

WAGON TYPE	COMMODITY
IGA Mk 2 / 3 / 4	Stock Rail 91m 56E1/60E2 108m 56E1/60E2 216m 56E1/60E2 183m 75Kg Conductor

#### Carrying Capacity:

Gross Laden Weight: 89.94 tonnes

Carrying Capacity: 66.0 tonnes.

Tare: 23.94 tonnes.

For exact loading limits see individual wagon on TOPS.

#### Load Positioning:



Please refer to individual table/diagrams for respective rail lengths and wagon types.

Wagons may be loaded with up to 3 tiers of CEN 56E1 or CEN 60 E2 type rail.

Conductor rail may only be loaded up to 2 tiers.

Each tier may be loaded with 12 rails.

Part loads are permitted providing each tier is evenly loaded and each rail bay consists of 4 rails.

It is not permitted to have voids in lower positions.

Different rail types may not be loaded within the same tier, but each individual tier may be loaded with different rail types.

Rails shall protrude through the end rail frame by a minimum of 1500mm.

Rails must not overlap one another.

A minimum 50mm under-clearance shall be maintained between the foot of the rail and the upper most part of the wagon in the headstock area. Note: On Mark 4 wagons the end tail boards have been removed in order to maintain this under clearance.

There are two types off spreader beam:

White are intermediate beams that fit into the rail frame and support the rails.

Red coloured beams are top beams that engage with the rail frame.



The spreader beams have bollards fitted on their underside that engage with the rail heads. These devices can only accommodate 4 rails.

Ensure all the rail ends are positioned in the acceptable safe loading area shown in the diagrams.

Only rails of the same length may be loaded.

Test piece rails may only be loaded in upper tiers of the centre bay position.

Approved rail lengths:

Wagon	Rail (m)	Formation	Rails	Beams*	Diagram
Mk 2 / 3	216	11	36	F	1
	108	6	36	F	1
	91	5	36	F	2
	183 CON	9	24	F/B/C	3
Mk 4	183 CON	8	24	F/B/C	4
	108	5	36	F	5
	216	10	28	F	6

\* Beams Positions: F = Frame B = Above Buffers C = Centre of Wagon

### Stanchions:

The end boards are to be lowered on all wagons apart from the outermost ends on the end wagons. Ensure the end stanchions are securely stowed on the under shelf. The end and side stanchions shall be in the raised position.

Stanchions adjacent to the rail ends shall be in the lowered position.

### Bolsters:

All load bearing bolsters to be of a uniform height and in good condition.

The non-load bearing bolsters adjacent to the ends of the rails are to be removed as detailed in the diagrams.

### Dunnage:

Intermediate and top spreader beams. Spacer collar if loading less than three tiers.

### Unsecured Loads:

Not permitted.

### Securing Equipment:

Each wagon is fitted with two rail support frames.

The outer wagons have the frames positioned depending on the rail length being loaded (see diagram).

The inner wagon frames are positioned inside the bogie centres.



Spreader beams are positioned in the rail frames.

When loading Conductor type rail spreader beams are additionally positioned between tiers of rails above the buffers and at the centre of the wagon.

Any damaged or bent beams are not to be used.

Rails are loaded on the top flat side of the spreader beam. The bottom side fitted with rail guides is positioned between the heads of the rail's underneath. The upper spreader beam is secured in position by 4 pins and an 'R' clip arrangement.

The lower position holes are for 56E1 type rail and the upper holes for 60E2 type rail.

When the train is empty ensure the spreader beams

are secured within the frames.

Special attention shall be made not to mix and match the spreader beams from IGA and YEA type wagons due to them being a different length.

When loading either a single tier or 2 tiers additional spreader beams and spacers are used in the rail frames as follows:

For 3 tiers:

Each frame has 2 x white beams and 1 x red beam.

For 2 tiers:

Additional spacer, 1 x inverted red beam, 1 x inverted white beam, 1 x white beam plus 1 x white beam between tiers per frame.

