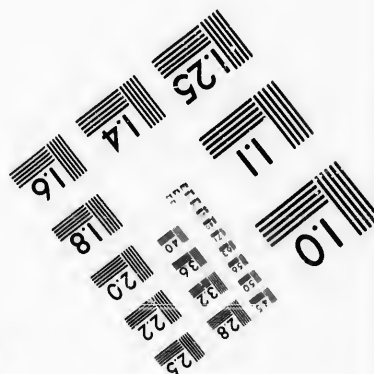
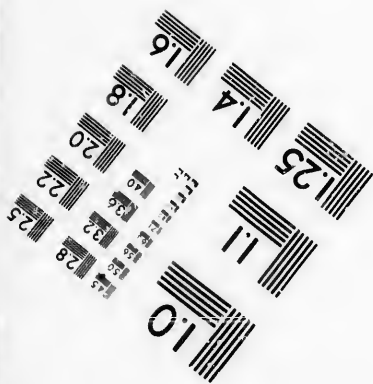
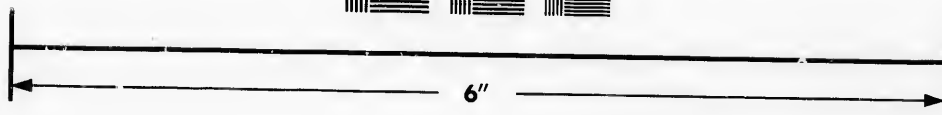
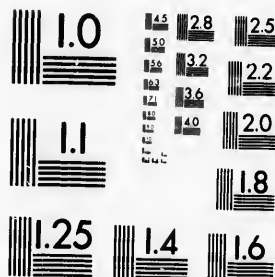


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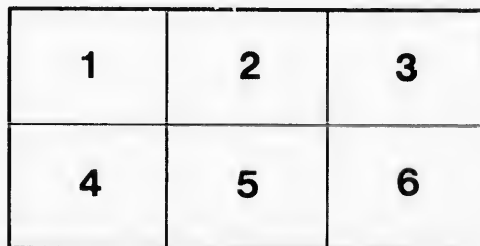
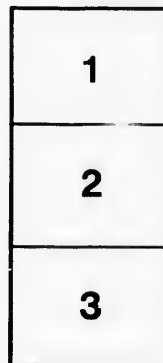
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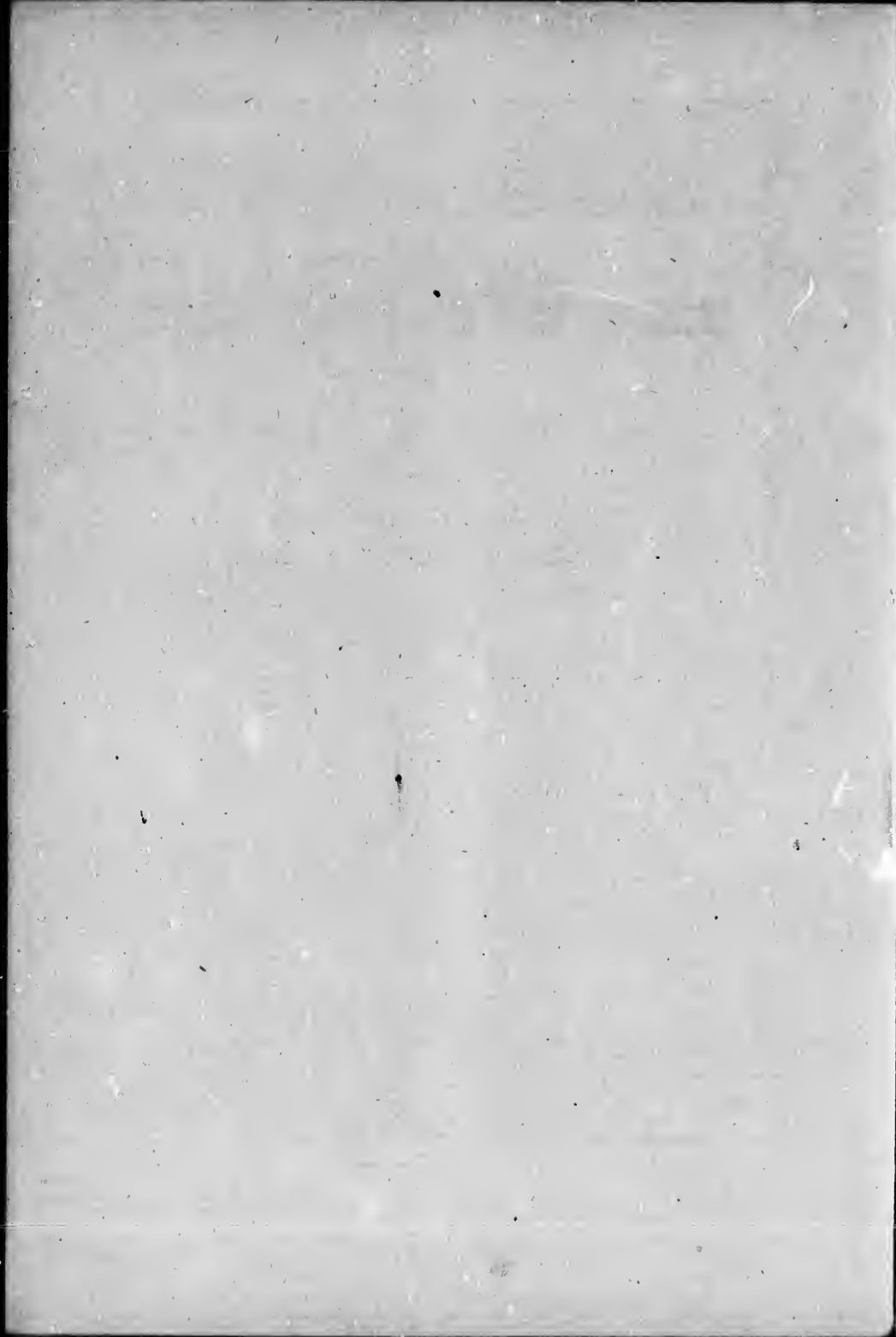
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**Grand Trunk Railway.**

