GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS

Transport Bhawan,
1, Parliament Street
New Delhi – 110001
Telefax : +911123310950

No.RW/NH- 35072/1/2010 S&R(B) Dated :24th January 2013

To

1. The Chairman, National Highways Authority of India, G-5 & G-6, Sector -10, Dwarka, New Delhi – 110 045
2. All Principle Secretaries/Secretaries/Engineer-in-Chiefs/Chief Engineers dealing with National Highways and other category of roads
3. The Director General(Border Roads), Seema Sadak Bhawan, Ring Road, Naraina, Delhi Cantt., New Delhi.
4. The Director General (Works), Central Public Works Department, Nirman Bhawan, New Delhi – 110 001

Subject: Movement of Over Weight and Over Dimensional Consignment (OW/ODC) - Guidelines reg.

Madam/Sir,

Exponential growth in infrastructure sector in general and power sector in particular has led to construction of thermal/hydro/ nuclear power plants in different land-locked parts of the country in the recent past. This has led to significant increase in frequency of Over Weight and Over Dimensional Consignment (OW/ODC)being transported by road . As per the instant practice for movement of OW/ODC, Road Transport (RT) Wing of the Ministry accords approval for registration of the trailer with maximum safe laden weight and dimensions in exercise of the power conferred by sub-section 3 of Section 58 of the Motor Vehicle Act 1988. This approval is subject to the following conditions:

(i) The operations of the trailer shall be done only sparingly.

(ii) Load restrictions of various roads stipulated by the Public Works Department/Local Authorities/National Highway Authority of India/Boarder Roads Organization will be observed and permission of such authorities will be obtained every time the vehicles are put on the roads. Each of the such movement will be approved and closely monitored by the concerned road authorities in State/Union Territory/National Highway Authority of India/Boarder Roads Organization from safety point of view.

(iii) The vehicle should display all danger flags and lights, preferably the vehicle should be preceded and followed by a vehicle displaying prominently that a heavy load is passing.

(iv) Coupling of the trailers along the width of the road (side by side)shall not be permitted.

(v) The programme of the movement of the trailer should be intimated at lest ten days in advance to the Executive Engineers concerned and their clearance obtained.

(vi) The trailer shall be registered individually and not as a combination.

(vii) If so directed by the Public Works Department of a State/Union Territory/National Highway Authority of India/Boarder Roads Organization, the loaded vehicle will not be allowed to pass over the bridges on the roads in that State/Union

Territory and in such cases applicants will have to make their own arrangements to cross the rivers/nallas.

(viii) They would need to obtain permission each and every time before moving on a particular route from concerned State or Union Territory authorities/Natioı Highway Authority of India/Boarder Roads Organization enroute in view of the oversized cargo. For each such movement, the timing should be prescribed by the concerned authority.

(ix) They would adhere to the speed limits prescribed by the authorities in State/Union Territory/National Highway Authority of India/Boarder Roads Organization.

(x) The said vehicles should be moved without any hindrance to the normal flow of traffic.

(xi) The maximum speed of the trailer for movement on the road shall not exceed 10 kms/hour.

(xii) The trailer shall be painted for the entire width by yellow and black zebra strips on the front and rear sides duly marked for night time driving /parking suitably by red lamps at the front and rear and red flags on both the sides during day time to indicate the extreme position of the vehicle clearly. In addition the entire overhang shall be covered with a red reflector/reflective tape to facilitate clear vision of overhang at night time.

(xiii) The owner of the trailer would be liable to pay such amount to the Government of State/Union Territory/National Highway Authority of India/Boarder Roads Organization or any other affected person where any damage is caused to the roads or road structures/other road users/person directly or indirectly due to the movement of the trailer.

(xiv) The owner of the trailer will observe restrictions ordered by the State/Union Territory Government/National Highway Authority of India/Boarder Roads Organization time to time in this regard.

(xv) The owner of the trailer will give an advance intimation to such authority or officer specified by the State/ Union Territory Government /National Highway Authority of India/Boarder Roads Organization regarding each movement of such vehicle.

(xvi) A specific entry in Registration Certificate is to be made that the trailer owner in case of each and every movement will be required to take the permission of concerned Authority i.e. Sate Govt./Union Territory Govt./National Highway Authority of India/Boarder Roads Organization.

2. As per the condition stipulated while according approval for registration of the trailer, the owner of the trailer need to obtain permission each and every time before moving on a particular route from the concerned State/UT authorities/NHAI/BRO enroute. It has been reported that due to delay on account of permission from the concerned authorities , there are delays in movement of the trailers. This delay may perhaps be due to non-availability of guidelines for movement of OW/ODC. Since bridges are critical and vital link of the road network and safety of the same is of the concern for the road authorities.