For 1 tier:

Additional spacer, 1 x inverted red beam, 1 x inverted white beam and 3 x white beams.



**Voids:** Empty bays are permitted. Each bay shall have a minimum of 4 rails

**Doors/Sides:** N/A

**Special Equipment:** Frames and spreader beams.

**Competency:** LE SRC

**Safety:** Ensure P.P.E. is worn at all times.

IGA type wagons are subject to Exceptional Load procedure due to a minimum 120m-curve restriction. RT3973 EXL Advice to Traincrews of Exceptional Load required.



Diagram 1

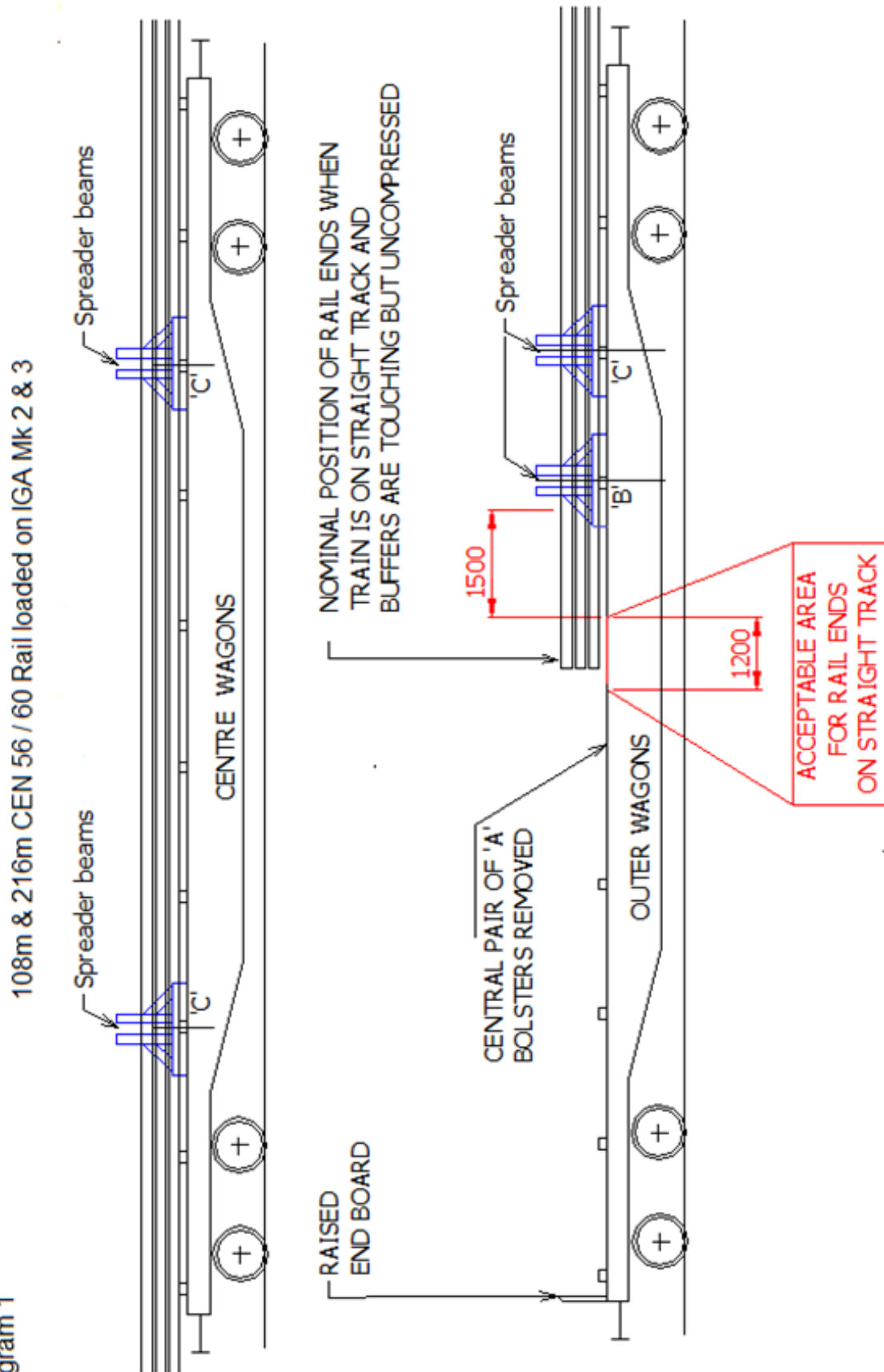
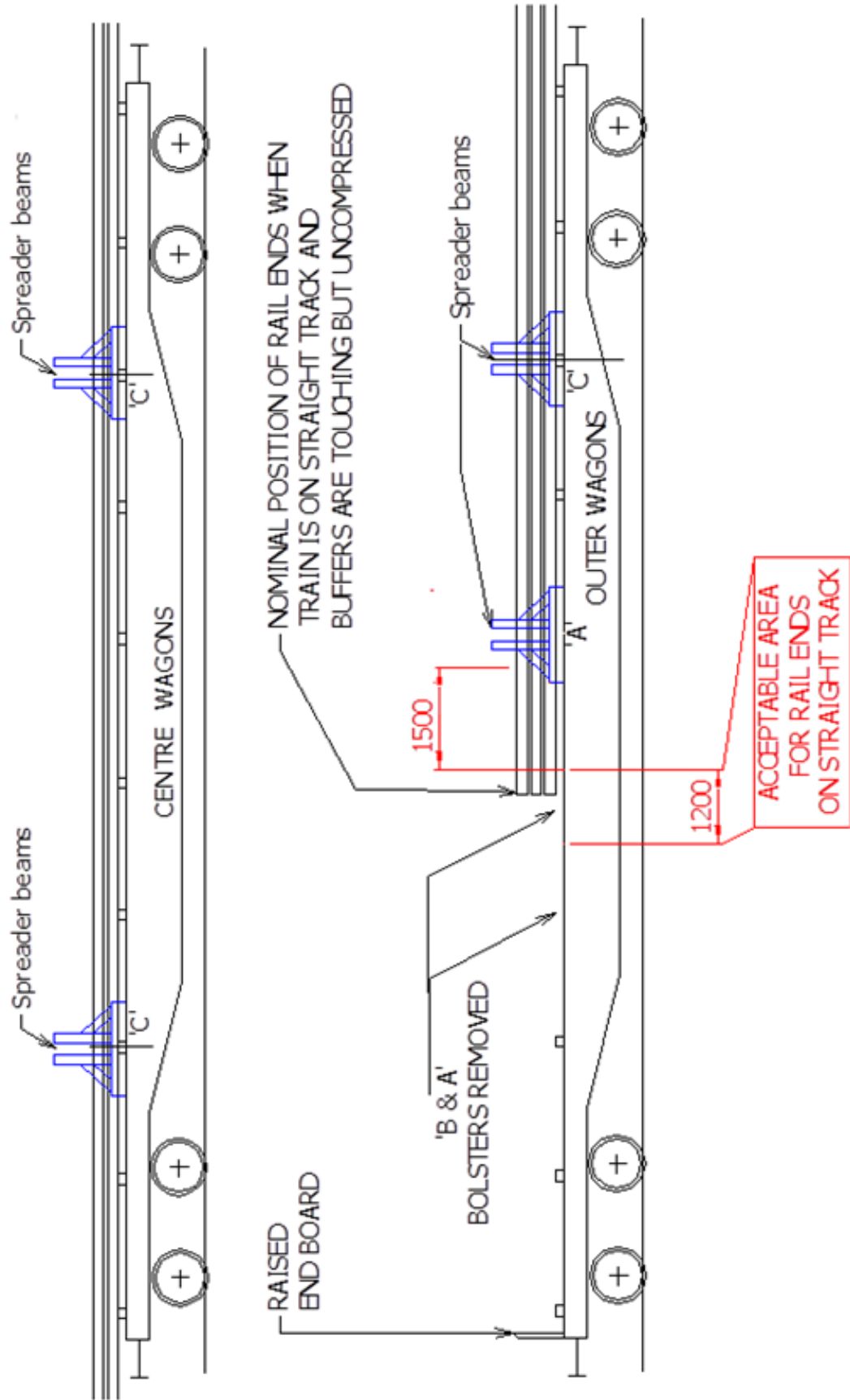


