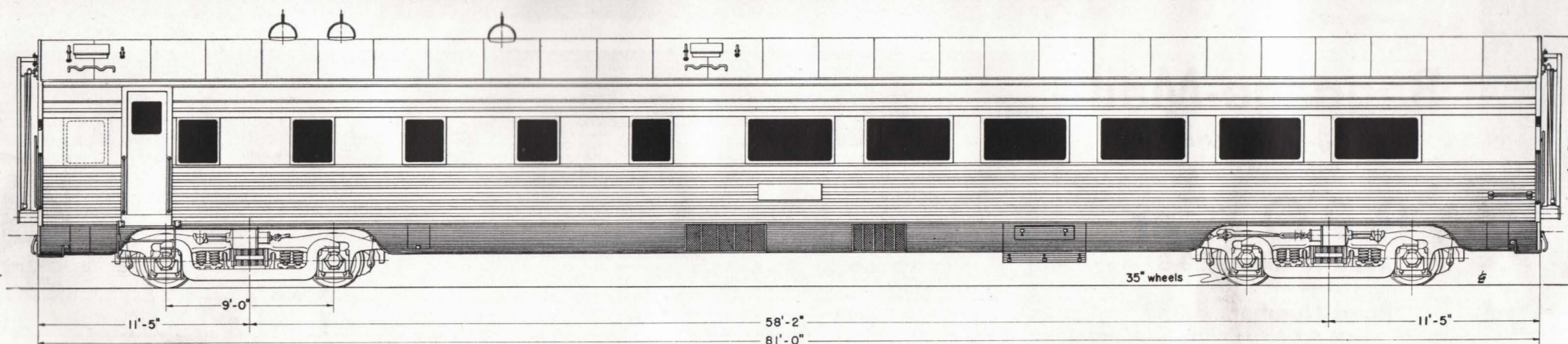
(P. S. C. M. Co.-built in 1940.)

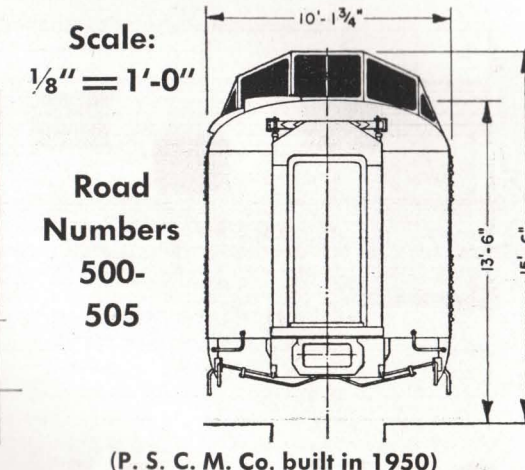
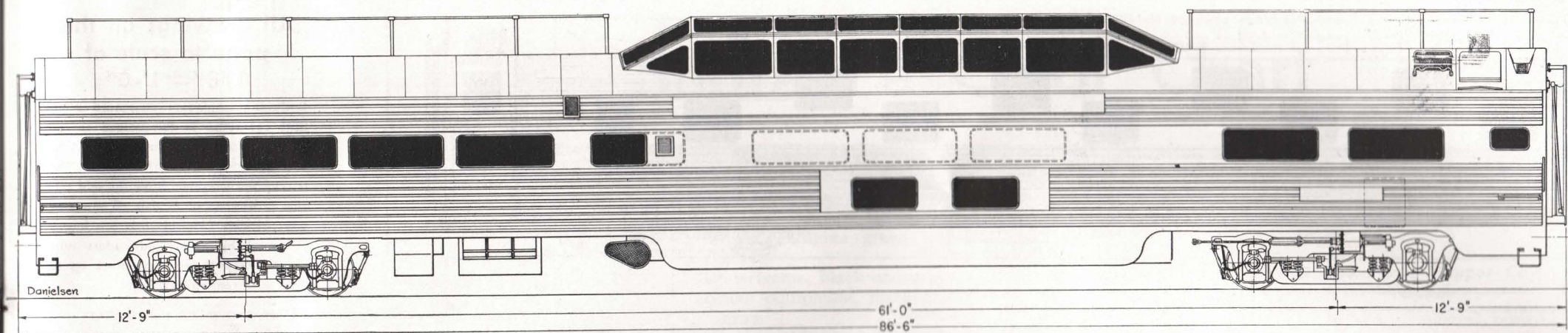
Road Numbers 1474-1498

(Budd-built 1474-1484 in 1937, 1485-1487 in 1938, 1489-1498 in 1942.)

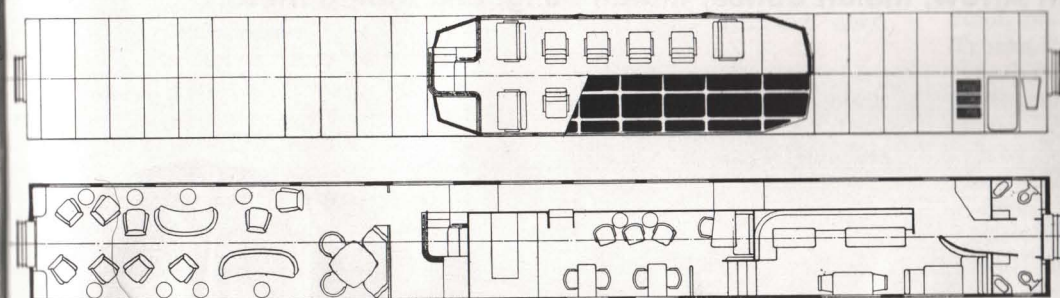
The diner with its profusion of roof detail, including stacks, ventilating louvers, ice hatches, and hand grabs, is one of railroad's most interesting passenger cars.

Section Pullman Car

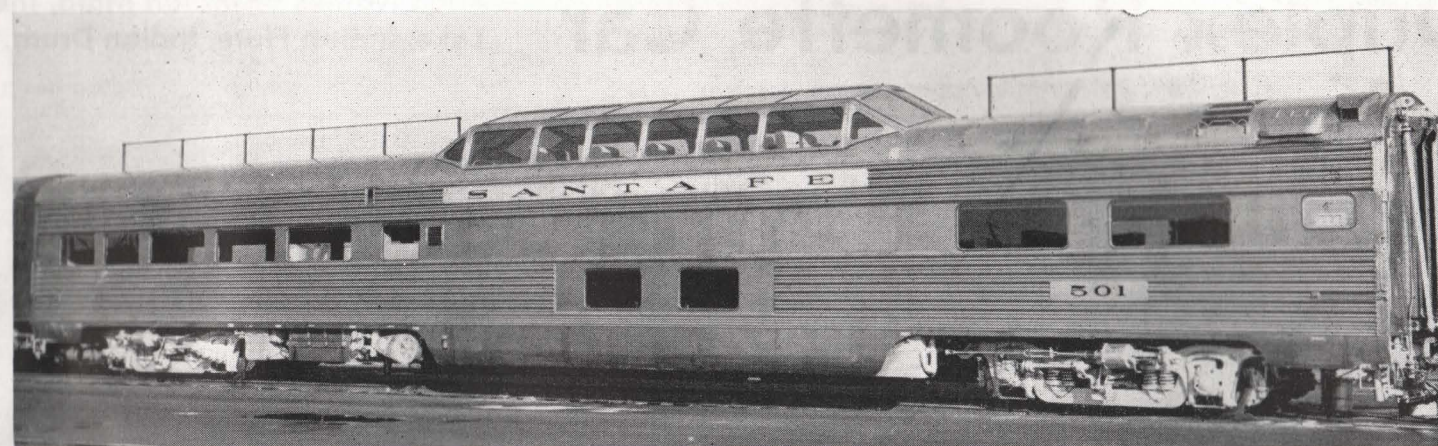




FLOOR AND ROOF PLAN Scale: $\frac{1}{16}'' = 1'-0''$

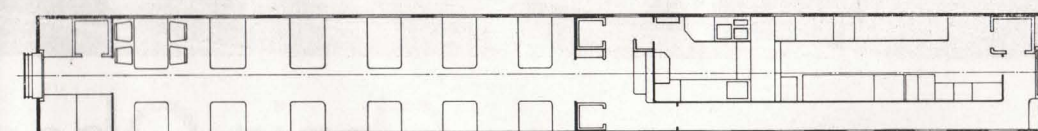
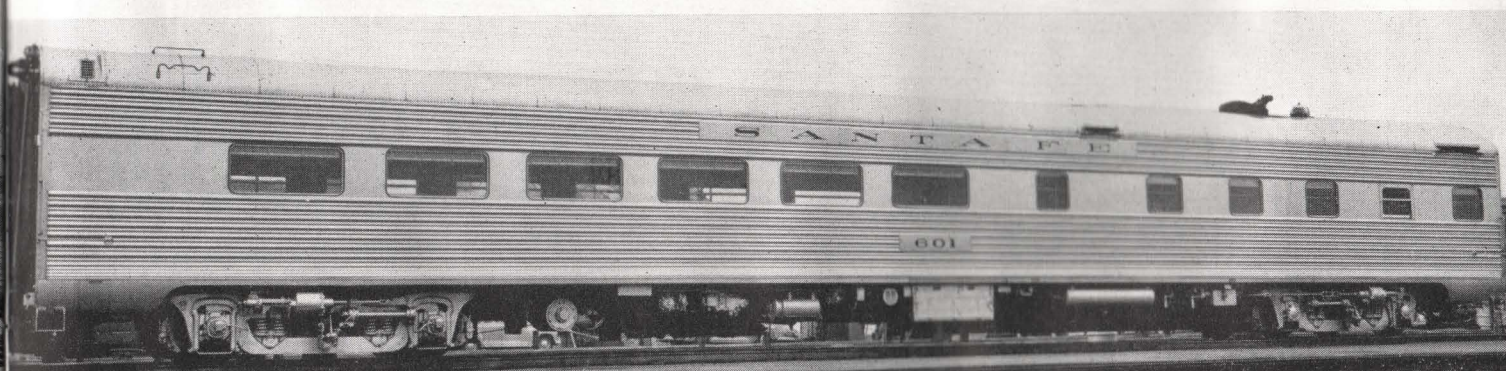