3. In order to develop a comprehensive document which will give guideline regarding movement of OW/ODC(maximum axle load , gross vehicle weight , length of the vehicle permitted for a particular type of super-structure and for a given span length designed as per IRC loadings) , Hydraulic Trailer Owners Association (HTOA) has engaged a consortium of four consultants empanelled with the Ministry. HTOA has submitted document prepared by the consortium of the consultants. Outcome of the study is as under and the same has carved the way for issuance of these guidelines by MoRT&H.

(i) The highway bridges are designed based on codes published by The Indian Roads Congress (IRC). The bridges are designed for live loads conforming to IRC:6. The IRC design vehicles do not cover the loads that are being carried using multi-axle Modular hydraulic Trailer (MHT). For granting permission for the passage of OW/ODC on any

existing bridge, the assessment for adequacy of the bridge is to be carried out as per the provisions of IRC:SP:37-2010, which furnish Guidelines for evaluation of load carrying capacity of bridges for OW/ODC .

(ii) A detailed analytical study was carried out for passage of various types and combination carrying multi-axle modular hydraulic trailers (i,e. 13 types of combinations considered) as OW/ODC. **The study was carried out only for simply supported bridge structures with span length ranging from 5m to 50 meters and covering various cross sections with 2 lane, 4 lane, 6 lane and 8 lane width and various types of bridges.**

4. Based on the findings of this study, simplified charts (as listed below) are enclosed, which shall form the basis for operation and permitting movement of multi axle modular hydraulic trailers carrying OW/ODC throughout the territory of India. The movement shall be permitted subject to compliance of the conditions/assumptions given in Annexure 1.

4.1 The final results of the study are reproduced in enclosed charts, Chart C.1 to Chart C.13. Different combinations of multi axle modular hydraulic trailers are listed in Table 1:

Table 1 – Load Composition of type HT1 to HT13

Chart No.	Type Of Combination	Total No.of Axles in MH TRAILER UNIT	Gross Vehicle Weight (without Puller Tractor) (MT)
C1	HT1	4	72
C2	HT2	6	108
C3	HT3	8	144
C4	HT4	10	180
C5	HT5	12	216
C6	HT6	14	252
C7	HT7	16	288
C8	HT8	18	324
C9	HT9	20	360
C10	HT10 *	8+8	288
C11	HT11 *	10+10	360
C12	HT12 **	14+14	504
C13	HT13 **	16+16	576

(The Unladen weight of single axle is considered as 3.3 t
(*) Units with Turn Table Bolster Arrangement (Beam Weight = 16 t)
(**) Units with Girder Arrangement (Self Weight of Girder = 132 t)

The puller tractor is considered to carry a load of 25t comprising of 6t axle load in front axle and 9.5t each in rear two axles

Note
In order to select the appropriate chart applicable to a particular type of bridge structure, it is important to identify the characteristics of the bridge (i.e. Span Length, Structure Type, Support Condition etc). Before granting permission for passage of OW/ODC, it is important to ensure that these parameters are available with the authority and overall condition of the bridge is examined by the concerned engineer of the Department/ empanelled consultants with Ministry.

4.2 Free movement for MHT combination type HT1, HT2 & HT3 may be permitted for all specified types of bridges and for all specified span lengths. For MHT combination type HT4, HT5, HT6, HT7, HT8, HT9, HT10, HT11, HT12 & HT13, movement shall be

permitted up to Gross Vehicle Weight (GVW) as mentioned in the enclosed charts or reduced GVW reflected in specific cell.

4.3 Based on the above referred charts, a concise recommendation of study in the form of summary is presented in Table 2 below. The HT Loadings are categorized as A, B & C and structure types categorized as 1,2 & 3 respectively. The summary table presents the equivalency of IRC loads to different HT Loads with respect to structure type. For Longer Spans and for Type of Structures **not** covered in the above referred charts, specific studies may be carried out on identical system, which shall form the basis for clearance for movement of OW/ODC and also for future reference.

