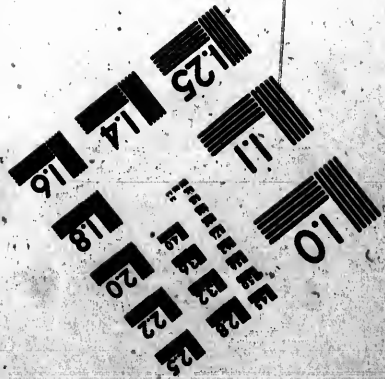
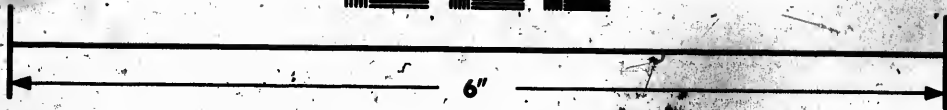


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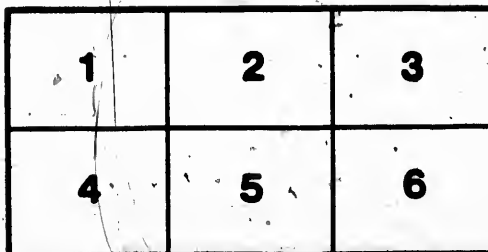
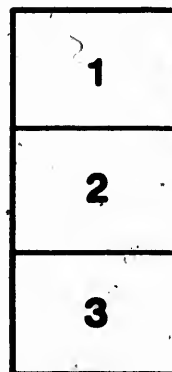
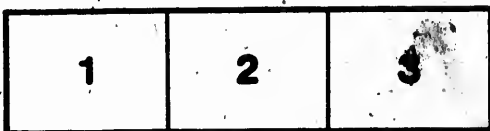
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Great Western Railway.