Pleasure Dome Lounge Car

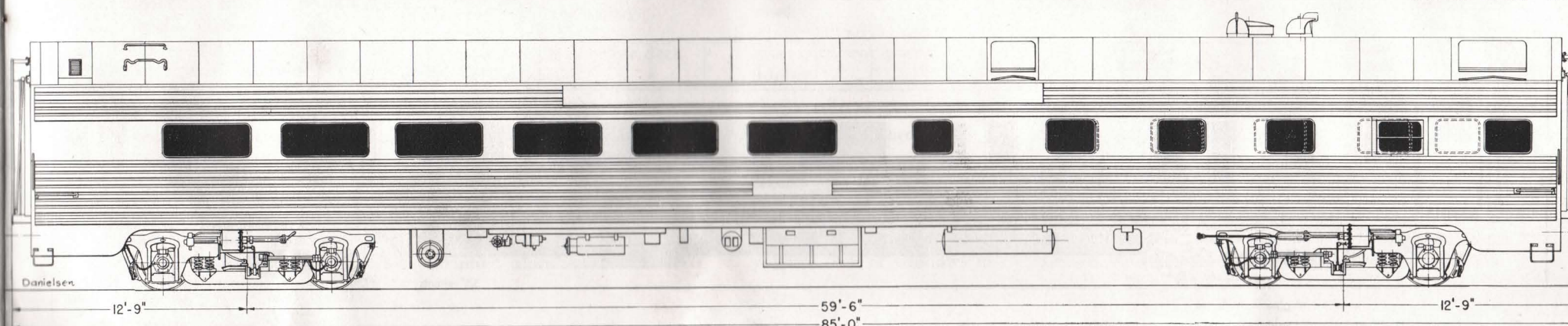


These streamlined cars were placed in service on the Super Chief early in 1951. Above is pictured Santa Fe's dome lounge car. At the left end is the main lounge; at the center, the lower cocktail lounge; and at the right end, the upper cocktail lounge. The pleasure dome has four rotating-reclining and four stationary seats. The dining car at the left is similar to the diners numbered in the 1474 class, but is longer by four feet.

Dining Car

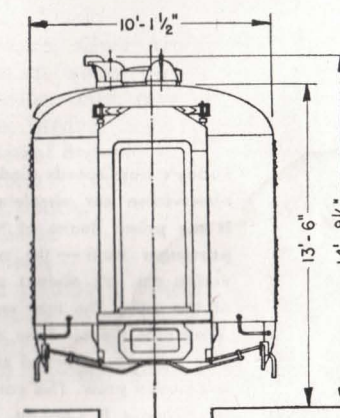


FLOOR PLAN Scale: $\frac{1}{16}'' = 1'-0''$

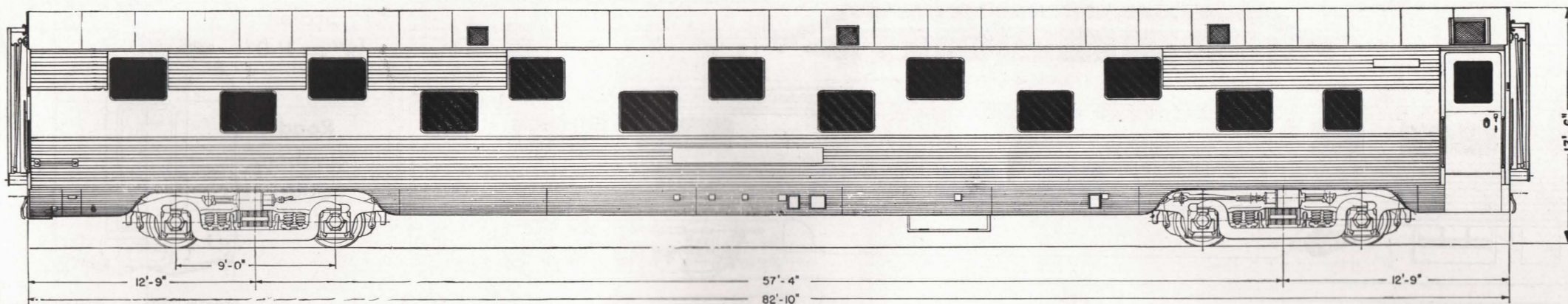


Scale:
 $\frac{1}{8}'' = 1'-0''$

Road
Numbers
600-
606



(P. S. C. M. Co. built in 1950)



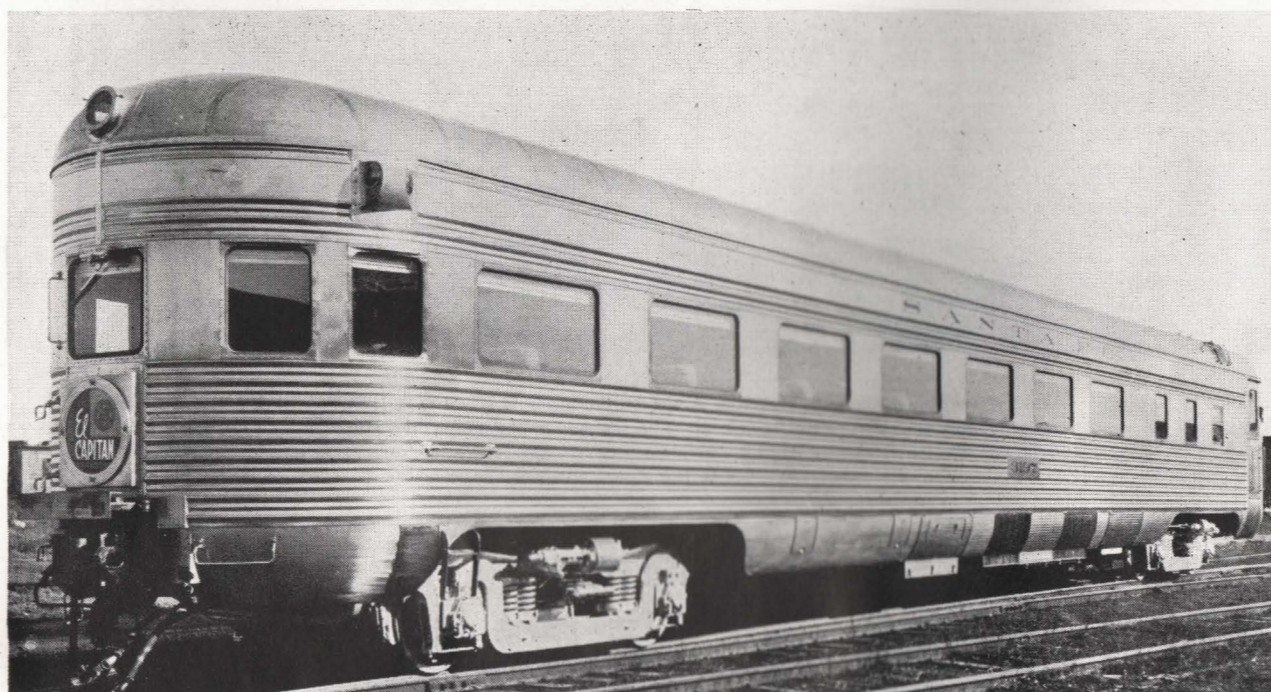
All drawings on this page to scale of $1/8" = 1'-0"$

Designing engineers staggered alternate roomettes in this unique car on different floor levels in order to take full advantage of interior space. That is why the windows have the odd zig-zag arrangement. Models of new and unusual cars like this one are highly esteemed by model railroaders who like to keep their rolling stock up to date with real railroading.

(P. S. C. M. Co.-built in 1947)

Duplex Roomette Car

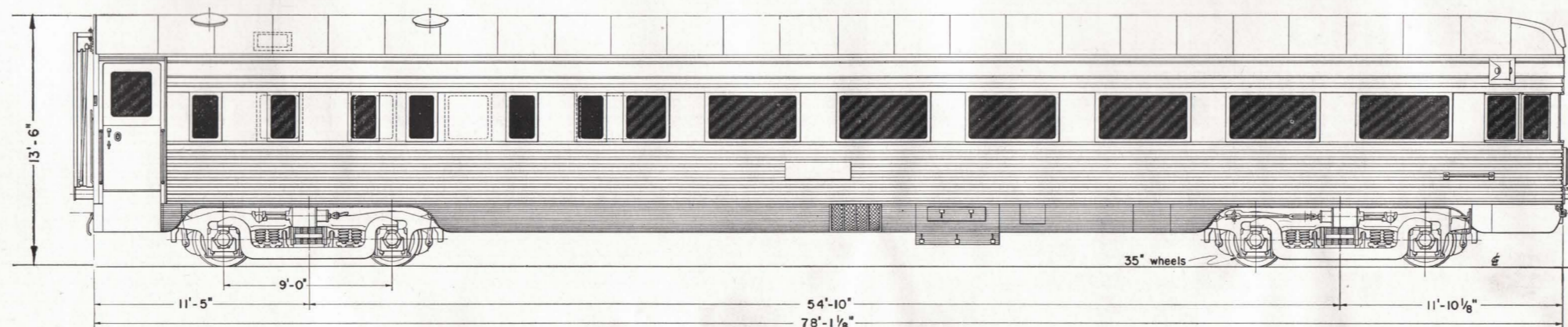
Road Names — Indian Maid, Indian Scout, Indian Squaw, Indian Pony, Indian Falls, Indian Lake, Indian Flute, Indian Drum, Indian Arrow, Indian Canoe, Indian Song, and Indian Mesa.



Chair Observation Car

Road Numbers 3197 built 1940 P. S. C. M. Co.
Road Numbers 3246-3248 built 1947 P. S. C. M. Co.

Today's train speeds made the open-end observation car obsolete. In its place is the prima donna of the streamlined passenger train — the enclosed observation car. It's always at the tail end of the train. The rear end streamlining terminates the air flow design that begins with the graceful contours of the locomotive prow. This car is from Santa Fe's famous El Capitan. Notice the oscillating headlight recessed into the roof.