TABLE 2 : SUMMARY TABLE SHOWING ADEQUACY OF STRUCTURE TYPES FOR PASSAGE OF HT LOAD

TYPE OF BRIDGE STRUCTURE / TYPE OF HT LOADING			CATEGORY OF STRUCTURE TYPE		
			1	2	3
			✓ Culverts ✓ Masonry Arch Bridges ✓ RCC Solid/ Void Slab Bridges ✓ RCC Precast/Cast-in-situ Beam & Slab Bridges (with or without intermediate cross girder)	✓ PSC Precast/Cast-in-situ Beam and slab Bridges(with or without intermediate cross girder) ✓ PSC Cast-in-situ Box Girder type Bridges	✓ PSC Precast Segmental box Girder type Bridges with WET joints. ✓ Composite Decks with steel beams and concrete slab bridges (with or without intermediate cross girder)
HT LOADING CATEGORY	A	HT1, HT2, HT3	PASS	PASS	PASS
	B	HT4 TO HT9	PASS	✓ For HT4: Pass ✓ For HT 5 to HT9: Pass with Restricted GVW in some cases- Refer charts for details	✓ Pass with Restricted GVW in some cases- Refer charts for details
	C	HT10, HT11, HT12, HT13	PASS	✓ Pass with Restricted GVW in some cases- Refer charts for details	✓ Pass with Restricted GVW in some cases- Refer charts for details

4.4 If a route is through for a particular type of Hydraulic trailer with particular load, the route shall be deemed fit for equal or lower categories of HTs with load for a period of six (6) months immediately from the date of issuance of first permission. The permission granted along with the route and HT/load details shall be hosted on Ministry's website. The Chief Engineer (Bridges) S&R of Ministry shall act as nodal officer to receive requests and grant permission for movement of OW/ODC on National Highways within 3 months after the receipt of the Route Survey Report plan along with

condition survey report of the bridges enroute prepared by Ministry's empanelled consultant.

5. Bridge authorities to implement bridge information display system as suggested in Table-3 below) for bridges with span length exceeding 20 meters for better compliance of orders.

Table-3 Bridge Information Display

Name Of Bridge/ Crossing	
Location/Chainage	
Name of River	
Type of Superstructure	
Type of Bearing	
Type of Foundation	
Carriageway width	
Span Arrangement	
Year of Construction	
Design Live Load	
Bridge has been rehabilitated earlier or not	
Name of Controlling Authority	
Address of Controlling Authority	
Contact Telephone Number	
Published on	**Date:**

6. The contents of this letter may be brought to the notice of all the officers of your Department dealing with bridge works on National Highways and other category of Roads. The State/UT governments may also like to issue similar circulars for movement of OW/ODC in roads under their jurisdiction.

Yours faithfully

(A.P. Pathak)
Chief Engineer(B)S&R
For Director General (RD)&SS

Enclosure: Charts C.1 to C.13
Annexure 1

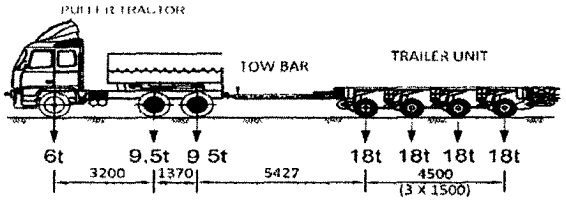
Copy to :

1. All Technical Officers of the Ministry
2 All ROs and ELOs, MoRT&H
3. Secretary General, IRC, New Delhi- With request to publish in Indian Highways, Journal
4. Director, IAHE, Noida
5. PS to Hon'ble Minister (RT&H)
6. PS to Hon'ble MOS(T)
7. PS to Hon'ble MOS(S)
8. Sr.PPS to Secretary (MoRT&H)
9. PPS to DG(RD)&SS, PPS to ADG-1, PPS to ADG-2, PPS to ADG-3
10. PS to JS(T), MoRT&H
11. NIC – With request to upload on web page of the Ministry
12. General Secretary, Hydraulic Trailer Owners Association, Mumbai

CHART SHOWING ADEQUACY OF SPAN, CARRIAGEWAY WIDTHS & STRUCTURE TYPE FOR :

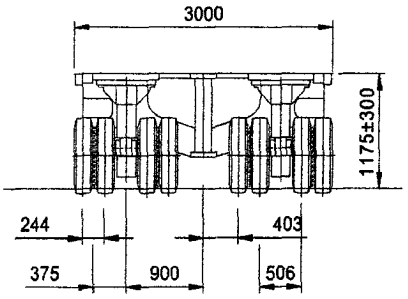
CHART NO. C-1

: T-1 LOADING (WITH 4 AXLE TRAILER UNITS)



Span C'Way type	C WAY TYPE 1	C' WAY TYPE 2	C' WAY TYPE 3	C' WAY TYPE 4	C' WAY TYPE 5
1. Masonary Arch bridges					
5 m		NOT APPLICABLE			
10 m		NOT APPLICABLE			
15 m		NOT APPLICABLE			
2. RCC Solid/Voided slab bridges					
5 m					
10 m					
15 m					
20 m					
3. RCC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
10 m					
15 m					
20 m					
25 m					
4. RCC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
10 m					
15 m					
20 m					
25 m					
5. PSC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
6. PSC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
7. PSC Cast in Situ Box Girders type bridges					
30 m					
35 m					
40 m					
45 m					
50 m					
8 PSC Precast Segmental Box Girders type bridges - With Wet Joint					
30 m				NOT APPLICABLE	
35 m				NOT APPLICABLE	
40 m				NOT APPLICABLE	
45 m				NOT APPLICABLE	
50 m				NOT APPLICABLE	
9 Composite decks with Steel Beams and Concrete slab bridges - With Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					
10. Composite decks with Steel Beams and Concrete slab bridges - Without Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					

