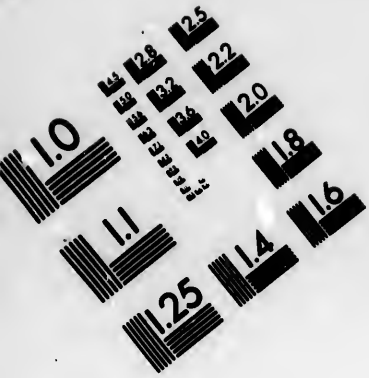

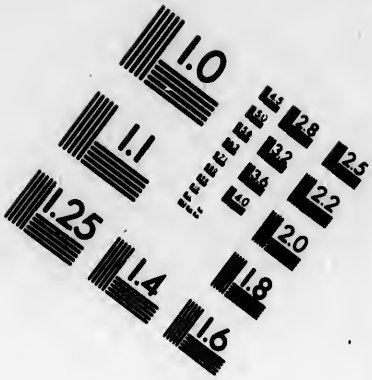

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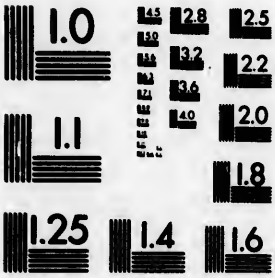

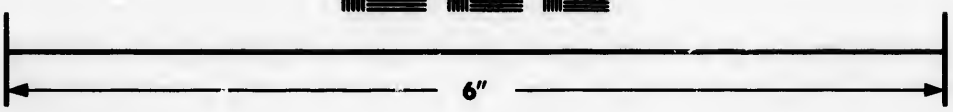

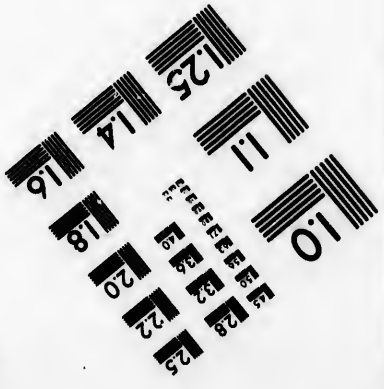

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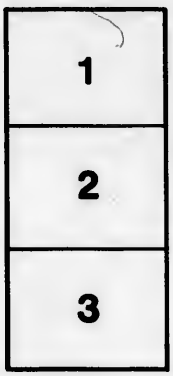
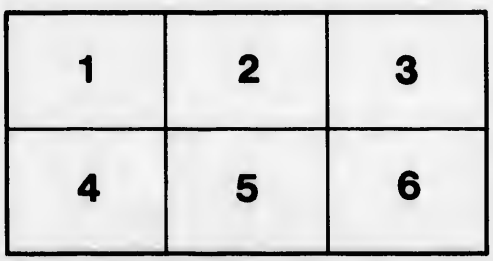




Canadian Pacific Railway Company of Canada.

SPECIFICATION

OF

33-FOOT CATTLE CAR.

GENERAL DIMENSIONS.

Length of Car outside of Sills, 33 feet.
Width of Car outside of Sills, 9 feet.
Height of Car from bottom of Sill to top of Plate 7' 10".
Door opening, 5 feet.

2 Side Sills,	White Oak, Tamarac or Georgia Pine,	5″ × 9″ × 32'-7″.	
2 Intermediate Sills,	" " "	4½″ × 9″ × " "	
2 Centre Timbers,	" " "	4½″ × 9″ × " "	
2 Top Plates,	" or Norway Pine.	4″ × 5″ × 33'-0″.	
2 Headstocks,	"	5″ × 9″ × 9' 0″.	
2 Transoms,	"	4″ × 8″ × 9' 0″.	
2 Body Bolsters,	"	14″ × 5″ × 9' 0″.	See Drawing of Iron Bolster.
4 Corner Posts,	"	4½″ × 5″ × 6' 8″	between shoulders.
4 Door Posts, (Side)	"	4″ × 4″ × 6' 8″	" "
4 Posts, (Side)	"	3½″ × 2¾″ × 6' 7½″	" "
16 Intermediate Posts (Side),	White Oak	3½″ × 2¾″ × 6' 8″	" "
4 End Posts,	White Oak	3½″ × 2¾″ × 6' 8″	" "
12 Side Braces,	"	6″ × 1¾″	
4 End Braces,	"	4″ × 1¾″	
4 End Door Posts,	"	3½″ × 2½″ × 6' 8″	" "
2 Arch Rails,	"	3″ × 12″	
4 Cantlines,	"	2″ × 11″	
2 Purlines,	Norway Pine.	2¼″ × 2½″	Full length of car.
1 Ridge Rail,	"	4″ × 3½″	" " "

Slats, all round except past doors, White Oak, 1″ thick, 5″ wide.
Belt Rail, all round except past side doors, 7″ × 1¾″.
2 Name Plates, 1″ × 13″ × 14' 0″ long.