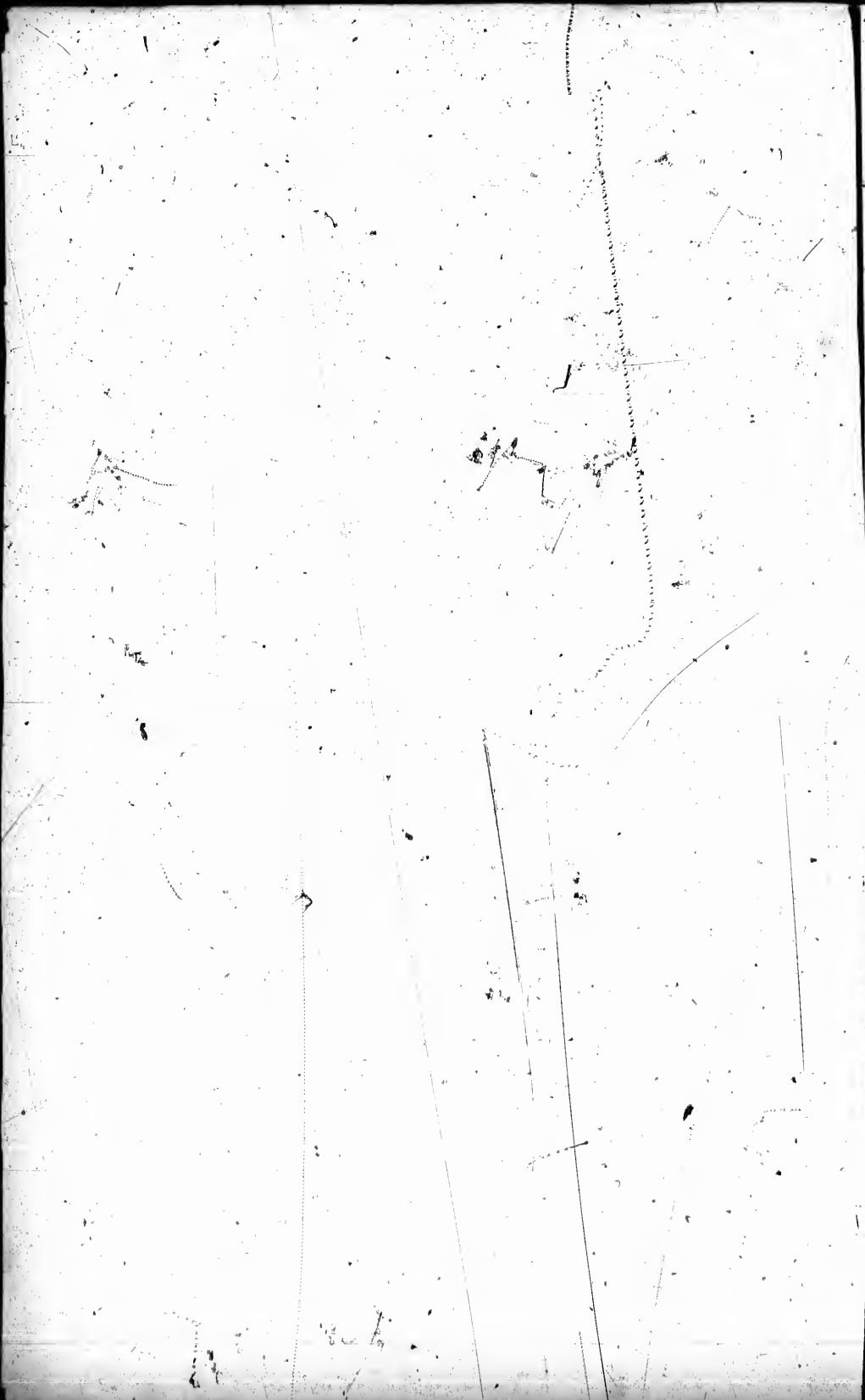
SPECIFICATION

OF A

SIX-WHEELED

S E C O N D C L A S S

CARRIAGE.



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Great Western Railway.

SPECIFICATION

OF A

Six-wheeled Second Class Carriage,

WITH

Five compartments for fourteen Passengers each, and one compartment in the centre for Passengers' Luggage, with hinged seats, so as to be capable of being used for Passengers.

General Dimensions.

	Ft.	Hi.
Extreme length at base	27	9
Ditto width at do.	9	4
Height from floor to under side of top side frames	5	6
Height from floor to underside of roof boards in the centre	6	0

Dimensions of Compartments.

The passenger compartments to be 4-ft. 7-in. from centre to centre of partitions. The centre compartment, for passengers' luggage or for passengers, to be 4-ft. 7-in. from centre to centre of partitions. The end passenger compartments to be 4-ft. 8½-in. each from centre of partitions to outside of ends.

Description and quality of Materials.

The bottom and top sides and bottom end frames, buffer planks and floor bearers, to be of Memel oak, each in one length. The four corner pillars to be of English oak. The floor pillars, standing pillars, and other framing, to be of English ash. The roof, seats and partition boards to be of American yellow pine (the roof boards to be in one length.) The floor boards to be of red deal, 9-in. wide. The panels to be of papier maché.

Bottom Frame and Floor.

The bottom side frames to be 3-in. deep by 7-in. wide at the top, bevelled off to the sweep of the standing pillars, rebates formed in them for the doors to shut against, and for receiving the floor boards, as shewn.

The bottom end frames to be 3-in. deep by 7-in. wide, rebated to receive the floor boards, and morticed for the upright end framing.

The bottom sides and ends to be framed together, as shewn, and secured by strong wrought iron knees inside and a wrought iron angle plate sunk flush outside.

The floor bearers to be 3-in. by 1½-in., morticed into the side frames with barefaced tenons, the shoulders cut bevel and let into the lips of the mortices, according to the detail drawing.

Trimming bearers, 3-in. by 1½-in., parallel with the side frames, to be formed between the others at each wheel, to support the floor where cut away for the wheel cases, and under each buffer plank bracket. The wheels to be 9-ft. 2-in. apart centres.

The flooring to be in two thicknesses of 2-in. red deal, laid crossing each other at an angle of 45-deg. with the sides. The boards to be kept flush with the top of the side frames, and cut to fit closely round the wheel cases. The whole to be closely screwed together and to the floor bearers and rebates.

Side Elevation.

The four corner pillars to be 4-in. square, bevelled to the sweep of the body, and cut under as shewn for the lap of the panels, tenoned into the bottom frames and strengthened by a strong wrought iron knee firmly bolted on each side at top and bottom; the internal corners to be chamfered off from the lining boards.