SPECIFICATION

OF

**BOX CAR BODIES.**



# GRAND TRUNK RAILWAY.

## SPECIFICATION OF BOX CAR BODIES.

FOR A GAUGE 4 FEET 8½ INCHES.

### GENERAL CONDITIONS.

The Cars must be made to the dimensions given in the following specifications, and according to drawings and samples furnished. The timber used must be of first quality, dry, sound, and well seasoned, and accurately fitted together. The wrought iron must be of best "Staffordshire," or of equal and approved quality. The castings must be made from tough grey pig iron, and must be sound, smooth, and perfect in all respects.

All the bolts and nuts used must be screwed to "Whitworth's" thread.

The Cars must be fitted and finished in the most complete manner to the entire satisfaction of the Company's Mechanical Superintendent, or his Agent, who shall be allowed to inspect the work, with power to reject any part found to be defective in quality or workmanship, or not in accordance with specifications.

The iron work and springs to be warranted for twelve months after being set to work, any failure during that period—except such as results from accident, must be made good by the contractor.

MECHANICAL SUPERINTENDENT'S OFFICE.

MONTREAL, 10th October, 1874.

No.	FRAMING.	Feet.	Inches.
	Length.....	29	0
	Breadth.....	8	6
2	Outside sills, white oak.....	.....	9 x 5
2	Intermediate longitudinals of Tamarac or Hard Red Pine.....	.....	9 x 4 $\frac{1}{2}$
2	Centre longitudinals, oak.....	.....	9 x 4 $\frac{1}{2}$
2	Headstocks, white oak.....length 8 ft. 1	.....	9 x 5
2	Body Bolsters do do .....	8 $\frac{1}{2}$	14 x 5
2	Transome do do or white ash.....	8 $\frac{1}{2}$	4 x 8
2	Centre pieces for king pin.....	2	7 x 7 $\frac{1}{4}$