Diagram 2

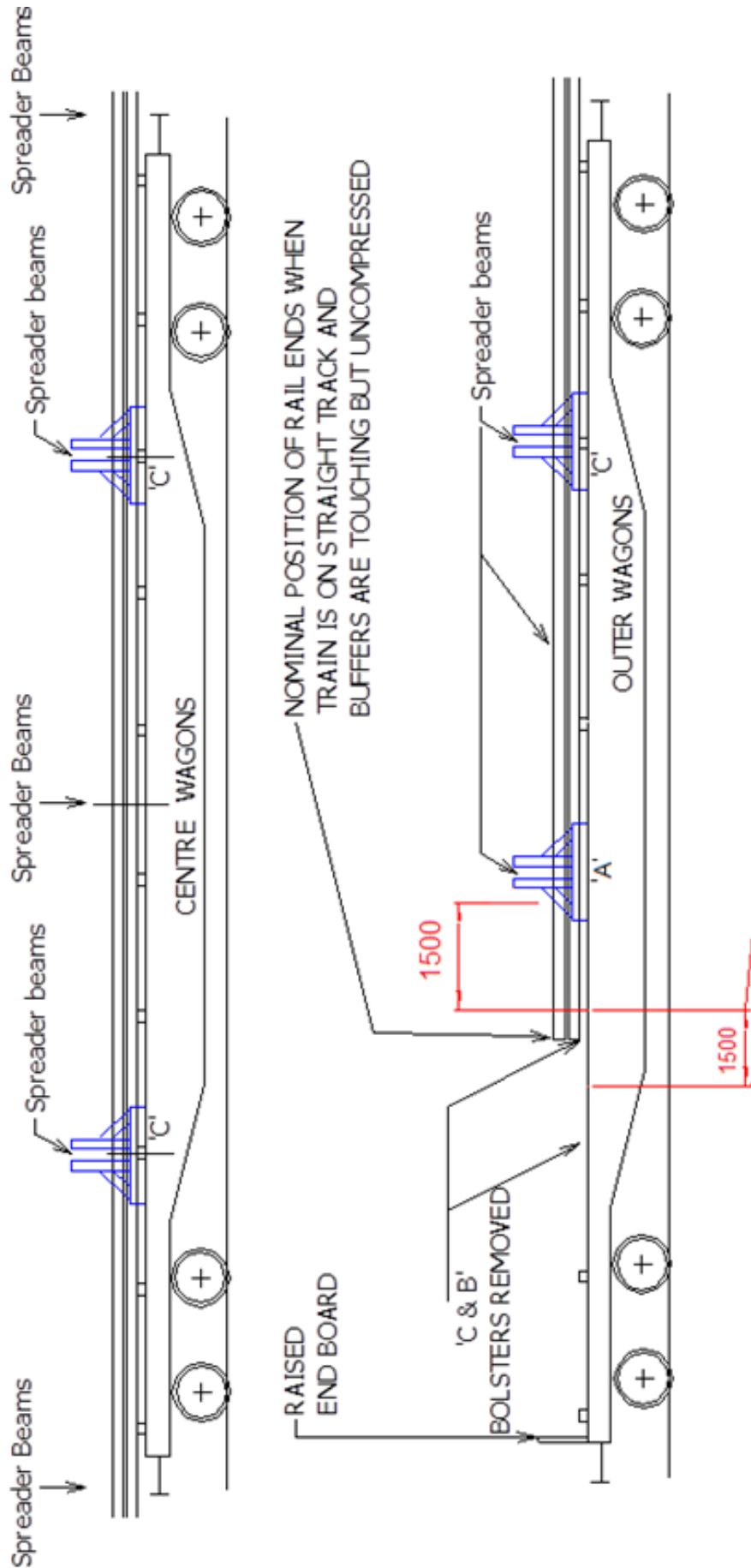
91m CEN 56 / 60 Rail loaded on IGA Mk 2 & 3