The standing pillars and door pillars to be straight from the roof to the elbow rails, then swept under 2½-in. Rebates to be formed for the doors to shut against, as shewn. The tenons to have screws through the shoulders to strengthen them, and wrought iron knees bolted to them and to the bottom and top sides and buffer planks. The middle pillars to have grooves to receive the ends of the horizontal partition boards, into which they are to be screwed—the lips of the grooves to have screws through them 6-in. apart, to strengthen them. Thin wrought iron angle plates to be screwed to these boards and to the pillars, at intervals of twelve inches, centres.

The quarter light and elbow rails to be cut to the form shewn, having rebates formed in them for the quarter light frames. All the joints to be strongly screwed and accurately fitted.

The top side frames to be cut to the sweep shewn on the plan, with rebates for the tops of the doors, mortices for the door end middle standing pillars, and notches for the elbow rails and roof sticks.

The quarter lights to be of the height and width shewn and marked on the drawing. The frames to be of the best figured mahogany, 2-in. by 1-in., jointed at the curve in an approved manner, mitred at the corners, and fastened from the inside through the rebates with screws.

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The glass to be of the best plate, free from stains and air bubbles, and not less than $\frac{3}{8}$ -in. thick.

The doors to have sliding lights, with improved spring fittings to prevent their rattling, and ventilators over them—The ventilators to be made with slot openings, with a sliding cover inside, and fastened in an approved manner. The centre compartment to have strong hinged wire guards inside—to protect the glass when used for luggage—to fold and fasten down when used for passengers.

The doors to have brass plating of proper size, and to be made to fit accurately. The under rebates in the side frames to be faced with iron plates $\frac{1}{4}$ -in. thick by the width of the rebates.

The panels for the sides to be of papier maché $\frac{1}{2}$ -in. thick, in one piece from the roof to the elbows, and in one piece from the elbows to the under side of the bottom side frames, and between the doors, and doors and ends, lapping each other at the elbows, as shewn. Brass beading to be fixed along the elbows at the lap and at the centre of the partitions, as shewn.

The panels to be of even and sound surface, and regular thickness, hard baked and well oiled. Great care to be taken in driving the pins, not to damage the surface. The pins are not to be punched under the surface, but left flush and filed off smooth, so as to dispense with putty stopping.

End Elevation.

The bottom-ends to be 3-in. deep by 7-in. wide, with rebate for the floors, mortices for the upright bars, framed into the bottom sides and strengthened as before described at the four corners with iron knees inside, and angle plates flush outside.

A buffer plank of Memel oak, 1-ft. 4-in. deep by 5 $\frac{1}{2}$ -in. thick, to be fitted between the corner pillars at each end and bolted through to the bottom frame and under carriage frame, and strengthened with two strong wrought iron knees each, firmly bolted to the under frame and under carriage frame, as shewn.

The upright bars to be framed between the horizontal bars and end buffer planks. The panels to be of papier maché, as before described. Each end to be in four pieces, mitred at the corners with the side panels, with a brass bead over the joints, in the centre, and across the ends at the lap.

Roof.

The roof sticks to be 2 $\frac{1}{2}$ -in. by 2-in., cut to the proper sweep and flat rounded underneath, notched in the manner shown into the top side frames and strongly screwed thereto.

The boarding to be of 2-in. board, ploughed, tongued and beaded inside, in single lengths, to be covered with good gluing canvass, and two coats marine glue outside, before being covered with the roof cloths.

The roof girths to be of an approved description, in one piece, well strained in laying, turned under the eaves and fastened by the eaves moulding with screws.

Each carriage to have three roof lamps let through the roof in the centre of the partitions, as shewn.

The roof sticks to be framed into trimming pieces where cut away for the lamps

The roof lamps to be of the same size and description as the latest improved roof lamps at present in use on the Great Western Railway, to be provided with all necessary fittings, outside protectors, &c., accurately fitted into place. The edge of the partitions, where cut away, to be padded with horse-hair and faced inside with a moulding.

Partitions and Seats.