Santa Fe Color Chart

Passenger Locomotives (Steam)

Headlight, black.
Cab exterior, black.
Roof, black.
Frames, main and truck, black.
Jacket, black.
Running gear, including wheels, black.
Cab interior, green.
Letters, numbers, striping, aluminum.
Smokebox, front, tarpon gray; sides, (jacketed) black.
Rods, main and side valve gear parts, black.
Roller bearing main and side rods, polished steel.
Tires, black.
Running boards, black.
Cab sash, black.
Cylinders, frames, trucks, brakes, black.
Handrails, black.

Passenger Tenders

Exterior, black.
Tank frame, black.
Trucks and wheels, black.
Letters and numbers, aluminum.

Freight Locomotives (Steam)

Cab exterior, black.
Roof, black.
Frames, main and truck, black.
Jacket, black.
Smokebox, front, tarpon gray; sides, (jacketed) black.
Wheels, black.
Cab interior, green.
Cab sash, black.
Letters and numbers, aluminum.
Rods, main, side and valve gear parts, black.
Cylinders, black.
Frames, black.
Trucks, black.
Brakes, black.

Handrails, black.
Headlight, black.

Streamlined Steam Locomotives

Cab exterior, light blue.
Cab interior, green.
Jacket, light blue.
Side finish, light blue.
Cab sash, natural wood.
Handrails, chromium plated.
Wheels and running gear, blue.
Trucks, blue.
Letters and numbers, black or stainless steel.
Striping (if any) stainless steel.

Streamlined Tender (Steam Locos)

Exterior sides, light blue.
Exterior ends, light blue.
Letters and numbers, black or stainless steel.

Diesel Locomotives (Passenger)

Body, red and stainless steel.
Striping, red, yellow and black.
Cab interior, suede gray.
Frames and parts below deck line, black.

Diesel Locomotives (Freight)

Body, blue and yellow.
Striping, yellow.
Cab interior, suede gray.
Trucks, black.
Frames and parts below deck line, black.

Switch Locomotives (Diesel)

Body, black.
Running gear and wheels, black.
Letters and numbers, aluminum.
Striping, aluminum.

Passenger Equipment (Not Streamlined)

Sides, Pullman green and gray.
Sashes, Pullman green and gray.
Underframe, black and gray.
Brake equipment, black and gray.
Equipment below body, Pullman green and two shades gray.
Roof, black and gray.
Trucks, Pullman green (light) and gray.
Platforms, rubber.
Steps, Pullman green and gray.
Handrails, Pullman green and gray.
Letters and numbers, yellow and aluminum edged in black.
Striping (if any), aluminum edged in black.
Drip molding, black and gray.
Diaphragm, Pullman green and two shades gray.

Passenger Equipment (Streamlined)

Body, stainless steel.
Trucks, aluminum.
Letters and numbers, black.
Underframe, aluminum.
Steam and air connections, aluminum.
Skirt, window panel, stainless steel.
Letter board, stainless steel.
Roof and ventilators, stainless steel and aluminum.
Ends of car body, stainless steel.
Striping (if any), none.
Underneath equipment, aluminum.

Gas Electric Motor Cars

Front end:
Bottom of car to belt rail, red with yellow stripe.
Numbers, yellow on black.
Belt rail to top of windows, yellow. Top of windows to

roof, red. Sun visor, rear view mirror and awning, yellow. Grab irons, black.
Rest of car, same as passenger equipment (not streamlined).

RDC Cars

Body, stainless steel.
Letters and numbers, black.
Trucks, aluminum.
Underneath equipment, aluminum.
Emblem on car end:
Striping: Outside and center bands, red. Narrow inside bands, yellow. Emblem: Circular portion, yellow cross in red circle, circle outlined in black. Square background, yellow with black outline. Lettering, black.

Box Cars

Underframe, mineral brown.
Trucks, mineral brown.
Floors, not painted.
Sides (wood), mineral brown.
Sides (metal), mineral brown.
Ends (metal) sill steps, mineral brown.
Ends (wood), mineral brown.
Letters and numbers, white.
Running board, mineral brown.
Side doors (wood), mineral brown.
Side doors (metal), mineral brown.
Roofs, black.
Steps, mineral brown.

Reefer Cars

Underframe, black.
Trucks, black.
Floors and floor racks, varnish only.
Sides (wood), yellow.
Sides (metal), yellow.
Ends (wood), black.
Ends (metal) sill steps, black.
Letters and numbers, black.

Running board, black.
Side doors (wood), yellow.
Side doors (metal), yellow.
Roofs, black.
Steps, black.

Gondola and Hopper Cars (Open)

Underframe, mineral brown and black.
Trucks, mineral brown and black.
Floors, not painted.
Sides, mineral brown and black.
Ends, mineral brown and black.
Letters and numbers, white.
Running board, none.

Hopper Cars (Covered)

Underframe, mineral brown.
Trucks, mineral brown.
Floors, not painted.
Sides, mineral brown.
Ends, mineral brown.
Letters and numbers, white.
Running board, mineral brown.
Roof, mineral brown.

Tank Cars

Underframe, black.
Trucks, black.
Tank shell and dome, black.
Bands around tank and dome, gray.

Work Equipment

Underframe, black.
Trucks, black.
Floors, dark green.
Sides, battleship gray.
Ends, battleship gray.
Letters and numbers, black.
Running board, black.
Roof, black.

House Cars

Underframe, black.
Trucks, black.

Floors, dark green.
Sides, battleship gray.
Ends, battleship gray.
Letters and numbers, black.
Running board, black.
Safety equipment, battleship gray.
Roofs, black.

Stock Cars

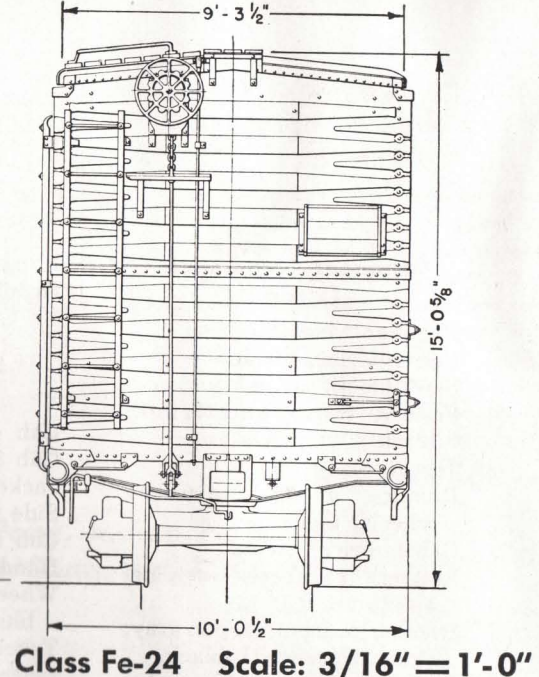
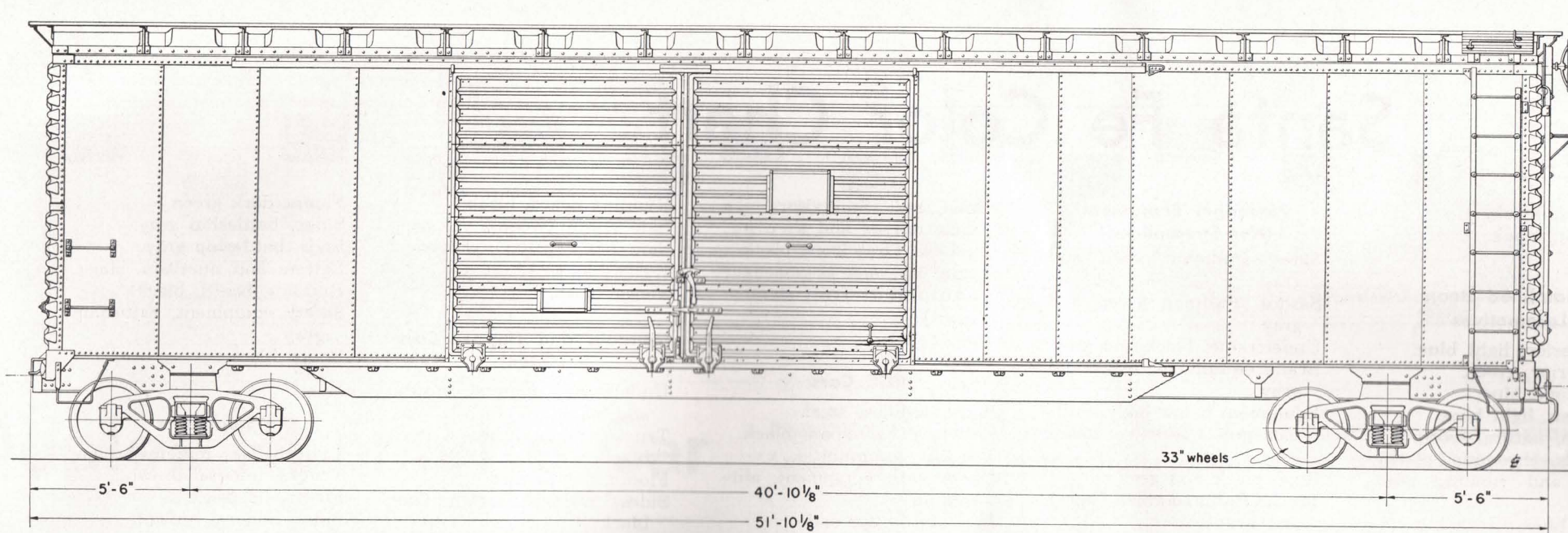
Underframes, mineral brown.
Trucks, mineral brown.
Floors, no paint.
Sides, mineral brown.
Ends, mineral brown.
Letters and numbers, white.
Running board, mineral brown.
Roof, black.
Steps and ladders, mineral brown.
Side doors, mineral brown and yellow.

Flat Cars

Underframes, mineral brown.
Trucks, mineral brown.
Floors, dipped in creosote.
Sides, mineral brown.
Ends, mineral brown.
Letters and numbers, white.
Steps, mineral brown.