Central and intermediate longitudinals framed into headstocks with two 1 $\frac{3}{4}$  in. tenons and secured by  $\frac{1}{2}$  in. joint bolts. Headstocks mortised with two 1 $\frac{3}{4}$  in. tenons into side sills, and secured by cast iron corner brackets with 4 bolts  $\frac{3}{4}$  in. diameter (as per drawing). Body bolsters checked into all longitudinals and bolted to each by  $\frac{5}{8}$  in. bolts, except centre which are  $\frac{3}{4}$  in. diameter. Transom checked into all longitudinals, and secured by one  $\frac{5}{8}$  in. bolt to each and  $\frac{1}{2}$  in. joint bolt to doorposts.

### BODY FRAMING.

	Description White Oak or White Ash.....		
8	Corner and Door Posts.....length 6 ft. 1	.....	5 x 3
	Tenons, top 2 in. long, bottom 2 $\frac{1}{2}$ in.....	.....	4 x 7
20	Upright Posts.....length 6 ft. 1	.....	4 x 2
20	Diagonal Braces.....	.....	2 x 3 $\frac{1}{2}$
	Inside Belting.....	.....	3 x 4
2	Top Rails, beveled to suit roof.....	.....	3 x 5
12	Tie Bolt, rail to sill, $\frac{5}{8}$ in. diameter.....	.....	

Belting notched into all uprights, and braces secured by 2 No. 18 2 $\frac{1}{2}$  in. screws, and bolted to standards by  $\frac{1}{2}$  inch cup headed carriage bolts, and to corner posts by  $\frac{1}{2}$  inch joint bolts. Diagonal braces have  $\frac{1}{4}$  in. flange at ends secured to upright by 1 $\frac{1}{2}$  inch No. 18 screws. All parts to be planed and finished to proper shape and dimensions. The Car to be built with  $\frac{3}{8}$  in. upward camber at centre frame. All bolts and nuts have broad washers.



No.

## TRUSS RODS.

Feet.

Inches.

E { Two wrought iron Truss Rods  $1\frac{1}{2}$  in. diameter with  $1\frac{3}{8}$  in. screwed ends are on outside of intermediate timbers. They pass under cast iron shoes on transoms and over packing pieces and shoe on top of bolster close to floor and then through headstock. Nuts at this end are to have  $4\frac{1}{2}$  sq. cast iron washers with sheeting closely fitted to them. All shoes for rods secured each by 2 coach screws 4 in. x  $\frac{1}{2}$  in. Ends of rods at centre to have a double ended nut at least 9 in. long screwed with right and left hand thread.

## ROOF TIMBERS.

Description, white oak or ash.		
5 Transverse Arch Rails, depth.....	.....	12
Thickness, end ones 3 in., inner ones .....	.....	$2\frac{1}{2}$
1 Central Longitudinal.....	.....	$3\frac{1}{2} \times 3\frac{1}{2}$
2 Intermediate " .....	.....	$2\frac{1}{2} \times 3\frac{1}{2}$

F { Rails tenoned into wall plates and bolted joint bolt  $\frac{1}{2}$  in x  $9\frac{1}{2}$  in. Longitudinals checked into rails, bolted coach screws 6 x  $\frac{1}{2}$  in. White oak, ash or hard red pine, for longitudinals.

## ROOF.

Description, Hipped, Iron Sheeted.		
Sheeting (pine) 5 in. to 8 in. wide, thickness .....	.....	$\frac{7}{8}$
11 Sheets, Iron. Thickness W. G. No. 20.		

Battens to be notched, tongued and grooved: each strip secured by 14 nails  $2\frac{1}{2}$  in. long, good joint required at point of roof. Tongues and grooves, all joints and bedding surfaces thickly coated with white lead. Great care must be taken to turn up edges of plate to  $\frac{1}{8}$  in. radius. At ends and sides, iron sheet lapped downwards and nailed, thus making roof water and fire proof. Plates are protected and held in position by rolled sheet iron plate  $\frac{1}{8}$  thick, between which and the roof plate is a piece of canvas well saturated with paint, the whole secured to the roof by screws with rubber and iron washers as per drawing. Running board-pine 14 x  $1\frac{1}{2}$  in.