End of Car to be sheeted with first quality Pine sheeting, ⅞″ thick, laid vertically, tongued and grooved, matched and beaded.

Inside sheeting on end horizontal.

TIE RODS.

4	Tie Rods	through outside sills and intermediate pillars and top plates,	⅝″ diam.
4	"	through outside sills and top plates, near corner posts,	⅝″ "
4	"	through outside sills and top plates, near side door posts,	⅝″ "
4	"	through headstock and arch rails,	⅝″ "
4	"	from corner post to first post on side,	⅝″ "
2	"	through side plates along car-lines, dividing the car into three equal spaces	⅝″ "
2	"	through corner posts, and pass across end of car to belt rail	⅝″ "

TRUSS ROD FRAME. Two wrought-iron bent truss rods $1\frac{1}{8}$ in. diameter, each in two pieces, with screwed ends $1\frac{3}{8}$ in. diameter, are on outside of intermediate timbers. The ends of each half of truss at centre of car to be connected by a double-headed nut or turn-buckle at least nine inches long, and at alternate ends screwed with right and left hand thread. In the course of rods from the centre towards end of car, they pass under cast-iron shoes on under side of transoms, then over shoe on top of packing-pieces on top of bolster (so as to be close to floor) and then through the head stock, which is provided with cast-iron washers $7'' \times 4'' \times \frac{7}{8}$ in. thick, having inclined faces to give proper bearing to face of truss nuts. All shoes for rod are secured in place by the paps or pins cast on them being tightly driven into shallow holes drilled in timber. The packing-piece over bolster extends only from sill to intermediate, and is secured to bolster by $\frac{3}{8}''$ wrought iron spikes.

FRAMING. Side sills, centre floor and intermediate timbers framed to end sill by double tenons $2\frac{1}{2}''$ long as follows: Commencing at top $1\frac{3}{4}''$ shoulder, $1\frac{1}{2}''$ tenon, $2\frac{1}{2}''$ space and $1\frac{1}{2}''$ tenon and $1\frac{3}{4}''$ shoulder. Headstock fastened to side sill at each corner by one $\frac{3}{4}''$ joint-bolt 12" long. Headstock fastened to centre floor timbers by two $\frac{3}{4}''$ joint bolts 12" long. Headstock, centre and intermediate timbers placed as shown in drawing.

Centre of Bolster 4' $10\frac{1}{2}''$ from outside of Headstock. The distance from outside of end sill to centre of Transoms, 13' 7".

The headstock and side sill to be secured at each corner on inside by inside corner casting, and on outside by wrought iron plate $\frac{3}{8}''$ thick (see drawing), which are fastened on by four $\frac{3}{4}''$ bolts at each corner.

Transoms to be gained 1" for centre and intermediate floor timbers, and fastened to side sills, intermediate, and centre floor timbers with one $\frac{5}{8}''$ bolt to each timber.

Door, end, and intermediate posts framed with tenons, 2" long at top and $2\frac{1}{2}''$ at bottom, all 1" thick and of the full width of each of the various posts, and to have 1" shoulder on outside, fitting tightly into their various mortices, set perfectly vertical and parallel with each other.

Top plates secured to Archrails by one wrought-iron knee strap at each corner made out of $2'' \times \frac{3}{8}''$ iron, each secured by two $\frac{1}{2}''$ bolts, one on each side, which also go through inside corner casting and secure the same.

Archrails and Carlines to be framed into top plates by double tenons 1" long, as follows, flush with bottom of top plates. Commencing at bottom, 1" shoulder, $\frac{7}{8}''$ tenon, $1\frac{1}{4}''$ space, $\frac{7}{8}''$ tenon, and 1" shoulder; each end secured to plates by one $\frac{1}{2}''$ joint-bolt 9" long.

The belt rail which runs all round car, except past the side doors, is secured to posts by two, and to braces and intermediate posts by one $\frac{1}{2}''$ cup-headed bolt, except where door slides, where they will have countersunk heads; belt rail also to be fastened to ~~corner~~ posts by one $\frac{1}{2}''$ joint bolt 9" long; also short $\frac{5}{8}''$ rod from corner post to first post on side; belt rail to be framed as follows: checked for intermediate posts $\frac{1}{2}''$, the posts being checked for belt rail $\frac{1}{4}''$, and belt rail checked for braces $\frac{1}{2}''$, and brace checked for belt rail $\frac{1}{4}''$, which brings inside of belt rail flush with slats. Posts at bottom framed to receive cast-iron pocket resting on sill. Braces to be furnished with cast-iron shoe or pocket, which allows end of braces to be cut square, as shown in drawing. Intermediate posts, checked $1\frac{1}{4}''$ for braces, and brace checked for post $\frac{1}{2}''$, which brings inside of brace flush with intermediate post.