TOTAL GVW INCLUDING PULLER TRACTOR= 97 t



TYPICAL CROSS SECTION SHOWING TRANSVERSE WHEEL ARRANGEMENT OF HYDRAULIC TRAILER UNITS

Legend.

Safe to carry the specified load

Safe to carry marked reduced GVW

C'WAY TYPE 1 2 LANE SINGLE CARRIAGEWAY OR 2 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 2 3 LANE SINGLE CARRIAGEWAY OR 3 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 3 4 LANE SINGLE CARRIAGEWAY OR 4 LANE DUAL C' WAY WITH STRUCTURAL DISCONTINUITY OR 2 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 4 3 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 5 4 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

NOTES

1 THE ABOVE CONCLUSIONS ARE FOR BRIDGES HAVING DECK SLAB WITHOUT ANY TRANSVERSE PRESTRESSING

2 THE OWC CAN SAFELY BE PERMITTED OVER ALL TYPES OF CULVERTS HAVING SPAN LENGTH < 6m

3 THE ABOVE CONCLUSIONS ARE BASED ON THE CONDITIONS / ASSUMPTIONS GIVEN SEPARATELY

4 WHEREVER REDUCED GVW IS MARKED "RED" IN THE CHART, CORRESPONDING REDUCED AXLE LOAD CAN BE CALCULATED BY THE FORMULA RAL = (RGVW-25) / 4

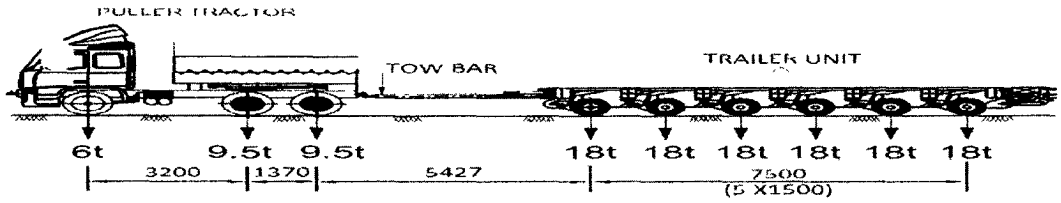
Where RAL = Reduced Axle Load (in tonnes), RGVW = Reduced Gross Vehicle Weight (in tonnes)

5 THE TRANSPORTER SHALL TAKE PERMISSION FROM THE CONCERNED REGULATORY AGENCY BEFORE TAKING THE HT LOADS OVER THE BRIDGES

6 IN CASE OF STRUCTURES MARKED TO CARRY RGVW, FOR INTERMEDIATE SPAN LENGTHS, THE VALUES OF GVW OF CRITICAL OF THE TWO ADJACENT SPANS HAVE TO BE TAKEN

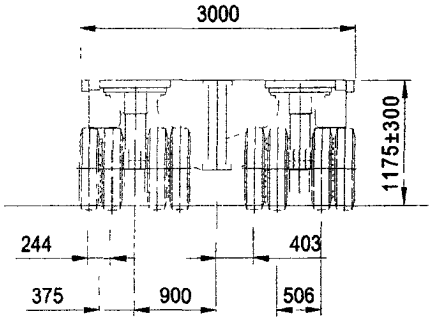
CHART SHOWING ADEQUACY OF SPAN, CARRIAGEWAY WIDTHS & STRUCTURE TYPE FOR HT-2 LOADING (WITH 6 AXLE TRAILER UNITS)

CHART NO. C-2



Span / CW type	C' WAY TYPE 1	C' WAY TYPE 2	C' WAY TYPE 3	C' WAY TYPE 4	C' WAY TYPE 5
1. Masonary Arch bridges					
5 m		NOT APPLICABLE			
10 m		NOT APPLICABLE			
15 m		NOT APPLICABLE			
2 RCC Solid/Voided slab bridges					
5 m					
10 m					
15 m					
20 m					
3. RCC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
10 m					
15 m					
20 m					
25 m					
4 RCC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
10 m					
15 m					
20 m					
25 m					
5. PSC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
6. PSC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
7 PSC Cast in Situ Box Girders type bridges					
30 m					
35 m					
40 m					
45 m					
50 m					
8. PSC Precast Segmental Box Girders type bridges - With Wet Joint					
30 m				NOT APPLICABLE	
35 m				NOT APPLICABLE	
40 m				NOT APPLICABLE	
45 m				NOT APPLICABLE	
50 m				NOT APPLICABLE	
9. Composite decks with Steel Beams and Concrete slab bridges - With Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					
10 Composite decks with Steel Beams and Concrete slab bridges - Without Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					