NOTE: All rail overhang data is taken from the outer edge of the end rail frame bolster

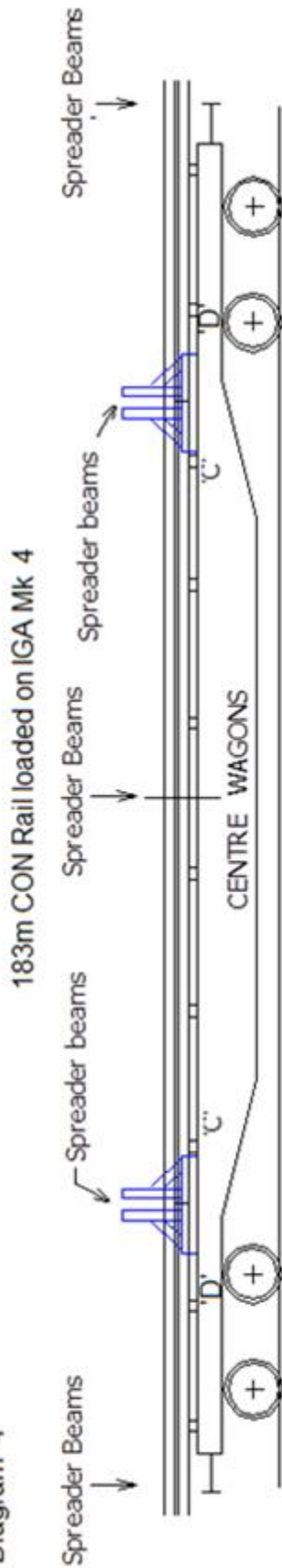
Diagram 3

183m CON Rail loaded on IGA Mk 2 & 3

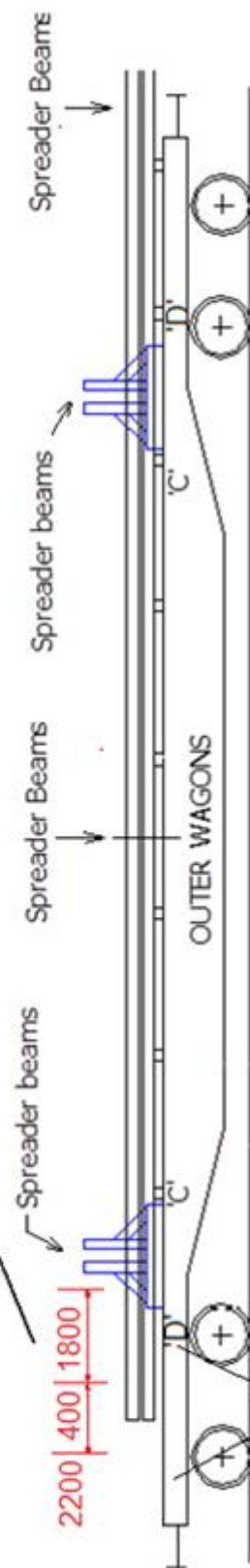


NOTE: All rail overhang data is taken from the outer edge of the end rail frame bolster