The partitions between the compartments to be in two thicknesses of $\frac{3}{4}$ in. board, ploughed, tongued and beaded inside, crossing each other at right angles, vertically and horizontally. The horizontal partitions to be fitted and screwed into the grooves in the middle standing pillars and roof sticks and fastened in addition with wrought iron angle plates, as before described, and secured to the floor by fillets. The boards to be well and closely screwed together. A dog box to be formed under the seats, as shewn. The seats to be worked to the form shewn.

Hinged seats, to turn upwards, to be fitted into the centre compartment, with wrought iron props and thumb screws, with sunk nuts, for fastening them up to the partitions when used to carry luggage.

A hollow pillar to be framed in and screwed to, and an opening cut in the partition, furnished with an iron protector, in the luggage compartment, for the break screw and handle. An opening to be cut in the floor for the break rods passing through, as shewn.

Trimmings.

Strong white leather stop straps, to be screwed to all the doors, and pass through a mortice in the seat-prop inside the standing pillars with approved fastening, to prevent the doors from opening too far.

Strong white leather glass strings, with cut ends, to be attached by brass plates and knobs to all the windows of the second class and luggage compartments.

The space between the ventilator rails in the doors to be covered over with vulcanized India-rubber webbing underneath, so fixed as to press against the top of the glass frame when shut up, to prevent draft.

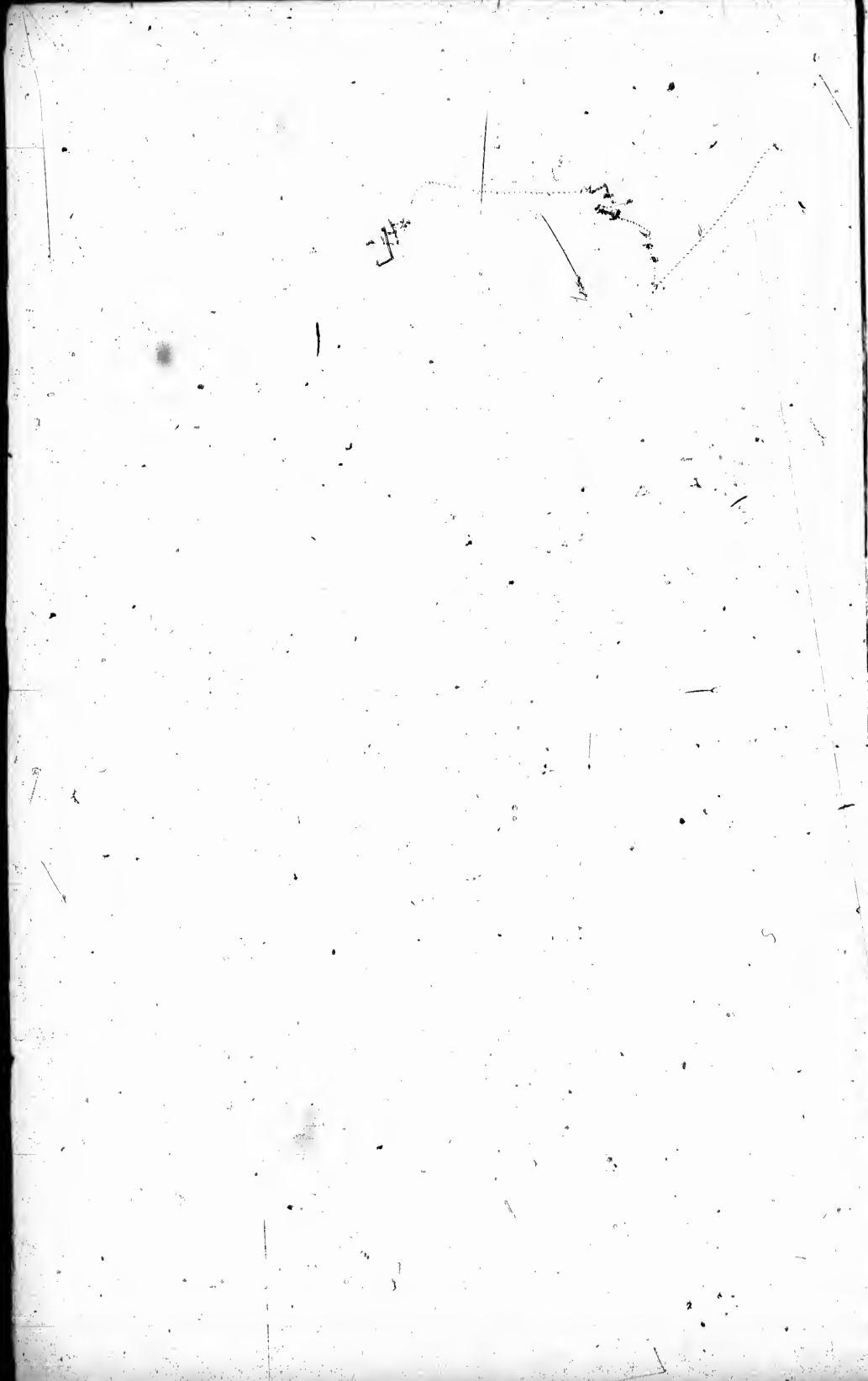
Mountings.