TOTAL GVW INCLUDING PULLER TRACTOR= 133 t



TYPICAL CROSS SECTION SHOWING TRANSVERSE WHEEL ARRANGEMENT OF HYDRAULIC TRAILER UNITS

Legend:

Safe to carry the specified load

Safe to carry marked reduced GVW

C'WAY TYPE 1 2 LANE SINGLE CARRIAGEWAY OR 2 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 2 3 LANE SINGLE CARRIAGEWAY OR 3 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 3 4 LANE SINGLE CARRIAGEWAY OR 4 LANE DUAL C' WAY WITH STRUCTURAL DISCONTINUITY OR 2 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 4 : 3 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 5 4 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

NOTES

1 THE ABOVE CONCLUSIONS ARE FOR BRIDGES HAVING DECK SLAB WITHOUT ANY TRANSVERSE PRESTRESSING

2 THE OWC CAN SAFELY BE PERMITTED OVER ALL TYPES OF CULVERTS HAVING SPAN LENGTH < 6m

3 THE ABOVE CONCLUSIONS ARE BASED ON THE CONDITIONS / ASSUMPTIONS GIVEN SEPARATELY

4 WHEREVER REDUCED GVW IS MARKED "RED" IN THE CHART, CORRESPONDING REDUCED AXLE LOAD CAN BE CALCULATED BY THE FORMULA RAL = (RGVW-25) / 6

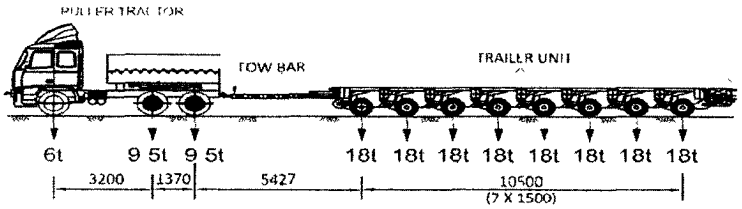
Where RAL = Reduced Axle Load (in tonnes), RGVW = Reduced Gross Vehicle Weight (in tonnes)

5 THE TRANSPORTER SHALL TAKE PERMISSION FROM THE CONCERNED REGULATORY AGENCY BEFORE TAKING THE HT LOADS OVER THE BRIDGES

6 IN CASE OF STRUCTURES MARKED TO CARRY RGVW, FOR INTERMEDIATE SPAN LENGTHS, THE VALUES OF GVW OF CRITICAL OF THE TWO ADJACENT SPANS HAVE TO BE TAKEN.

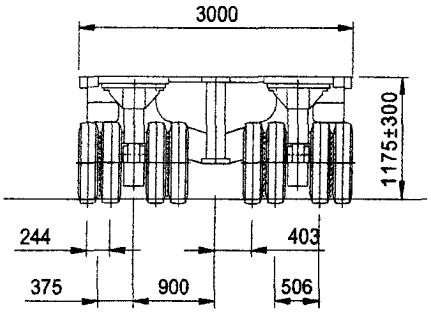
CHART SHOWING ADEQUACY OF SPAN, CARRIAGEWAY WIDTHS & STRUCTURE TYPE FOR HT-3 LOADING (WITH 8 AXLE TRAILER UNITS)

CHART NO. C-3



Span / CW type	C' WAY TYPE 1	C' WAY TYPE 2	C' WAY TYPE 3	C' WAY TYPE 4	C' WAY TYPE 5
1. Masonary Arch bridges					
5 m		NOT APPLICABLE			
10 m		NOT APPLICABLE			
15 m		NOT APPLICABLE			
2. RCC Solid/Voided slab bridges					
5 m					
10 m					
15 m					
20 m					
3. RCC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
10 m					
15 m					
20 m					
25 m					
4. RCC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
10 m					
15 m					
20 m					
25 m					
5. PSC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
6. PSC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
7. PSC Cast in Situ Box Girders type bridges					
30 m					
35 m					
40 m					
45 m					
50 m					
8. PSC Precast Segmental Box Girders type bridges - With Wet Joint					
30 m				NOT APPLICABLE	
35 m				NOT APPLICABLE	
40 m				NOT APPLICABLE	
45 m				NOT APPLICABLE	
50 m				NOT APPLICABLE	
9. Composite decks with Steel Beams and Concrete slab bridges - With Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					
10. Composite decks with Steel Beams and Concrete slab bridges - Without Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					