Diagram 4



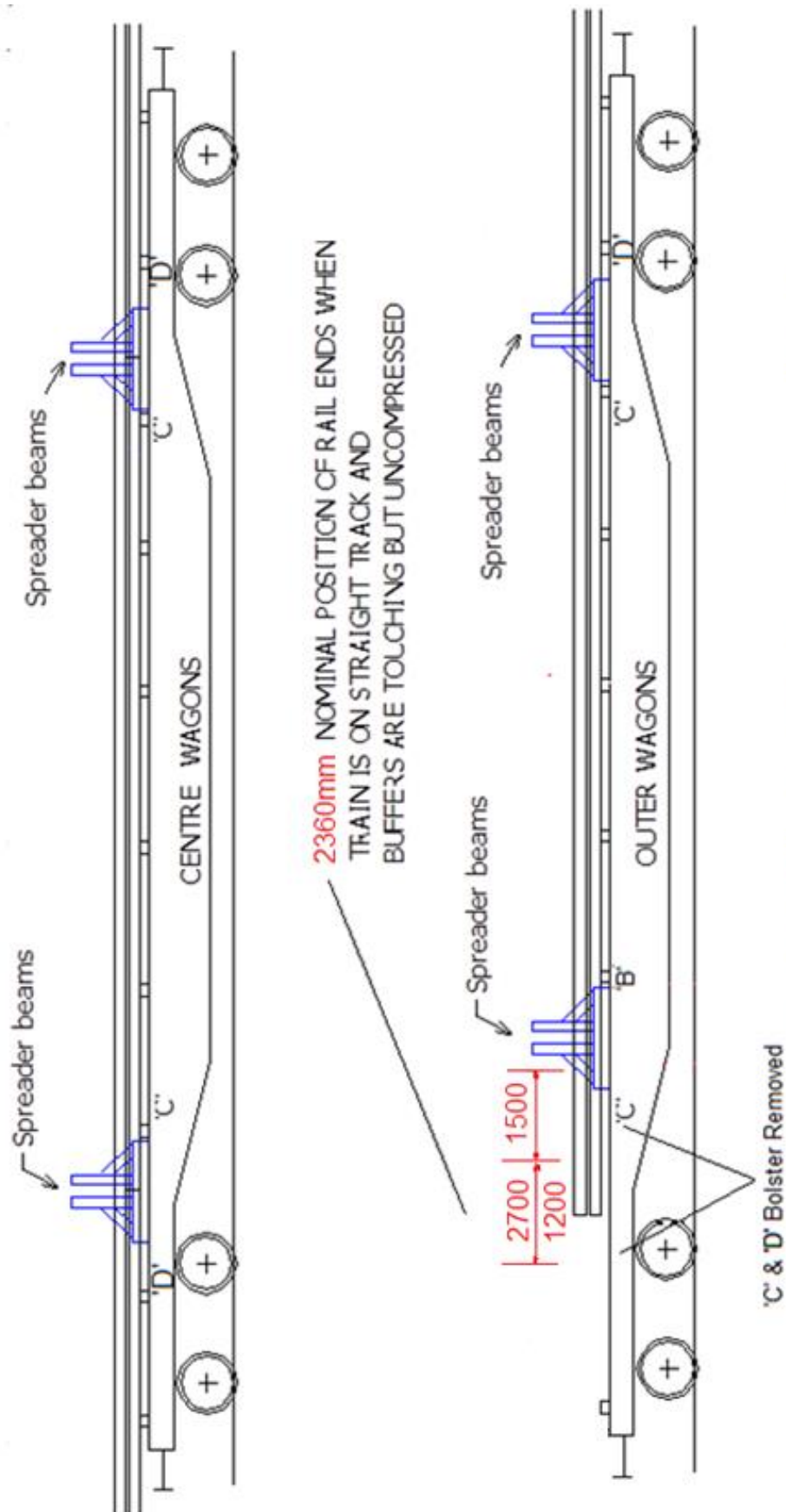
2185mm NOMINAL POSITION OF RAIL ENDS WHEN  
TRAIN IS ON STRAIGHT TRACK AND  
BUFFERS ARE TOUCHING BUT UNCOMPRESSED



D & E Bolster Removed

NOTE: All rail overhang data is taken from the outer edge of the end rail frame bolster