Caboose Cars

Car body, exterior, mineral brown.
Car body, interior, silver gray.
Roof, main, black.
Roof, cupola, black.
Interior lockers, silver gray.
Interior bunks, silver gray.
Floors, interior, dark green.
Underframe, black.
Trucks, mineral brown.
Toolbox, mineral brown.
Smokestack, black.
Handrail, black.
Columns, black.
Letters and numbers, white.
Facia boards (if any), none.
End platforms and steps, black and mineral brown.

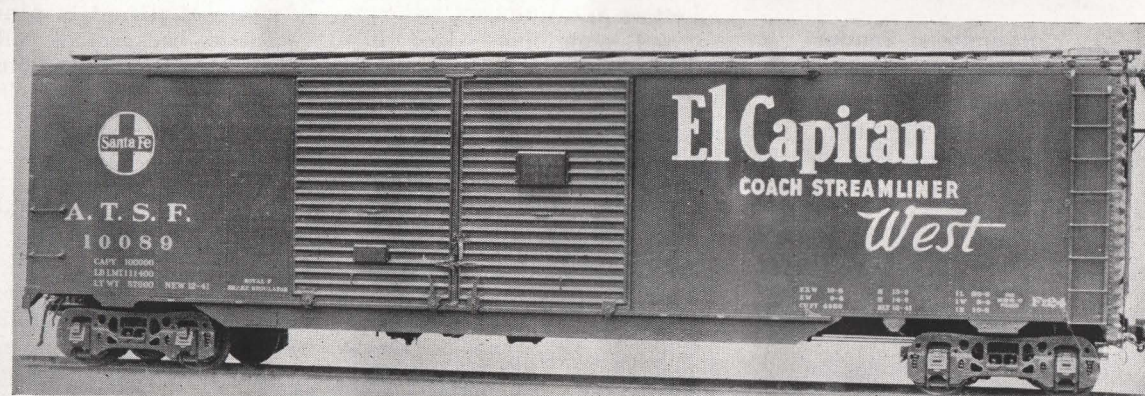


Class Fe-24 Scale: 3/16" = 1'-0"

50 Foot Auto Car

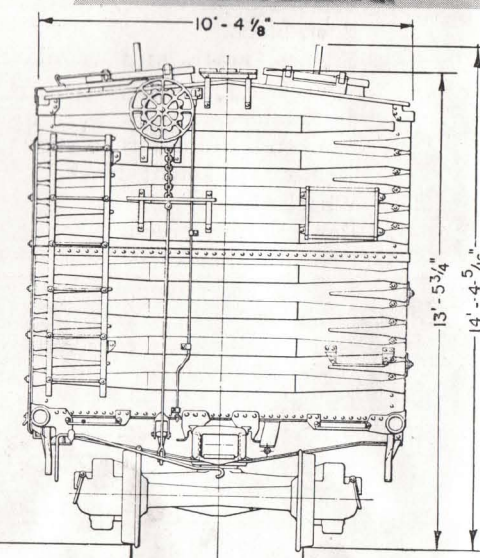
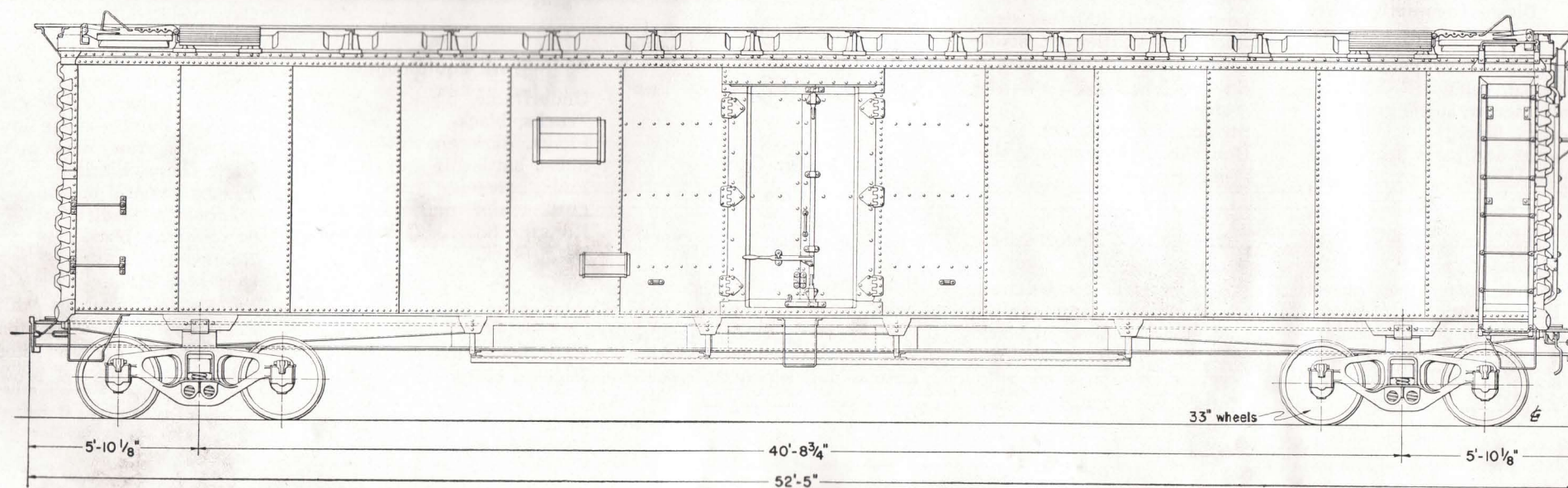
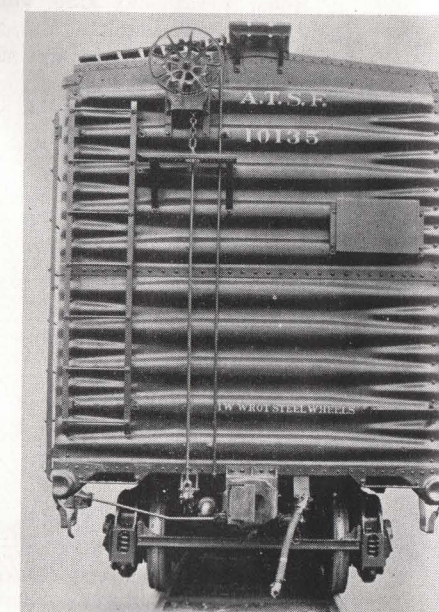
Road Numbers 10300-10499
(P. S. C. M. Co.-built in 1942.)

This pair of 50 footers offers plenty of challenges to the model builder, even if commercial parts are used. The wide roof ribs can be duplicated with strips of Bristol board; the narrow ones, with postcard stock or shim brass. Better use commercial castings for the ends and the automobile car doors. Sides can be of wood with a riveted paper overlay, or sheet metal with rivets impressed. In either case be sure to use interior bracing. Reefer door hardware is available in all gauges.



50 Ton Refrigerator

Class RR-30



Road Numbers 37290-37389
(G. A. T. C.-built in 1940.)