TOTAL GVW INCLUDING PULLER TRACTOR= 169 t



TYPICAL CROSS SECTION SHOWING TRANSVERSE WHEEL ARRANGEMENT OF HYDRAULIC TRAILER UNITS

Legend

Safe to carry the specified load

Safe to carry marked reduced GVW

C'WAY TYPE 1 2 LANE SINGLE CARRIAGEWAY OR 2 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 2 3 LANE SINGLE CARRIAGEWAY OR 3 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 3 4 LANE SINGLE CARRIAGEWAY OR 4 LANE DUAL C' WAY WITH STRUCTURAL DISCONTINUITY OR 2 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 4 3 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 5 4 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

NOTES

1 THE ABOVE CONCLUSIONS ARE FOR BRIDGES HAVING DECK SLAB WITHOUT ANY TRANSVERSE PRESTRESSING.

2 THE OWC CAN SAFELY BE PERMITTED OVER ALL TYPES OF CULVERTS HAVING SPAN LENGTH < 8m.

3 THE ABOVE CONCLUSIONS ARE BASED ON THE CONDITIONS / ASSUMPTIONS GIVEN SEPARATELY

4 WHEREVER REDUCED GVW IS MARKED "RED" IN THE CHART, CORRESPONDING REDUCED AXLE LOAD CAN BE CALCULATED BY THE FORMULA RAL = (RGVW-25) / 8

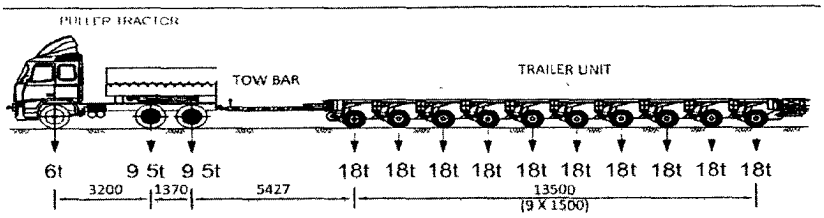
Where RAL = Reduced Axle Load (in tonnes); RGVW = Reduced Gross Vehicle Weight (in tonnes)

5 THE TRANSPORTER SHALL TAKE PERMISSION FROM THE CONCERNED REGULATORY AGENCY BEFORE TAKING THE HT LOADS OVER THE BRIDGES

6 IN CASE OF STRUCTURES MARKED TO CARRY RGVW, FOR INTERMEDIATE SPAN LENGTHS, THE VALUES OF GVW OF CRITICAL OF THE TWO ADJACENT SPANS HAVE TO BE TAKEN.

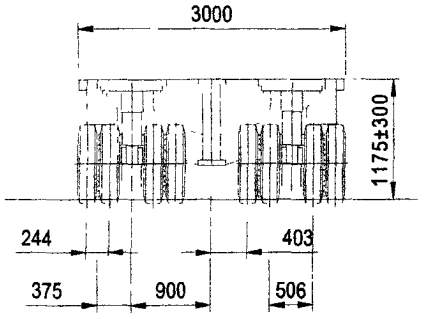
CHART SHOWING ADEQUACY OF SPAN, CARRIAGEWAY WIDTHS & STRUCTURE TYPE FOR HT-' LOADING (WITH 10 AXLE TRAILER UNITS)

CHART NO. C-4



Span, C'W type	C' WAY TYPE 1	C' WAY TYPE 2	C' WAY TYPE 3	C' WAY TYPE 4	C' WAY TYPE 5
1. Masonary Arch bridges					
5 m	NOT APPLICABLE				
10 m	NOT APPLICABLE				
15 m	NOT APPLICABLE				
2. RCC Solid/Voided slab bridges					
5 m					
10 m					
15 m					
20 m					
3. RCC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
10 m					
15 m					
20 m					
25 m					
4. RCC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
10 m					
15 m					
20 m					
25 m					
5. PSC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
6. PSC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
7. PSC Cast in Situ Box Girders type bridges					
30 m					
35 m					
40 m					
45 m					
50 m					
8. PSC Precast Segmental Box Girders type bridges - With Wet Joint					
30 m				NOT APPLICABLE	
35 m				NOT APPLICABLE	
40 m				NOT APPLICABLE	
45 m				NOT APPLICABLE	
50 m				NOT APPLICABLE	
9. Composite decks with Steel Beams and Concrete slab bridges - With Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					
10. Composite decks with Steel Beams and Concrete slab bridges - Without Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					

TOTAL GVW INCLUDING PULLER TRACTOR= 205 t



TYPICAL CROSS SECTION SHOWING TRANSVERSE WHEEL ARRANGEMENT OF HYDRAULIC TRAILER UNITS

Legend.