108m CEN 56 / 60 Rail loaded on IGA Mk 4

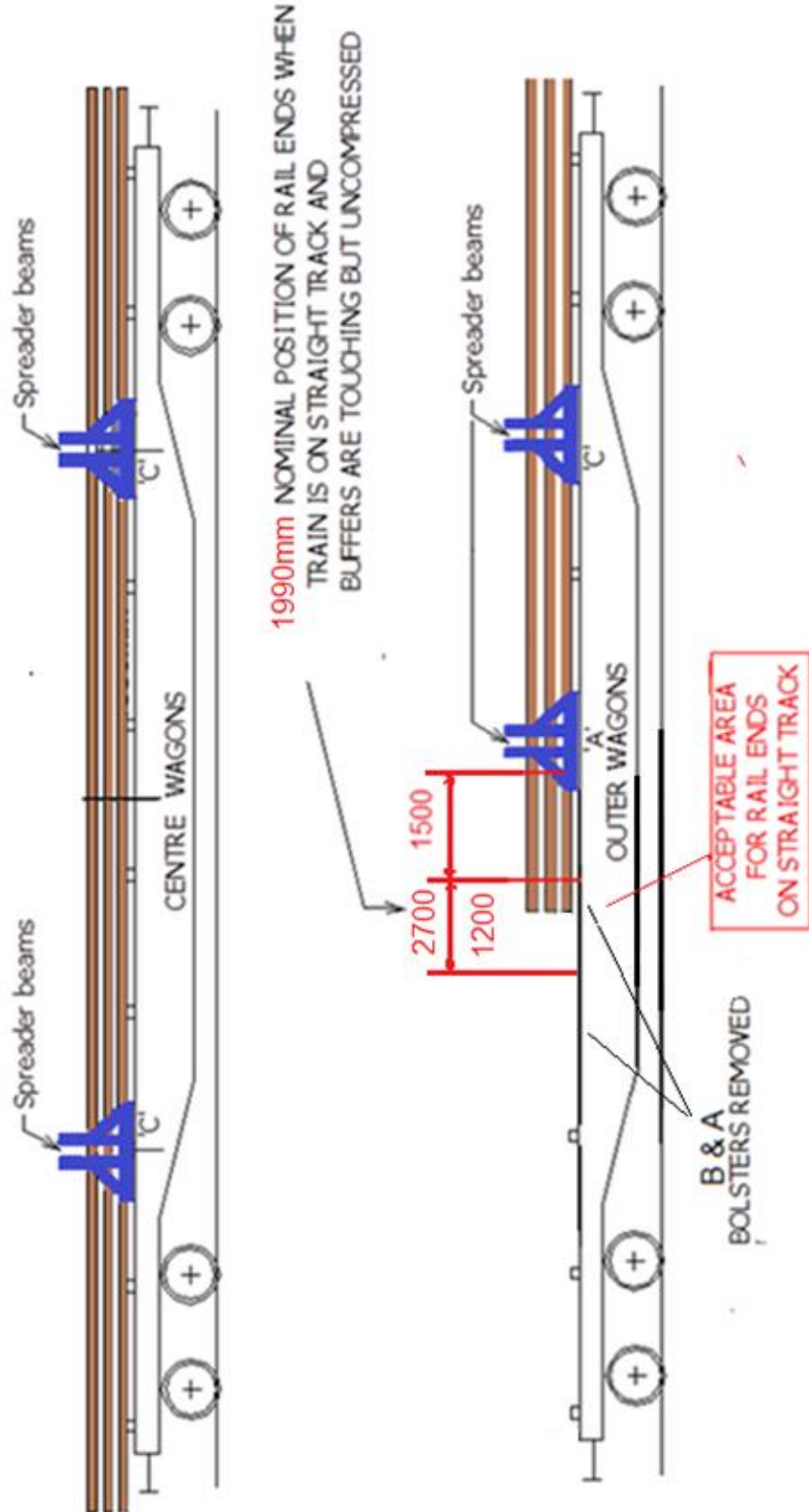


NOTE: All rail overhang data is taken from the outer edge of the end rail frame bolster



Diagram 6

## 216m CEN 56/60 Rail Loaded On IGA Mk 4 Wagons



NOTE: All rail overhang data is taken from the outer edge of the end rail frame bolster