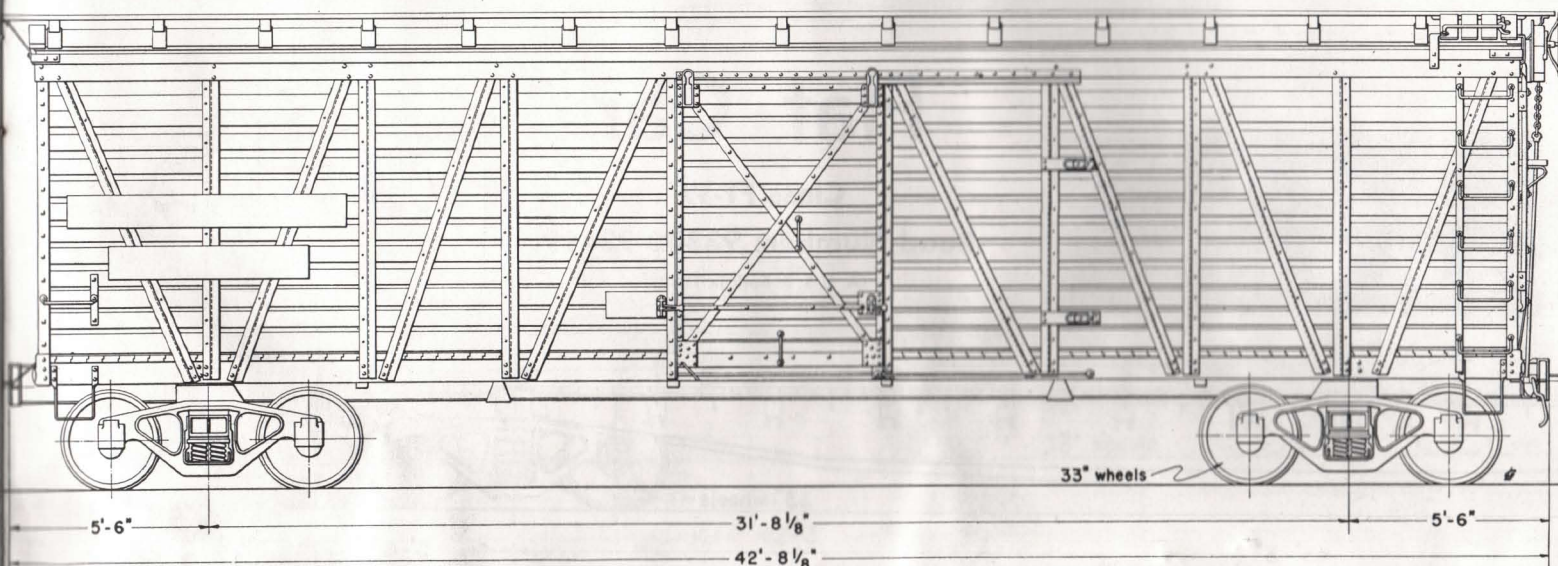
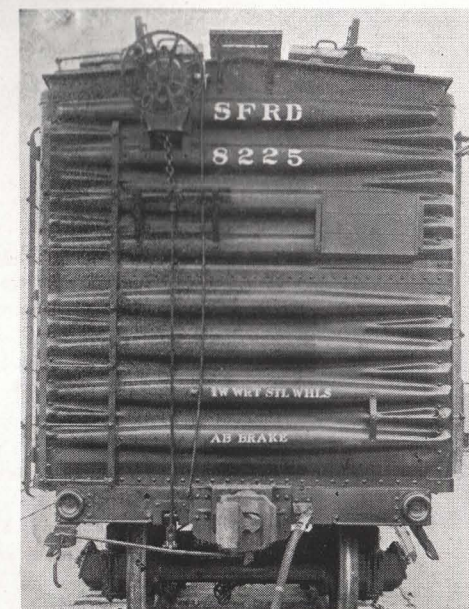
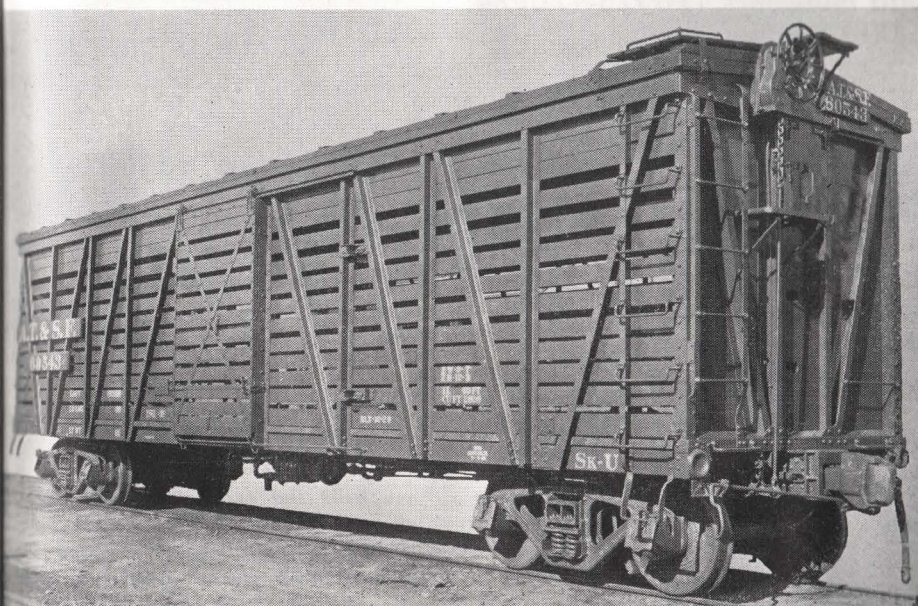
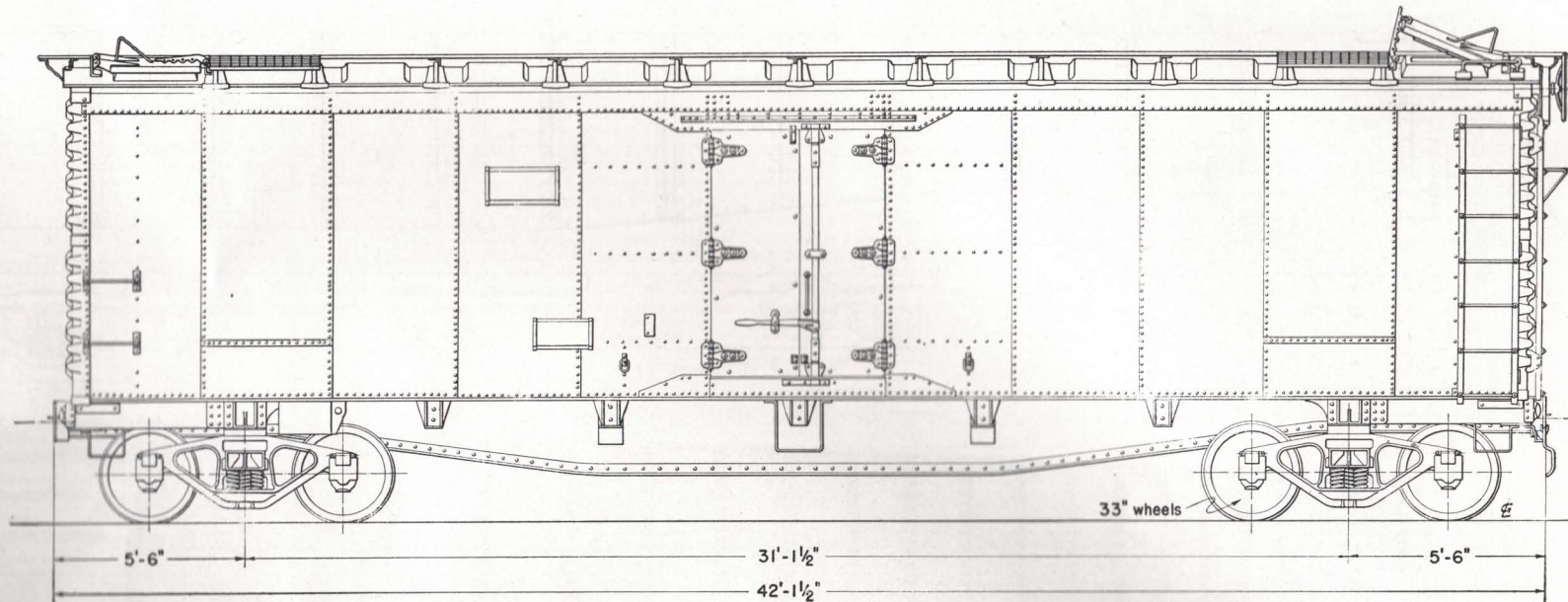
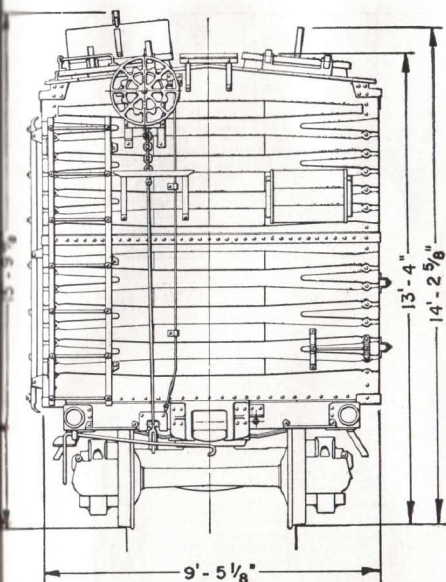
40 Foot Refrigerator

Class RR-40

Road Numbers 8100-8599

(Given general repairs 1946 in home shops.)

Reefers are colorful and contain more interesting hardware details than other freight cars. The Santa Fe often runs solid trains of them, and you can, too. Many modelbuilders buy only hardware, trucks, ends, and decals, and build the bodies of 1/8" plywood or artists' 12-ply illustration board.



Stock Car

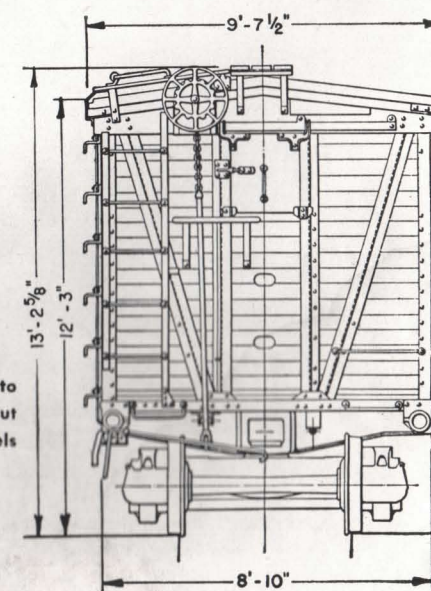
Class SK-U

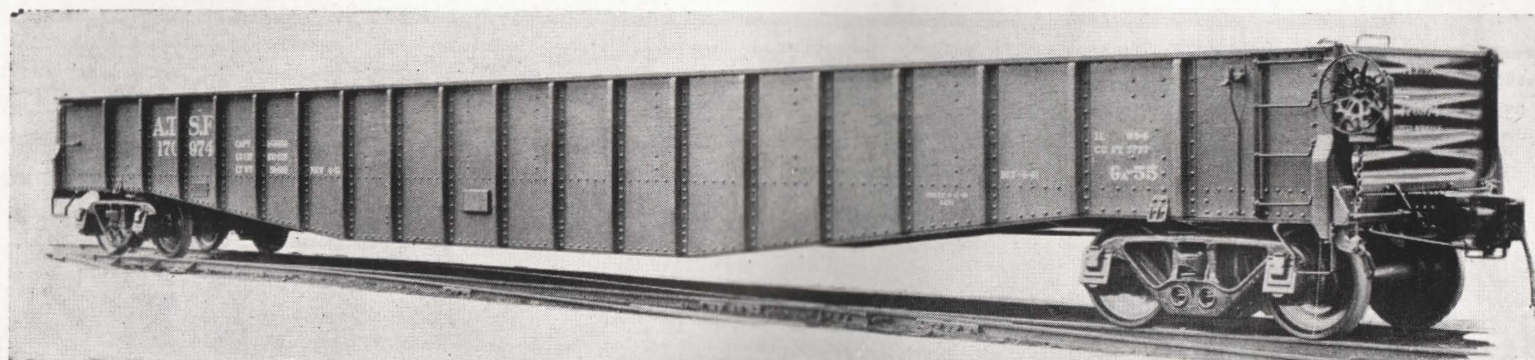
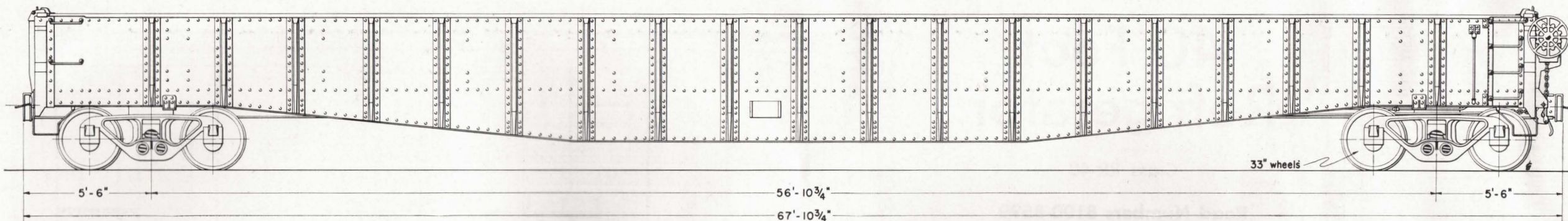
Road Numbers 60502-60801

(Penn Car Co.-built in 1929-30.)