BODY
IRON BOD
BOLSTER
CENTRE PINS.
DRAW BARS.

BODY BOLSTER. The body bolster is checked for centrals and intermediates $\frac{1}{2}$", they being checked for bolster $1\frac{1}{2}$" and secured to all longitudinals by two bolts $\frac{5}{8}$" dia., except at centre, where they are $\frac{3}{4}$"; the heads of these latter bolts will be flush with top of floor and received in cast-iron socket washers $1\frac{3}{4}$" high × $2\frac{1}{4}$" diameter.

Each bolster is strengthened by two bent truss rods, $\frac{7}{8}$" dia. wrought iron. They pass inclined upwards through bolster ends, and when clear of bolster through intermediate longitudinals and then over cast iron brackets, taking bearing on top of central timbers and king-pin packing piece. These four cast iron brackets are set close to the outside of each central, the base resting on the bolster, and it is kept in place by two $\frac{5}{8}$" bolts passing through king-pin block and central timber. Instead of separate washers for each nut of truss rod, their place is occupied by a cast iron plate covering the bolster end, having a lip on under side and inner edge to clip the bolster, a bead moulding on outer surface, two holes cast through for passage of rod ends, and raised inclined faces around the hole to give square bedding face for truss nuts.

IRON BODY BOLSTER. Wrought iron bolster will consist of two plates, top plate $\frac{7}{8}$"×6"×9′ 0" long, and bottom plate 1"×6"×8′ 8" long.

4 Friction castings (as per drawing).
8 Pillar " " "
4 Distance " forming shoe for draw bar timbers (see drawing).
2 Top crown plates (see drawing).
8 Bolts $\frac{3}{4}$"×$11\frac{3}{4}$" long,, through side sills.
8 " $\frac{3}{4}$"×11" " " intermediates
8 " $\frac{3}{4}$"×$17\frac{1}{2}$" " " crown plate distance casting and central timbers.

CENTRE PINS. Centre pins to be made of $1\frac{3}{4}$" round iron, 2′ 5" long under head, with good solid heads resting on floor and covered by a 5" square plate $\frac{3}{8}$" thick, flush with top of floor, plate to be secured by four $1\frac{1}{2}$" No. 18 screws.

DRAW BARS.

2 Drawheads of cast iron, length 2′ $5\frac{3}{4}$". Holes to be drilled, not cored out.
2 Spring straps or tail plates of wrought iron, 3"×1".
6 Strap rivets, per car, $\frac{7}{8}$" dia.
2 Spiral or coiled steel springs, $6\frac{1}{2}$" dia.×7" long.
3 Coils in each spring, section of metal in each, $\frac{11}{16}$"×$1\frac{1}{16}$", $\frac{11}{16}$"×$\frac{1}{2}$", $\frac{5}{8}$"×$\frac{3}{8}$".
4 Spring plates with centre paps, of wrought iron, $6\frac{1}{8}$"×$6\frac{7}{8}$"×$1\frac{1}{8}$" thick.
8 Cast iron shoulder brackets bolted to oak guides, $1\frac{1}{8}$"×$6\frac{1}{2}$"×$7\frac{1}{4}$".
24 Bolts per car, for shoulder brackets, $\frac{3}{4}$" dia.×$6\frac{1}{2}$" full, long.
8 Plate guidesfrom back to front shoulders, of wrought iron, $\frac{1}{2}$"×$1\frac{3}{4}$"×$14\frac{1}{4}$".