Safe to carry the specified load

Safe to carry marked reduced GVW

C'WAY TYPE 1 2 LANE SINGLE CARRIAGEWAY OR 2 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 2 3 LANE SINGLE CARRIAGEWAY OR 3 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 3 4 LANE SINGLE CARRIAGEWAY OR 4 LANE DUAL C' WAY WITH STRUCTURAL DISCONTINUITY OR 2 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 4 ' 3 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 5 4 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

NOTES

1 THE ABOVE CONCLUSIONS ARE FOR BRIDGES HAVING DECK SLAB WITHOUT ANY TRANSVERSE PRESTRESSING

2 THE OWC CAN SAFELY BE PERMITTED OVER ALL TYPES OF CULVERTS HAVING SPAN LENGTH < 6m.

3 THE ABOVE CONCLUSIONS ARE BASED ON THE CONDITIONS / ASSUMPTIONS GIVEN SEPARATELY

4 WHEREVER REDUCED GVW IS MARKED "RED" IN THE CHART, CORRESPONDING REDUCED AXLE LOAD CAN BE CALCULATED BY THE FORMULA RAL = (RGVW-25) / 10

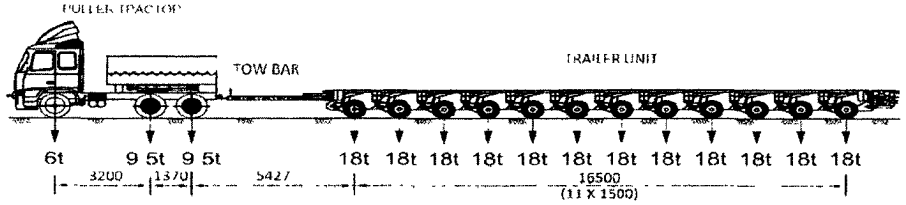
Where RAL = Reduced Axle Load (in tonnes); RGVW = Reduced Gross Vehicle Weight (in tonnes)

5 THE TRANSPORTER SHALL TAKE PERMISSION FROM THE CONCERNED REGULATORY AGENCY BEFORE TAKING THE HT LOADS OVER THE BRIDGES

6 IN CASE OF STRUCTURES MARKED TO CARRY RGVW, FOR INTERMEDIATE SPAN LENGTHS, THE VALUES OF GVW OF CRITICAL OF THE TWO ADJACENT SPANS HAVE TO BE TAKEN.

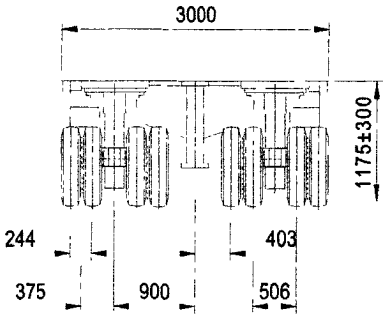
CHART SHOWING ADEQUACY OF SPAN, CARRIAGEWAY WIDTHS & STRUCTURE TYPE FOR HT-5 LOADING (WITH 12 AXLE TRAILER UNITS)

CHART NO. C-5



Span ↓ C/W type →	C'WAY TYPE 1	C'WAY TYPE 2	C'WAY TYPE 3	C'WAY TYPE 4	C'WAY TYPE 5
1. Masonary Arch bridges					
5 m		NOT APPLICABLE			
10 m		NOT APPLICABLE			
15 m		NOT APPLICABLE			
2. RCC Solid/Voided slab bridges					
5 m					
10 m					
15 m					
20 m					
3. RCC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
10 m					
15 m					
20 m					
25 m					
4 RCC Precast/Cast in-Situ Beam and Slab bridges - Without Int X Girder					
10 m					
15 m					
20 m					
25 m					
5 PSC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
6. PSC Precast/Cast in-Situ Beam and Slab bridges - Without Int X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
7 PSC Cast in Situ Box Girders type bridges					
30 m					
35 m					
40 m					
45 m					
50 m					
8. PSC Precast Segmental Box Girders type bridges - With Wet Joint					
30 m				NOT APPLICABLE	
35 m				NOT APPLICABLE	
40 m				NOT APPLICABLE	
45 m				NOT APPLICABLE	
50 m				NOT APPLICABLE	
9. Composite decks with Steel Beams and Concrete slab bridges - With Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					
10 Composite decks with Steel Beams and Concrete slab bridges - Without Int X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					