A good way to make stock-car sides, if you can solder, is to cut slats out of sheet metal and solder Z-braces to them. But don't worry if you can't solder, for many fine stock-car models have bodies made of cardboard and wood.

All drawings on this page to scale of 3/16" = 1'-0"



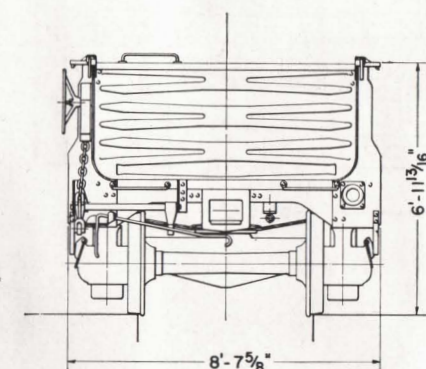


Gondola

Class Ga-55

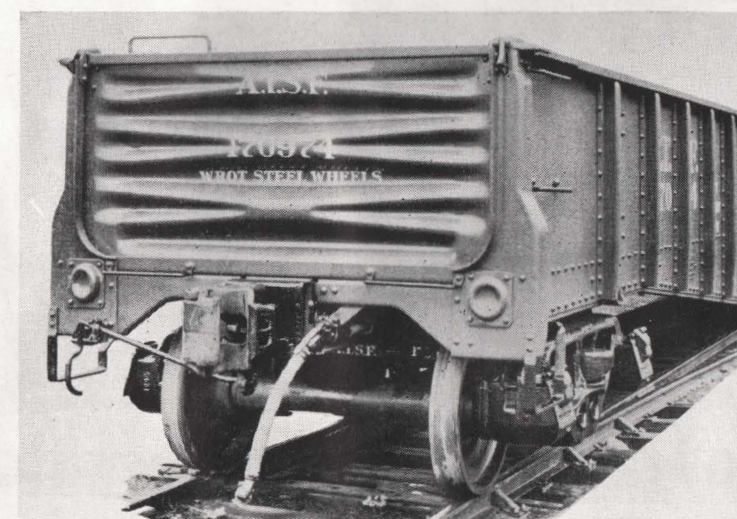
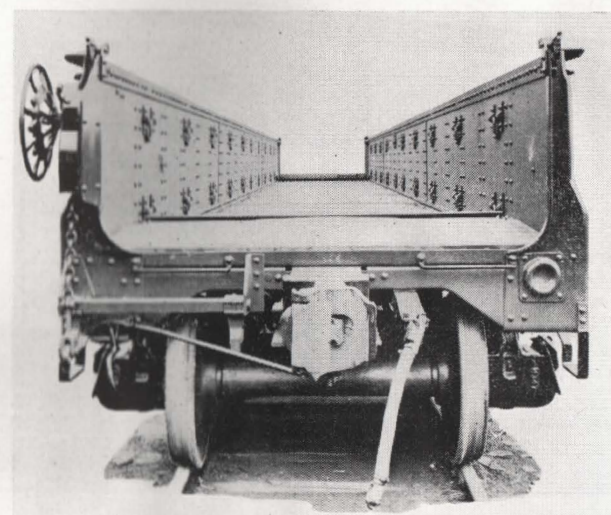
Road Numbers 170925-170974

(G. A. T. C.-built in 1941.)

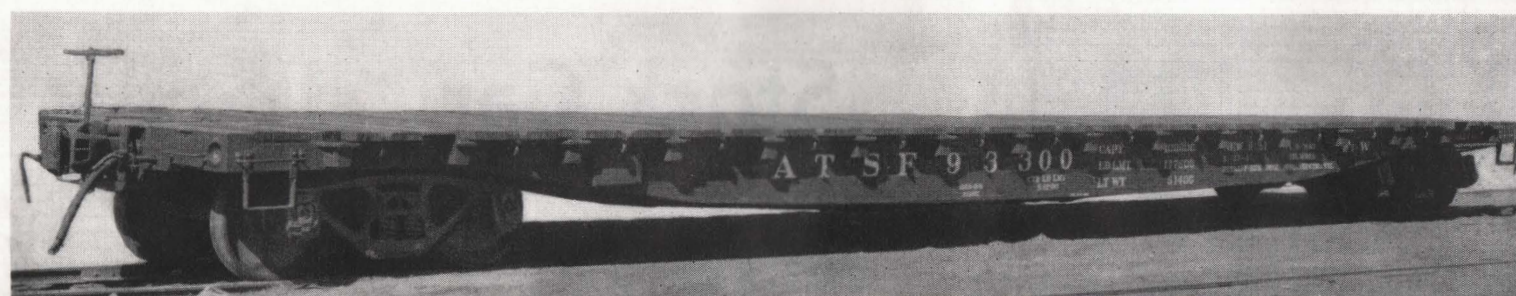


Scale: 3/16" = 1'-0"

Model railroaders sometimes consider duplicating the real railroads in numerical ratio of one type of car to others. Actually, this scheme doesn't work out very well when less than 100 cars are involved, and few model railroaders have that many. By national average, out of each 1000 real railroad cars there are 427 hoppers and gondolas; 363 box cars; 70 tank cars; 66 reefers; 32 flat cars; 26 stock and poultry cars; 11 cabooses; and 5 miscellaneous types. Of course, individual railroad ratios vary with the type of traffic handled. Thus, western roads might have a higher ratio of reefers; eastern roads, with heavy coal traffic, more hoppers and gondolas. So take your choice and build as many cars of any kind as you want.



Gondolas and flat cars are common, but the two on this page are special types. Each exceeds 60 ft. in length. They are used for extra long loads, such as 100 ft. bridge girders which are mounted so that the girder straddles two cars. If drop end gondolas are used, the ends are lowered as shown in the photo. Incidentally, when you build flat cars, use individual pieces of balsa wood for floor planking, then stain with iodine. The realism of the finished floor will delight you.

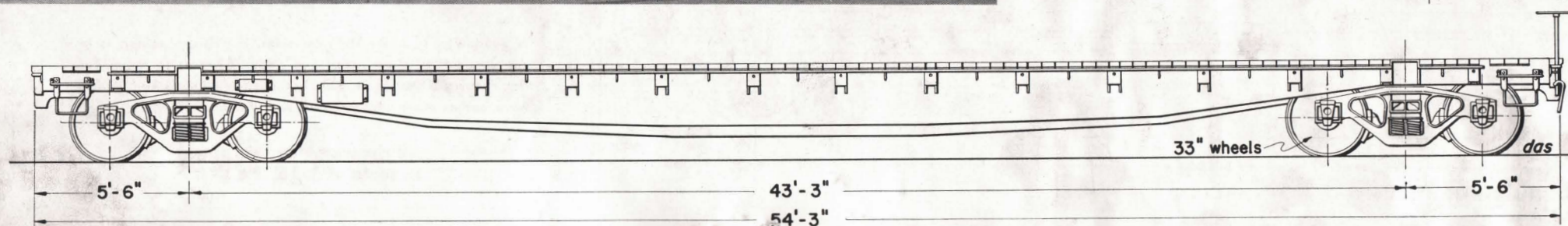
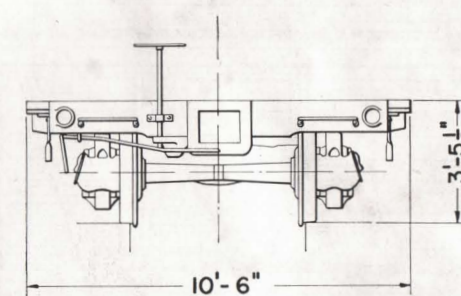


Flat Car

Class FT-W

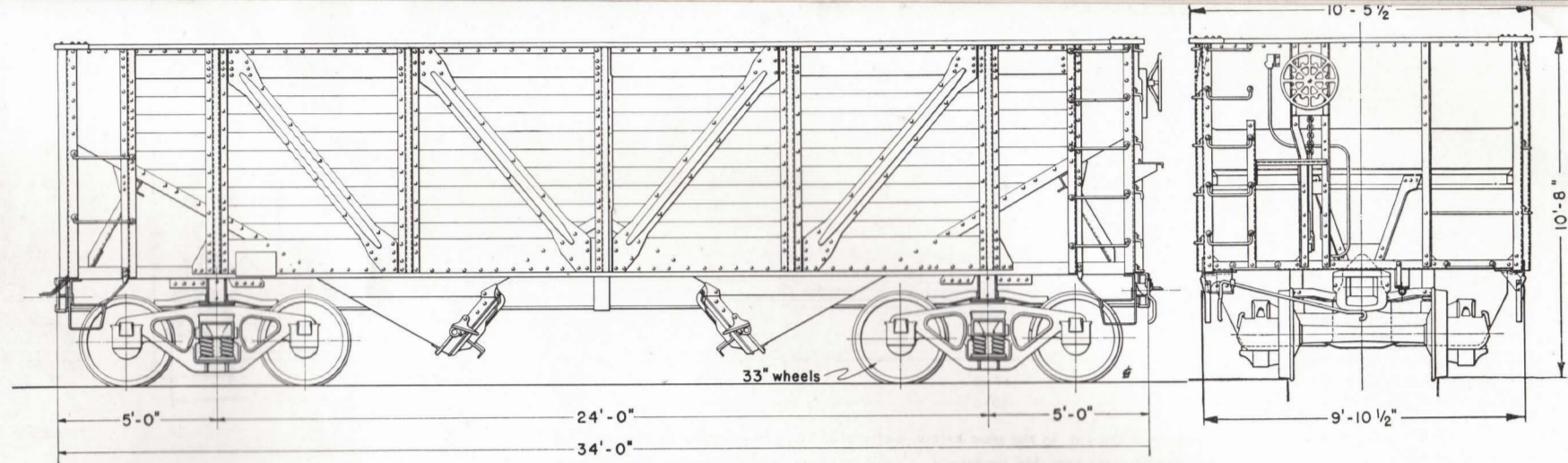
Road Numbers 93300-93499

(A. T. S. F. Built in 1952)