DRAW BARS. *(Continued.)*

8 Bolts for plate guides to shoulder brackets, $\frac{3}{4}$" x $9\frac{1}{8}$" full long.
4 Guides bolted to centrals, of white oak, $4\frac{1}{2}$" x $7\frac{1}{2}$".
16 Bolts for same, $\frac{7}{8}$" dia. x 1' $7\frac{1}{2}$" long, with double nuts.
12 Thrust keys for same, of cast iron, 3" x $1\frac{1}{2}$" x 4", hollow box.
20 Cast iron washers for these bolts (heads flush with top of floor), $1\frac{3}{4}$" high x $2\frac{1}{2}$" dia.
2 Coupling pins, wrought iron, with rivet in end, 9" long from shoulder and 2" x $1\frac{1}{2}$" oval section.
1 Coupling link 11" long inside, $1\frac{1}{4}$" x $1\frac{3}{8}$" D Section.
4 Draw bar strap bolts which pass through bunter heads and guides bolted to centrals, $\frac{7}{8}$" x $17\frac{1}{2}$" long, double nuts.
4 Draw bar strap bolts through bunter heads, $\frac{7}{8}$" x 17", double nuts.
2 Bunter heads, of white oak, 2' 3" x $8\frac{3}{4}$" x 5".
4 Long bolts for bunter heads to bolsters, 1" dia. x 6' 2", hooked round top plate of iron bolster, and other end secured to bunter head with nut.
4 Short bolts for bunter heads to head stocks, $\frac{3}{4}$" dia. x 12" long.
Height from rail to centre of draw bar, 2' 10".

BRAKES.

Brakes are carried from frame of car, are on outside of wheels, and are used on one truck only of each car.

4 Sling supports, wrought iron bolts, $1\frac{1}{2}$" dia., which pass through side sills and intermediates.
4 Ferrules or distance brackets for same, of wood.
4 Washers on same for safety links, cast iron (see detail).
4 Slings, of wrought iron with bent eyes, 1" dia.
4 Safety links, of wrought iron, $\frac{3}{4}$" dia.
4 Toggle pins in beam, of wrought iron, 10" long x $\frac{7}{8}$" dia.
2 Beams, of oak, $3\frac{1}{2}$" x $6\frac{1}{4}$" x 5' 8".
4 Brake heads, of cast iron, 15" x 3".
4 Brake shoes, of cast iron, 15" x $3\frac{1}{2}$" x $1\frac{1}{4}$", with three holes for bolts in each.
4 Bolts for heads, $\frac{5}{8}$" dia. x $3\frac{1}{2}$" long, with counter-sunk heads.
4 " " $\frac{5}{8}$" " x 7" " " " " "
8 " " $\frac{5}{8}$" " with square heads.
1 Lever, of wrought iron, $\frac{3}{4}$" x $2\frac{1}{2}$" x 2' 6" centres.
1 Lever crotch, of wrought iron, $\frac{3}{4}$" x 2", with end $\frac{7}{8}$" dia. x $9\frac{1}{2}$" long.
2 Horizontal brake rods, of wrought iron, $\frac{3}{4}$" dia.
2 large washers, of cast iron, for lever crotch.
8 small washers, of cast iron, for beam ends.
1 Beam stirrup, of wrought iron bent, $\frac{5}{8}$" dia. x $8\frac{3}{4}$" long inside, with two-holed wrought iron plate.
1 Upright shaft, of wrought iron, $1\frac{1}{4}$" dia., and $1\frac{1}{2}$" dia. at bottom.
1 Brake wheel, of cast iron, 15" dia., $1\frac{1}{8}$" rim, with curved spokes.
Top bracket for shaft, cast iron, which is secured on top of roof (see detail). Pall is secured to this bracket by wrought iron stud.
Lower bracket for shaft is formed by the projection of the draw bar strap.
1 Rachet for each shaft, $4\frac{3}{4}$" dia. x 1" deep, with pall.
2 Bolts for top shaft bracket, $\frac{5}{8}$" dia.
1 Cast bracket on headstock, supporting brake shaft.

FLOORING.

Georgia pine flooring $1\frac{3}{4}$" thick, not over 6" wide, planed, tongued and grooved $\frac{7}{8}$" from face; tongue $\frac{3}{8}$" x $\frac{3}{8}$", edge rounded.

Floor to be nailed with twenty-penny cut nails, two in each floor timber, in all pieces over 4" wide, to be put down crosswise of car; all pieces to be of full length and to project $1\frac{1}{2}$" outside of sill, and to be bevelled $\frac{1}{4}$", commencing outside of slats, except in doorway, and a bevelled piece well fastened to sill in doorway to support the end of flooring, as shown in drawing. Flooring to be tightly fitted around posts and braces.

ROOF.

SIDE
SLIDIN
DOO

END
SLIDING
DOO

2-1½" wide and to be made of three planks of clear red pine 8"x1½" full length of car with 8" space between each and to be secured on timblocks cut to fit roof of car as shown in drawing.