No.	Feet.	Inches.
<p>The upper surface of wood roof and both sides of iron plate, must have one coat brown mineral paint. When finished the upper surface of iron plate must have a second coat of the same.</p>		
<b>BODY SHEETING.</b>		
<p>Description, best white pine, planed, tongued grooved, matched and beaded. Width <math>4\frac{1}{2}</math> in. to 5 in. Thickness <math>\frac{7}{8}</math>".....</p>		7
<p>Nailed by heavy clench nails <math>2\frac{1}{2}</math> in. long, 5 in sills, 3 in belting, 3 in wall plates and 1 or 2 in braces.</p>		
<b>CORNICES</b>		
<p>Description, Red Pine. Section.....</p>		$2\frac{1}{8} \times 3\frac{1}{4}$
<p>Spiked to wall plate by <math>4\frac{1}{2}</math> in. cut nails and bolted, 5 bolts <math>\frac{1}{2}</math> in. diameter; these also carry guide for door outside cornice.</p>		
<p>2 Guides, oak <math>4\frac{1}{2}</math> in. deep centre, 3 in. at ends.</p>		
<p>2 Guides, oak, thickness.....</p>		1
<p>2 Cornices, end of Car.....</p>		$1\frac{1}{2} \times 3$
<p>2 Outside Doors.</p>		
Description, Sliding, of White Ash.		
<p>2 Top rails .....</p>		$1\frac{3}{4} \times 5$
<p>4 Stiles .....</p>		$1\frac{3}{4} \times 5$
<p>2 Bottom Rails.....</p>		$1\frac{3}{4} \times 6$
<p>2 Centre Rails.....</p>		$1\frac{7}{8} \times 8$
<p>Sheeting, Pine, 5 in. or.....</p>		$4\frac{1}{2} \times 3\frac{3}{4}$
<p>Tenons, top rail.....</p>		$3\frac{1}{2} \times 5\frac{5}{8}$
<p>Do bottom.....</p>		$4 \times 5\frac{5}{8}$
<p>Do length.....</p>		2
<p>Rails rabbeted for sheeting, top and bottom. ....</p>		$\frac{3}{4} \times \frac{3}{4}$
<p>2 Door Slides, Wrought Iron.....</p>	$10\frac{1}{2}$	$2 \times \frac{1}{2}$
<p>Top and bottom rail tenon checked down <math>1\frac{1}{4}</math> in. clear of edge—<math>1\frac{1}{2}</math> in. pressed nails for sheeting. Cast iron corner brackets for slide secured by 5 No. 20 screws and 1 joint bolt <math>\frac{1}{2}</math> in. x 11. Slide carried by 5 brackets secured by <math>\frac{1}{2}</math> in. bolt and a <math>2\frac{1}{2}</math> in. screw No. 18. Wrought Iron fastenings</p>		