Brass plating to be put on all the doors, and brass beading down the centre, between the compartments and along the laps of the upper panels of the sides and ends, and over the joints of the end panels, as shewn.

Brass commode and door handles, with shield nut inside. Private locks, with brass escutcheons to the key holes, top door handles and side lamp irons. Roof lamps and lamp protectors.

Staples to be fixed to the sides of the carriage, as shewn for attaching "station" label boards.

Brass glass string fasteners.



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Painting and Varnishing.

The whole of the wood work outside to be painted 2 coats tinted zinc color before the panels are put on. The exterior, except the roof, to have four coats zinc white and lamp black, each coat rubbed down with dry pumice stone, seven coats filling up, each coat rubbed down with dry pumice stone, then the whole rubbed down with pumice stone and water, two coats zinc white and lamp black, each coat faced with pumice stone and water; three coats of brown, to sample, the first two coats rubbed down with glass paper, one coat black on the upper panels, then two coats black japan.

The whole to be picked out and fine lined according to instructions, then the whole to have four coats of best copal body varnish, (from an approved maker), the first three coats of varnish to be each flatted; the wire gauze of the ventilators to be painted brown, picked out and shaded as louvres.

The interior of all the compartments to be painted and grained wainscot. The outside of the roof to have two coats of stone color, the edges black; under the seats to be painted two coats brown or stone color, as may be directed.

"Second Class" to be written in gold on the middle door panel of the centre compartment, in 2-in upright Roman capitals. "G. W. R." to be written in gold in 3-in. upright Roman capitals, in the centre of the three middle quarters, one letter on each, and the company's crest on the other two quarters, as may be directed.

Generally.

All the framing materials to be of the best description of their respective kinds, dry and well seasoned and free from sap and other defects; all mortices and tenons to be draw-bored for the pins; all the joints of the wood-work to be put together with white lead and the framing primed before the panels are put on.

The whole of the work to be done in a substantial and workmanlike manner, to the satisfaction of the engineer, who shall have full power to reject all or any such carriages or parts that are not in full accordance with the spirit and intention of this specification; The contract shall include all work necessary to, or implied, in the full carrying out and completing of the carriage, fitting and fixing the body to the under frame, maintaining the work generally, except in cases of damage by accident, in good condition and proper repair for 12 months after the date of completion and delivery.

The carriages to be completed according to Specification, and fitted and bolted to the under carriage frame and delivered to the company on the rails at any of their stations, in equal numbers

and if not so delivered and fixed to the frames within the above periods respectively, the contractor shall forfeit to the company as damages twenty shillings per week per carriage for each week he shall exceed the time specified for delivery.

No advantage to be taken of any omission of details in the drawings or in this specification, as full explanation in detail will be given should any part not be sufficiently shewn or understood.

The terms and conditions of payment to be specified in the Tender

FORM OF TENDER.

_____ of _____

do hereby engage to construct and deliver

Second Class Carriages according to the foregoing Specification, and the

Drawings therein referred to for the sum of _____

for each Carriage;

to be delivered by _____

Payments to be made as follows:

Name _____

Address _____

Date _____

NOTE.—The Form of Tender must NOT be detached from the Specification.