3" 11 5

ROOF. The roof is "hipped" form and covered with two thicknesses of first quality pine sheeting, ¾" thick and about 5" wide, the upper course breaking joint with the lower, and having two grooves ½" wide x ¾" deep, and ¾" clear from edge of board, cut in each board, viz., on the upper side of the lower course and upper side of upper course, to act as water channels, great care to be taken to make good joints at point of roof; all joints and bedding surfaces to be thickly coated with white lead paint; the upper surface of lower sheeting and lower surface of upper sheeting to be painted with thick white lead before second sheeting is nailed down in place; wrought iron nails to be used, 2½" in lower course and 3" in upper course. Running board to be ~~26" wide and to be of two course of first quality sheeting, similar to roof, with grooves, and laid crossways of car.~~ Ends of running board are to project over car 6", the projecting portion to be well and strongly secured by two stout wrought iron brackets 1½" wide x ¼" thick, bolted through sheeting to end plate. Roof cornice as shown in drawing. Joint of roof to have three coats of white lead paint under canvas, which is 1'-11" wide and nailed on. Canvas to be well painted with white lead on outside

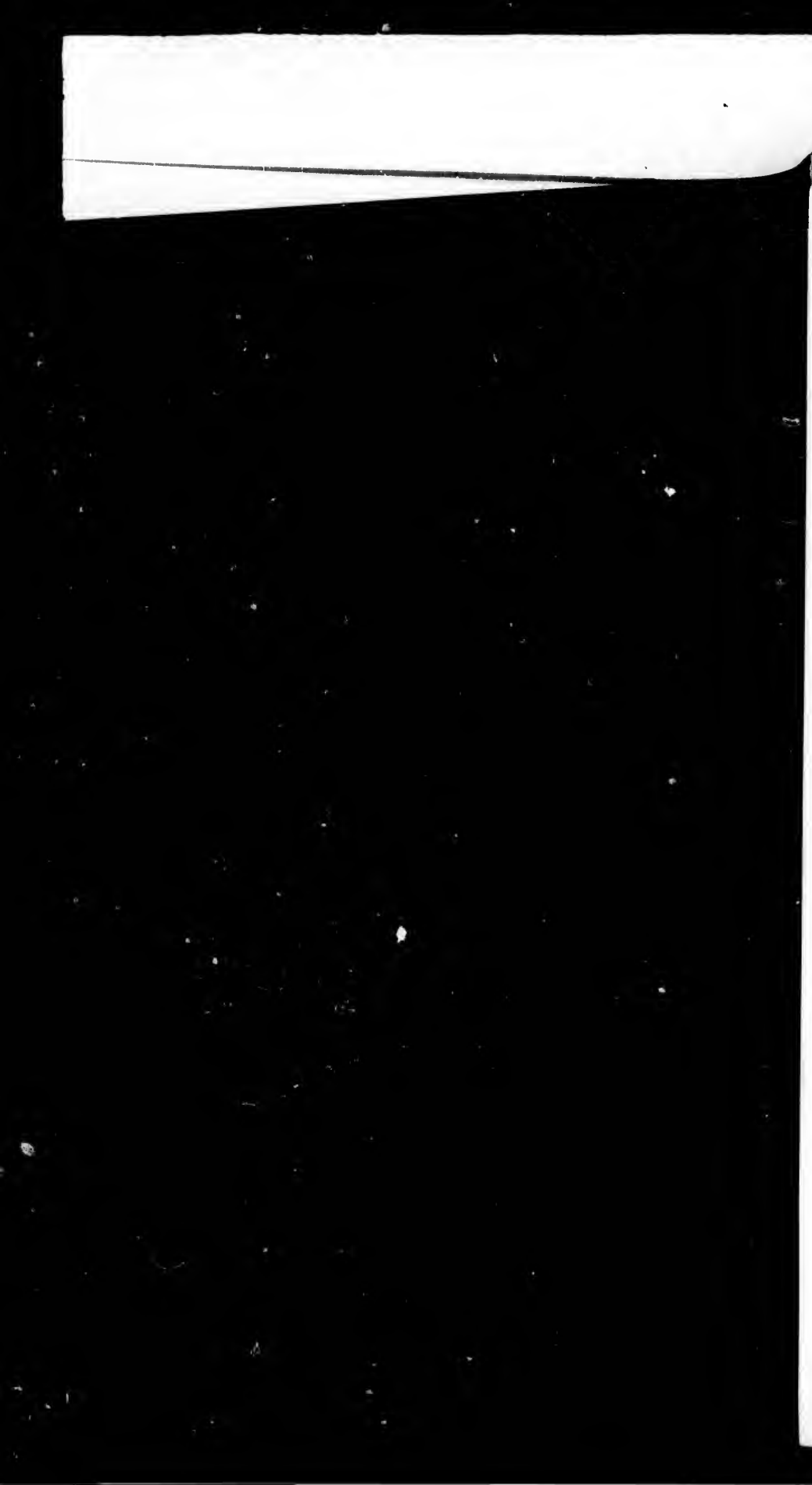
SIDE SLIDING DOORS. One on each side of car.
Door opening to be 5' 0" wide.
Size of door frame outside, 6' 5½" × 5' 2".
2 Top Rails, White Ash, 6" ×1¾".
4 Intermediate Rails, 3½" × 1¾".
2 Centre Rails, White Ash, 6" × 1¾".
2 Bottom Rails, White Ash, 7" × 1¾".
4 Stiles or Uprights, White Ash, 5" × 1¾".
2 Door-Stops, White Ash, 2½" × 1⅞".
15 Wrought-iron Bars, ⅝" dia., spaced not more than 2½" between bars to run through centre and intermediate rails, and buried 1½" into top and bottom rails.
2 Door Sill Plates, 5' 0½" × 4" × ¼", each end mitred ⅛" into door post, and secured to floor by eight wood screws 1½" long, No. 18.