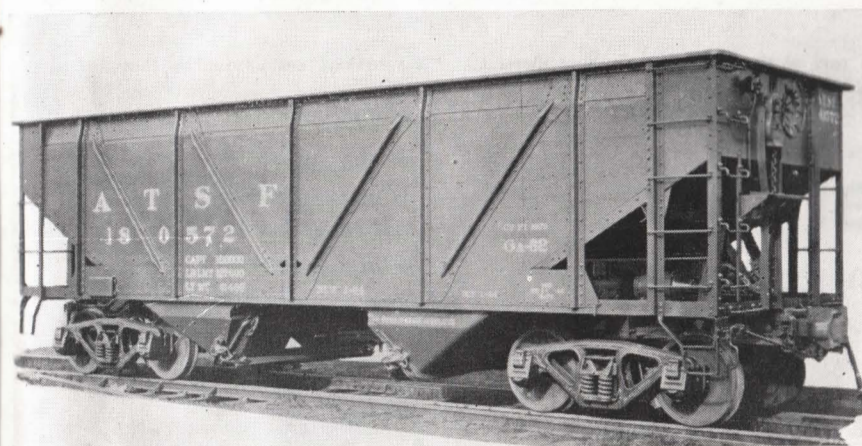


Wood sides of this modern hopper saved steel during World War II.



Hopper Car

Class Ga-62 Road Numbers 180400-180599
(G. A. T. C.-built in 1944.)

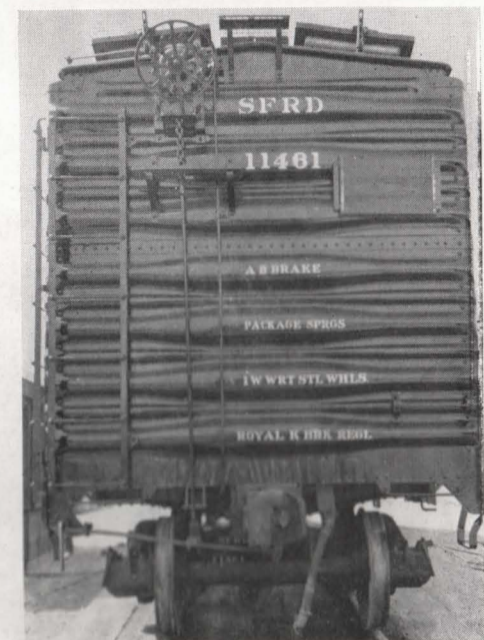
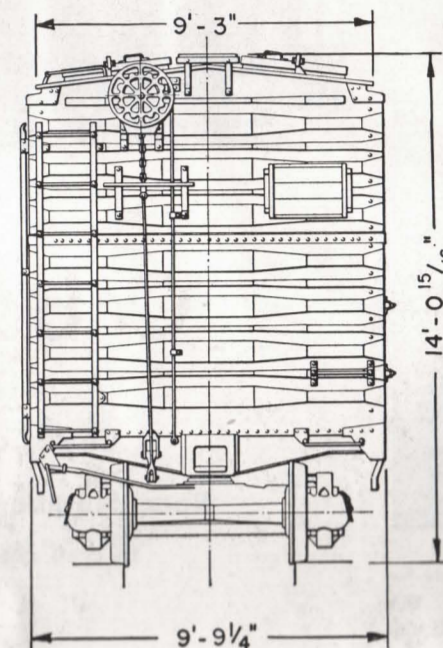
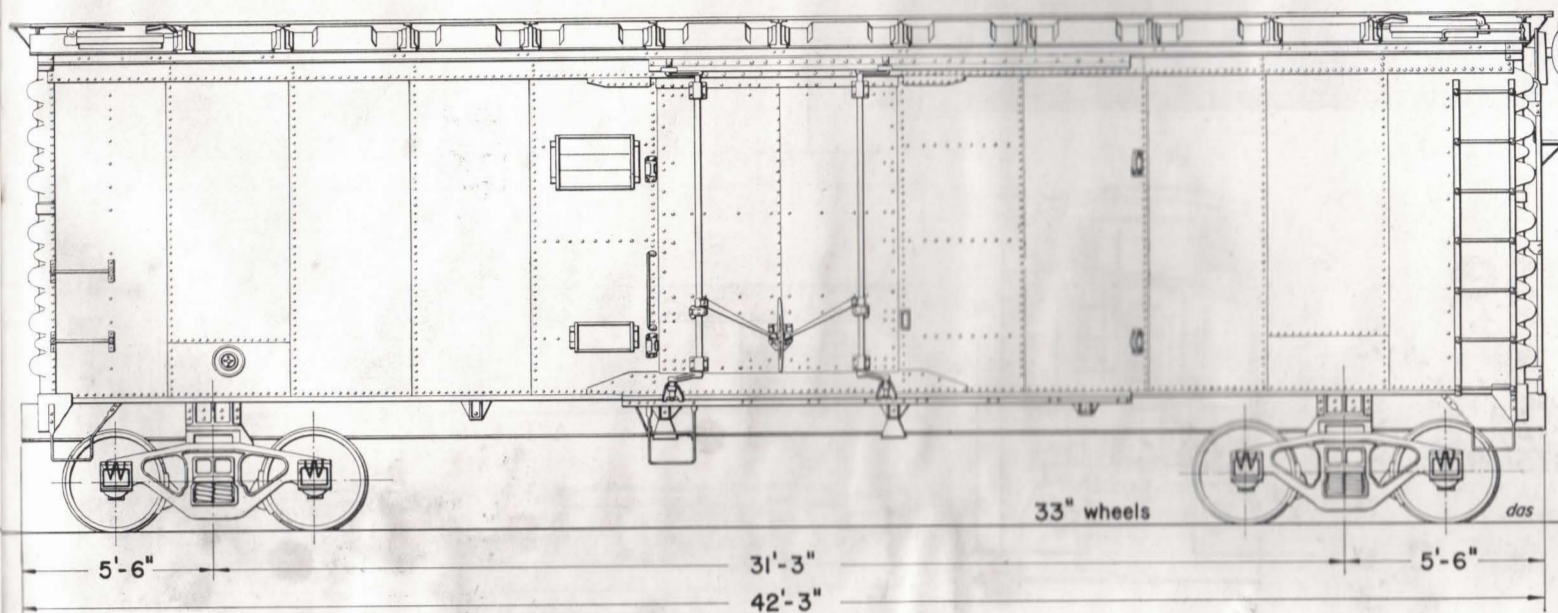
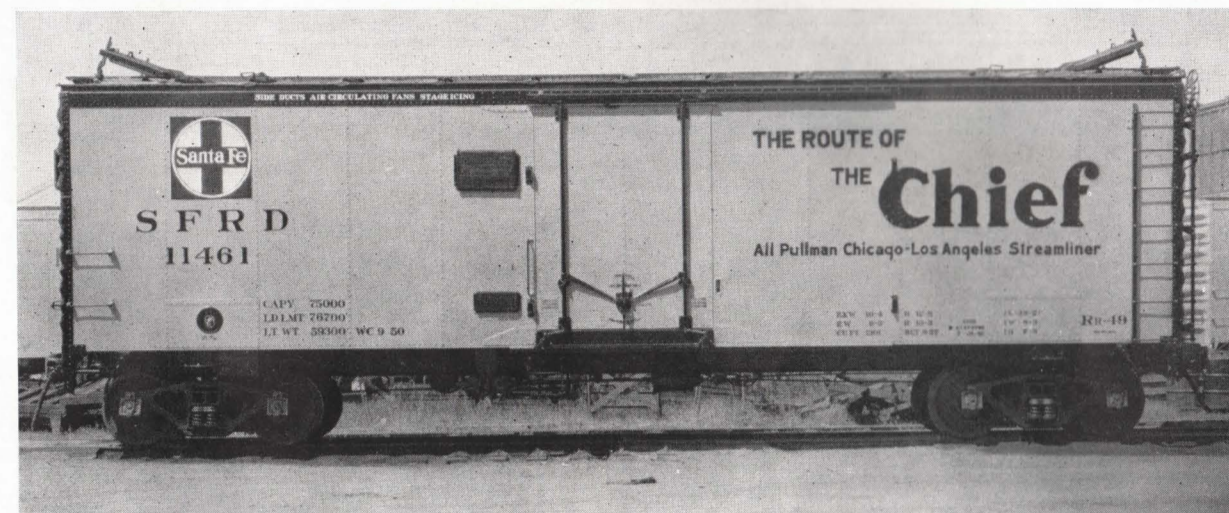


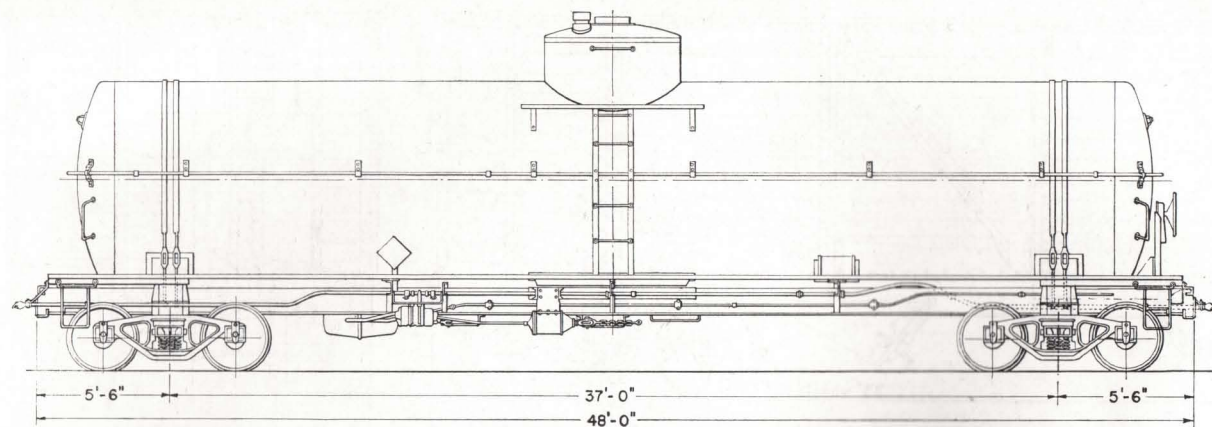
Scale: 3/16" = 1'-0"

Class RR-49 refrigerator cars have sliding doors instead of the usual hinged type. Notice the door-operating mechanism: An arrangement of levers pulls the tight-fitting door outward so it can be slid along the upper and lower guides to clear the opening.