No.	Feet.	Inches.
for locking doors are secured by rivets to doors and car side. The Ry. Co. and U. S. Government standard lock required for each door. Door stop, oak 2½ in. x 1¾ in. secured by coach screws 4 ins. x ½ in.		
2		
INSIDE OR GRAIN DOORS.		
Description "Martin's Patent."		
Length.....	5	8
Height .....	2	6
Thickness.....		7 8 8
5 Battens .....		8
INSIDE SHEETING.		
Height .....	2	6
Sheeting 8 in. to 10 in. Thickness.....	.....	7 8 8
Sheeting runs lengthways, planed one face, tongued and grooved, fitting tightly between floor and belting, nailed by 2½ in. nails similar to outside sheeting.		
FLOORING.		
White or Red Pine laid transversely.....		
Width timber 7 to 10, in Thickness.....	.....	2
Planed one side, tongued and grooved, each board secured by 18 nails 4½ in. long. Floor protected at door by wrought iron plate 3¾ in. x ½ in. mitred ⅝ in. into door posts, secured by 8 No. 18, 2½ in. screws. Floor tightly fitted to braces and standards.		
DRAWBARS.		
Description, Cast Iron.....		
Spiral springs,—sample supplied.		
2 Heads, Cast Iron. Length.....	2	5½
2 Spiral Springs. Length 7 in. diameter ...	.....	6
4 Spring Plates. Wrought Iron, Thickness..	.....	1½
Spring strap is wrought iron 3 x 1 and is secured to head by turning ends down and riveting with three ¾ in. rivets. Spring plates are held by cast iron brackets and wrought iron straps as shown on drawing each having three ¾ in. bolts. The whole is attached to guides of white oak 9½ ins. deep x 4 ins. being each secured to centre timbers by 4 bolts ¾ in. dia. each drawbar to have a wrought iron coupling pin with rivet in end to prevent it being lifted out.		
One coupling link to be supplied for each car, of 1½ in., round iron.		

No.		Feet.	Inches.
2	<b>BUNTER HEADS.</b>		
	Description, Oak faced with iron.		
	4 plates $\frac{1}{2}$ in. thick 10 in. x 9 in., secured by 4 $\frac{1}{2}$ in. rivets. 4 bolts 1 in. dia., 2 to bolster and 2 to head stock having a plate $2\frac{1}{2}$ in. x $\frac{1}{2}$ in. connecting bolts.		
	<b>BRAKES.</b>		
	Description outside on 1 Truck, Oak beam with cast iron shoes.		
4	Slings .....dia. ....		1 $\frac{1}{8}$
4	Sling Supports..... do. ....		$\frac{3}{4}$
4	Safety Links..... do. ....		$\frac{3}{4}$
4	Toggle pins 10 in. long..... do. ....		$\frac{3}{8}$
2	Beams oak 5 ft. 5 in. long.....	$6\frac{1}{2}$	x $3\frac{1}{2}$
2	Shoes.....Surface. ....	3	x $1\frac{5}{8}$
2	Brake Rods.....dia. ....		$\frac{3}{4}$
1	do Shaft..... do. ....		$1\frac{1}{4}$
1	do Wheel ..... do. ....	1	3
	The ladders and steps, roof and side handles, ticket box and other details are shewn on drawing. The brake shaft to be secured by a wrought iron step bracket—(section $2\frac{1}{2}$ in. x $\frac{5}{8}$ in.)—fastened to head stock by one joint bolt and 2 bolts $\frac{1}{2}$ in. dia. Shaft is also held by a cast iron bracket secured by two $\frac{3}{4}$ in. coach screws in position shown, and at top by a cast iron bracket secured to arch rail by two $\frac{5}{8}$ in. bolts and two $\frac{5}{8}$ in. coach screws having a ratchet wheel catch all complete.		

### PAINTING.

All tenons and mortices to be thickly painted with white lead. Outside of car must have 4 coats best oil paint,—2 of white lead and 2 of permanent buff colour,—this with lettering to equal best Grand Trunk Cars. All iron work to have one coat good black paint, and wood of truck 2 coats of approved colour. The tare of car to be painted on both sides, in position according to instructions, as "Tare—lbs." The size of letters and figures  $2\frac{1}{2}$  in.

Trucks will be supplied by the G T. R. at any point on their line in Canada, as desired; the Contractor will unload the trucks (in case they are not shipped on their own wheels) and place the bodies upon them.

FORM OF TENDER  
FOR  
BOX CAR BODIES.

..... do hereby agree to supply the Grand Trunk  
Railway Company with.....  
Box Car Bodies and ~~place them on Trucks~~, in accordance  
with the Specifications, &c., free of all claims for Patent  
Right, Royalties, &c., for the sum of .....,  
.....  
for each Car.

Signed,.....

..... Witness.

To be delivered at ....., free  
of transit charges, on or before ..... 187

*Tenders to be endorsed "Tenders  
for Box Car Bodies"*