Outside doors to be supported at top on bar of wrought iron 1¾" × ½", set on edge and each bar blocked out with five castings for that purpose, and fastened with ½" countersunk-head bolts through top plate, and having back end of slide bar bent and bolted to top plate to form stop. Door hangers to be clip hangers, of wrought iron 2½" × ½", and fastened to top of door with three ½" countersunk bolts. Door to be hung one inch clear of flooring and framed as follows: rails morticed into stiles by ½" tenons top and bottom through the stile. Intermediate tenons ½" × 2½" pegged.

END SLIDING DOORS. Each end of car to be fitted with sliding door for loading rails and lumber; each of these doors to be provided with two slide castings, secured to bottoms of stiles by four wood screws, No. 18, 1½" long, which slide on wrought-iron bar 2" × ½" set on edge and blocked out with five block castings secured to headstock by ½" bolts. End of bar at corner of car to be bent to form a stop for door when door slides open.

Each door framed as follows: One-half panelled with first quality pine sheeting tongued and grooved and beaded, and the other half open.
Door opening, 1' 10" wide.
Size of Door, 6' 7½" × 3' 6".
2 Top Rails, White Ash, 6" × 1¾".
4 Intermediate Rails, White Ash, 3½" × 1¾", across open half of doors only.
4 Centre Rails, White Ash, 6" × 1¾", one on panelled half, and one on open half of doors.
2 Bottom Rails, White Ash, 7" × 1¾".
4 Stiles or Uprights, White Ash, 5" x 1¾".
2 Mullions or Centre Uprights, 5" x 1¾".
4 Wrought-iron Bars, ⅝" dia. in open half of doors, running through centre and intermediate rails, and buried 1½" into top and bottom rails.
2 Cast-iron Sill Plates, 4½" wide, as per drawing.
2 Wrought-iron Sill Plates on Belt Rails in doorway, 1' 10½" long x 4" wide x ¼" thick, and mitred ⅛" into door posts.

Top of door to be kept in place by a wooden slide, which is secured to car by five ½" bolts, having cast-iron buttons under heads, which come flush with bottom of wooden slide.


DOOR
FASTE
STEPS A
HAN
SLATS.
TRUCKS.
WHEELS
and AX

DOOR FASTENERS. As shown on drawings, with hooks, pins and chains for the same. Centre fasteners on side and end doors to be secured by two $\frac{1}{2}$" rivets in each fastener, as shown on detail drawing.

STEPS AND HANDLES. Each end of car to be furnished with five wrought-iron steps, secured on one end to end-door stop, and on other end to ladder post by $2\frac{1}{2}$" x $\frac{1}{2}$" coach screws. Ladder post to be secured to corner post by three $\frac{1}{2}$" coach screws $4\frac{1}{2}$" long. The bottom step to have an offset of three inches, and to be placed as shown in drawing, corners of car at steps to be furnished with wrought-iron handles 14" from centre to centre of holes. Distance from bottom of sill to centre of handle 2' $5\frac{1}{2}$".

SLATS. White Oak Slats, 5" wide, placed according to drawing and fastened to post with three $2\frac{1}{2}$" No. 7 barbed wire nails in each piece at each post, nails to be placed diagonally across same.

TRUCKS. Trucks are of the four-wheeled lateral-motion type, with swing bolster having the "master car builders' standard" (M.C.B.S.), axle-box and bearing.