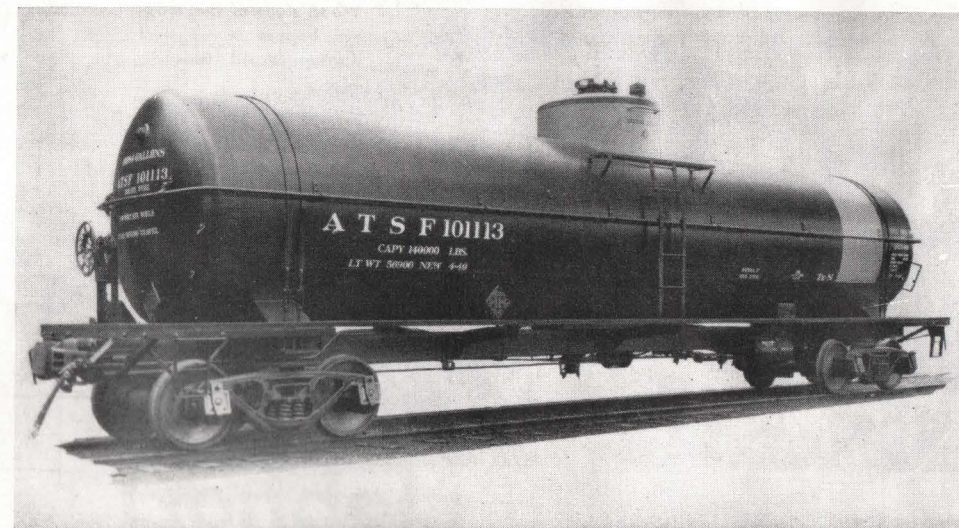
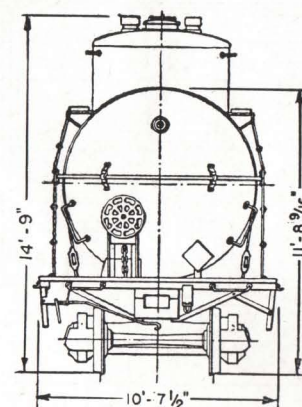
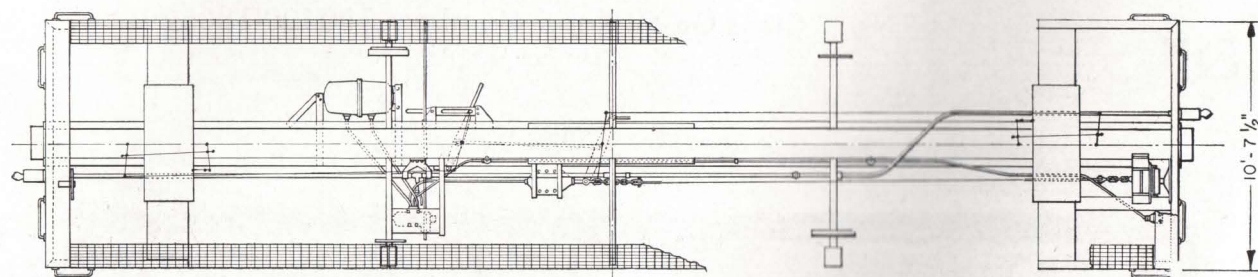
40 Foot Refrigerator

Class RR-49 Road Numbers 11432-11931
(Built by the A. T. & S. F. Ry.)





The walkway extends clear around the car. In the plan below, parts of it have been removed to show underframe detail. This series of cars uses non-skid walkways, a solid type on the ends and a grid type on the sides.

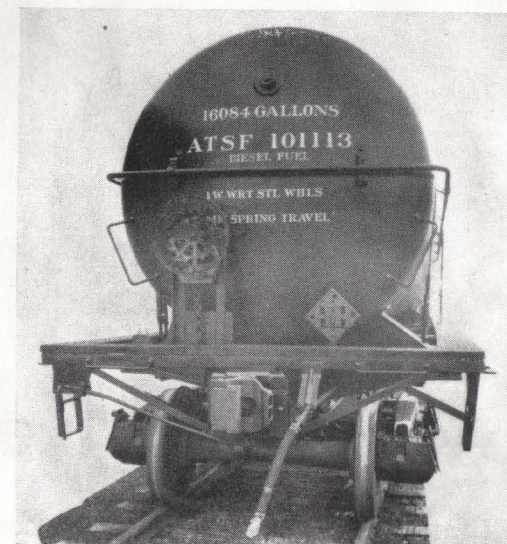


Santa Fe uses cars of the Tk-N class to haul diesel oil. These tankers are unusual in that they are extremely long.

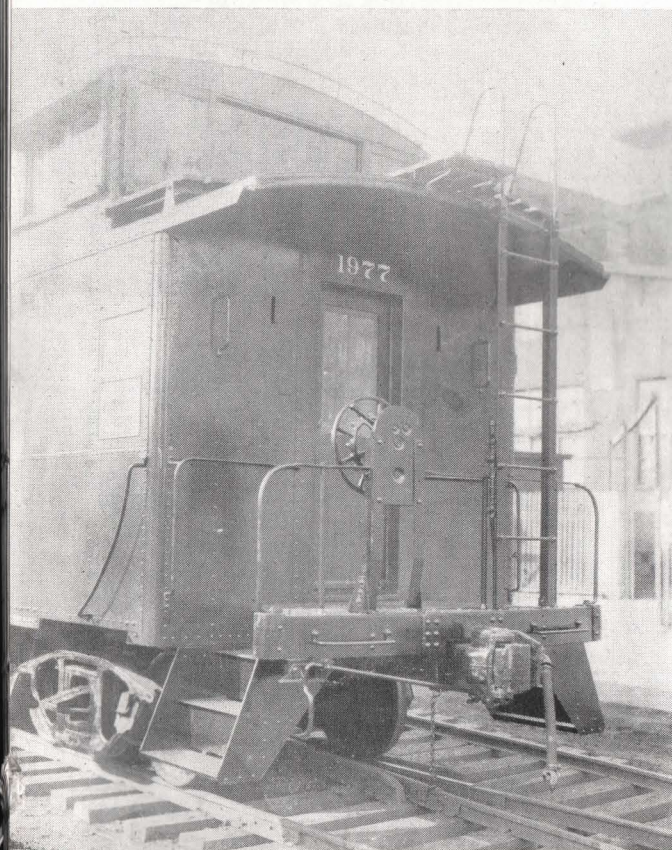
Tank Car

Class Tk-N Road Numbers 101100-101349

(GAT Corp. built in 1949)



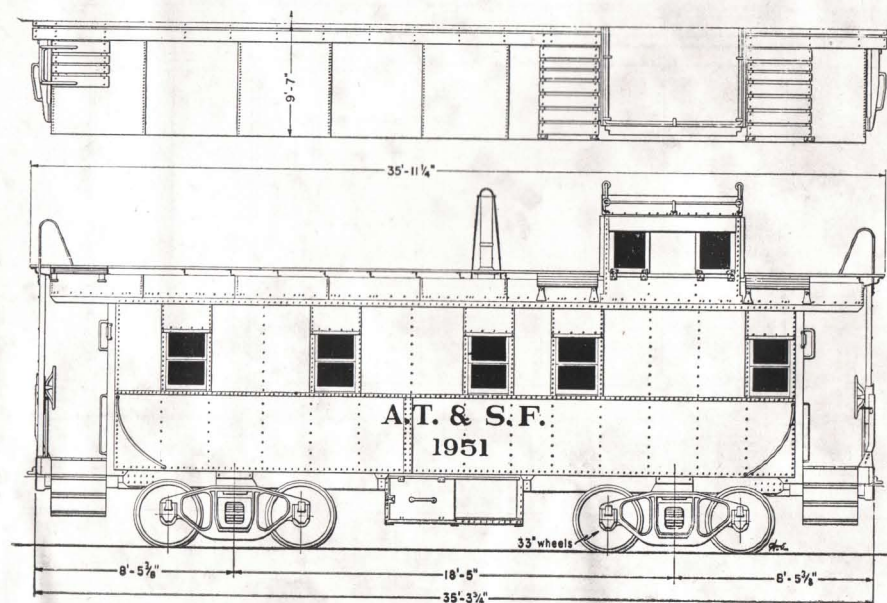
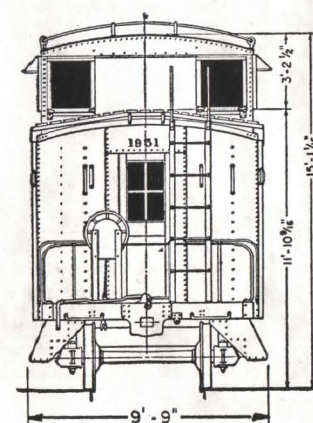
Scale: 1/8" = 1'-0"



Caboose

Class Caboose
Road Numbers 1875-1978

(A. C. & F. Co.-built in 1930.)



Most model railroaders sooner or later develop a keen taste for cabooses and continually add new ones to their collection. This eight-wheeler would be an impressive "doghouse" at the tail end of any freight train.