WHEELS and AXLES. The wheels supplied with these cars are to comply with all the requirements of the separate drawings and standard wheel-specification under which all car wheels are now being supplied to this Company; the date to be properly cut on each wheel and axle when the car is complete and ready to be turned out of the shop. The axles are to be the Master Car Builders' Standard, and to be sound, clear forgings of approved metal and manufacture, carefully turned, so that it will require a hydraulic pressure of not less than thirty-five tons, or more than fifty tons, to force them into the wheels. Each pair of wheels must be of exactly the same circumference, and each must be of equal distance from the edge of its nearest journal, so as to give each wheel flange $\frac{3}{8}$" clearance from the inner edge of rail head when it is running on the track. The bars in the side frame to be carefully bent to gauge, and all holes drilled to gauge, so that when put together the various holes will be perfectly in line and the whole interchangeable. The ends of bent and straight bars to be neatly finished flush with each other. In addition to the double nuts on the axle-box bolts, they are further secured by a $\frac{3}{16}$" round split pin passing through below the nuts. The thread screwing on bolt is not to run more than $\frac{1}{8}$" up into the lower bar of side-frame. Before truck staples and axle-box nuts are put on, a piece of sheet iron will be put on bolts long and wide enough to turn up on side of nuts to secure them against working off.

	No.	Size.
Distance of wheel centres apart		4' 10"
Top bars for side frames, of wrought-iron	4	$1\frac{1}{8}$" x 3" x 5' 11"
Second " " " " "	4	$\frac{5}{8}$" x 3" x 5' 11"
Third " " " " "	4	1" x 3" x 5' 11"
Fourth " " " " "	4	$\frac{5}{8}$" x 3" x 5' $9\frac{3}{4}$"
Extreme length when bent with ends flush		5' $9\frac{3}{4}$"
No., diameter and trend of cast-iron wheel	8	33" x 4"
Axles of wrought-iron, size of journals 7" x $3\frac{3}{4}$" x 6' 3" centres		M.C.B.S.
Wheel-seat, middle diameter and total length		M.C.B.S.
Axle-box wedges and covers, of cast-iron		See drawing.

	No.	Size.
Composition bearing, approved mixture (weight 10 lbs.)	8	6¾″ x 1″ thick, lead lined
Bolts for axle-box with double nuts and split pin	16	1″ dia. x 15¼″ long.
Bolts for top-bars to cross-frame	8	⅝″ x 14″ long.
Stirrup-bolt for side-frame to cross-frame, bent	8	⅝″ x 1′ 7½″ inside.
Stirrup-blocks, grooved at sides, of white oak	8	4⅛″ x 4″ x 3″
Washer plate for stirrup, of wrought-iron	8	6″x⅝″x3″ } Sheet iron under nuts, edges to be turned up when nuts are tight.
Number, size and centres of holes in same	3	1⅜ dia. x 1⅞″ centres.
Brackets to connect side and cross-frame, of cast iron	4	1′ 11″ x 9″ x 1″ thick.
Cross or transverse frame, of white oak	4	4¾″ x 9¼″ x 7′ 3″ long.
End distance-piece for same, of white oak	4	12¾″ x 8¼″ x 3″.
Check on same running into transverse	2	2″ wide x ½″ deep.
Bolts for same	4	⅝″ dia. x 1′ 10½″ long.
Shoes for swing-pins, of cast iron (recessed)	8	6″ x 3¾″ x ⅝″.
Couch screws for these shoes	16	½″ dia. x 3″ long.
Rubbing-pieces on cross-frame, of cast iron	8	4″ wide x ½″ thick.
Bolts with countersunk heads for same	16	½″dia.x5⅞″ long over head
Swing-beam or truckbolster, of white oak	2	10″ x 10″ x 5′ 9″ long.
Centre-casting	2	1′ 3″ x 9″ x ⅞″ flange.
Bolts for same, with double nuts	8	¾″ x 15″ long.
Side-rubbing pieces at centre, of oak, well nailed	4	1′ 6″ x 9″ x ⅞″ thick.
End rubbing-pieces with double lips, of cast iron	8	4″ wide x ½″ thick.
Wood screws for same	32	No. 18 x 2″ long.
Friction roller, as shown in drawing	4	
Bolts securing chair and rubbing-piece	8	⅝″ dia. x 12″ long.
Coil springs, if used	12	2 coils in each spring, outside coil 1″ dia., inside coil ⅝″ dia.; 6″ dia. x 7″ long. Scott's Keystone Springs
Spring seat castings	8	See drawing.

If elliptic springs are used they will be 23″ centres, 11″ over buckles, having five leaves each 4″ wide and kept in place by 16 wrought iron clips 1½″ x ¼″ thick (see drawing).

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	No.	Size.
The underside of swing-bolster and top of spring-board are slightly checked for spring buckle and spring clip, also the underside of spring-board is checked to keep lower swing-pin in place.		
Top swing-pin, of round wrought iron	4	$1\frac{5}{8}$" x 1' $5\frac{1}{4}$" long.
Lower swing-pin, size at centre, square section	4	$1\frac{3}{4}$" sq. x $9\frac{1}{2}$" between shoulders.
Lower swing-pin, round ends, total length.		1' $2\frac{1}{2}$" long, ends $1\frac{5}{8}$" dia.
Swing-links, of wrought iron, solid forged	8	2' full length inside of links. Section 1" sq.
Swing-links are bent out of 1" square iron, and at end or centre of curve, where welded, are increased to thickness of about $1\frac{5}{8}$".		
Centres of swing-links, measured transversely		3' 10" apart.
Split-pins for lower swing-pin	8	$\frac{1}{2}$" dia. x $3\frac{1}{2}$" long.
Washers for lower swing-pin, of wrought iron	8	3" dia. x $\frac{1}{4}$" thick.
Spring-boards, of white oak	2	5' 7" x $9\frac{3}{4}$" x 3"
Flat truss rods to trucks	4	3" x $\frac{1}{2}$"

Truss to be set down in centre $4\frac{1}{2}$". Distance between lugs inside 6' 6" when bent. Ends to be turned over and welded to form the lugs. Length of lugs, $1\frac{1}{2}$"; 4 truss bolts, $5\frac{1}{2}$" over heads, 1" diam., with double nuts; 8 castings for the same as shown in drawing.

When the trucks are turned out of shop, their axle-boxes must be carefully packed with cotton waste, fully saturated with best petroleum or other good lubricating oil.

At all points where timber is bedded against timber or iron, the two surfaces are to be thickly coated with white lead. All tenons and mortices to be thickly painted with stiff white lead before being framed together.

PAINTING. Outside of frame of car is to have four coats of best oil paint, two being of white lead and two of permanent buff colour. All the iron work is to have one coat of good black paint, and the wood of truck two coats of approved colour. The car is to be weighed and the tare painted on both sides of car at lower right hand corner in $2\frac{1}{2}$" letters and figures, as "Tare 22,250 lbs."

GENERAL CONDITIONS OF CONTRACT.

GENERAL CONDITIONS. The cars and trucks are to be made exactly to the dimensions and conditions given in the specification, according to the drawings, and exactly similar and equal in all respects to the samples and models supplied. Each variety of timber used is to be of first quality of its kind, dry, sound, free from large knots, shakes, or any sign of decay, well and fully seasoned, and accurately fitted and joined together. The wrought iron is to be of "Best Staffordshire," or of equal and approved quality; all welds and joints to be carefully made, the forgings to be sound and neatly finished. The ordinary castings to be made from tough grey pig iron; they are to be sound, smooth, free from sand holes, blow holes or scoria, and perfect in shape, size, and every other respect. All the bolts and nuts used are to be of full diameter, screwed to "Whitworth's standard thread;" all the threads to be clean and full, so that the nuts will not shake; all bolt holes to be fair, opposite and

perfectly circular, the bolts to be a tight driving fit through all timber, and, wherever possible, bolt heads are to be on outside, and on top of the material through which they pass.

The contractor is to find, provide, fix and perform, with the best materials of their several kinds, all and every part of the works herein specified, or represented on the drawings, or that may not be indicated but is generally implied and understood in the full equipment of Railway Cattle Cars and Trucks, and are to be fitted and finished in the most complete manner, to the entire satisfaction of the Company's Mechanical Superintendent, or his appointed Agent or Inspector, all of whom shall be allowed to inspect the work during working hours, and shall have the power to reject the whole or any part found to be defective in quality of material or workmanship, or not in accordance with the specification, the drawings, and the samples or models supplied. And should there, by oversight, be any error or discrepancy between the various drawings, models, samples, and the specification, the Mechanical Superintendent is to decide what is the correct reading and original intention of the same, his decision to be final and binding on both parties of the contract.

All metal work, including the springs, axles and wheels, are 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.

C. P. RAILWAY,
Office of the Mechanical Supt.,
Montreal.

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Mechanical Superintendent.

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Form of Tender for Cattle Car Frames and Trucks.

..... do hereby agree to supply the

CANADIAN PACIFIC RAILWAY COMPANY

..... with

Cattle Car Frames on .....

Trucks with.....

.....

in accordance with the Specification and Drawings, &c., free of all claims for Patent Right Royalties, &c., for the sum of .....

per Car, with its Trucks, &c., all complete.

(Signed,) .....

..... *Witness.*

To be delivered on C. P. R. Track at .....

free of all transit charges, on or before .....

.....

Tenders to be addressed .....

..... and endorsed "Tenders for Cattle Cars and Trucks."