TOTAL GVW INCLUDING PULLER TRACTOR= 241 t



TYPICAL CROSS SECTION SHOWING TRANSVERSE WHEEL ARRANGEMENT OF HYDRAULIC TRAILER UNITS

Legend

Safe to carry the specified load

Safe to carry marked reduced GVW

C'WAY TYPE 1 2 LANE SINGLE CARRIAGEWAY OR 2 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 2 3 LANE SINGLE CARRIAGEWAY OR 3 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 3 4 LANE SINGLE CARRIAGEWAY OR 4 LANE DUAL C' WAY WITH STRUCTURAL DISCONTINUITY OR 2 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 4 3 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 5 4 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

NOTES

1 THE ABOVE CONCLUSIONS ARE FOR BRIDGES HAVING DECK SLAB WITHOUT ANY TRANSVERSE PRESTRESSING.

2 THE OWC CAN SAFELY BE PERMITTED OVER ALL TYPES OF CULVERTS HAVING SPAN LENGTH < 6m.

3 THE ABOVE CONCLUSIONS ARE BASED ON THE CONDITIONS / ASSUMPTIONS GIVEN SEPARATELY

4 WHEREVER REDUCED GVW IS MARKED "RED" IN THE CHART, CORRESPONDING REDUCED AXLE LOAD CAN BE CALCULATED BY THE FORMULA RAL = (RGVW-25) / 12

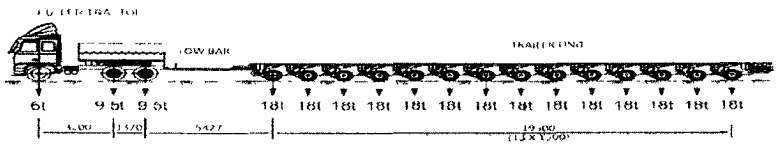
Where RAL = Reduced Axle Load (in tonnes), RGVW = Reduced Gross Vehicle Weight (in tonnes)

5 THE TRANSPORTER SHALL TAKE PERMISSION FROM THE CONCERNED REGULATORY AGENCY BEFORE TAKING THE HT LOADS OVER THE BRIDGES

6 IN CASE OF STRUCTURES MARKED TO CARRY RGVW, FOR INTERMEDIATE SPAN LENGTHS, THE VALUES OF GVW OF CRITICAL OF THE TWO ADJACENT SPANS HAVE TO BE TAKEN

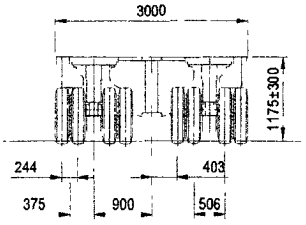
CHART SHOWING ADEQUACY OF SPAN, CARRIAGEWAY WIDTHS & STRUCTURE TYPE FOR HT-6 LOADING (WITH 14 AXLE TRAILER UNITS)

CHART NO. C-6



Span / CW type	C WAY TYPE 1	C WAY TYPE 2	C WAY TYPE 3	C WAY TYPE 4	C WAY TYPE 5
1. Masonary Arch bridges					
5 m		NOT APPLICABLE			
10 m		NOT APPLICABLE			
15 m		NOT APPLICABLE			
2. RCC Solid/Voided slab bridges					
5 m					
10 m					
15 m					
20 m					
3. RCC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
10 m					
15 m					
20 m					
25 m					
4. RCC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
10 m					
15 m					
20 m					
25 m					
5. PSC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
6. PSC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
7. PSC Cast in Situ Box Girders type bridges					
30 m					
35 m					
40 m					
45 m					
50 m					
8. PSC Precast Segmental Box Girders type bridges - With Wet Joint					
30 m				NOT APPLICABLE	
35 m				NOT APPLICABLE	
40 m				NOT APPLICABLE	
45 m				NOT APPLICABLE	
50 m				NOT APPLICABLE	
9. Composite decks with Steel Beams and Concrete slab bridges - With Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					
10. Composite decks with Steel Beams and Concrete slab bridges - Without Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					

TOTAL GVW INCLUDING PULLER TRACTOR= 277 t



TYPICAL CROSS SECTION SHOWING TRANSVERSE WHEEL ARRANGEMENT OF HYDRAULIC TRAILER UNITS

Legend

Safe to carry the specified load

Safe to carry marked reduced GVW

C'WAY TYPE 1 2 LANE SINGLE CARRIAGEWAY OR 2 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 2 3 LANE SINGLE CARRIAGEWAY OR 3 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 3 4 LANE SINGLE CARRIAGEWAY OR 4 LANE DUAL C' WAY WITH STRUCTURAL DISCONTINUITY OR 2 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 4 3 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 5 4 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

NOTES

1 THE ABOVE CONCLUSIONS ARE FOR BRIDGES HAVING DECK SLAB WITHOUT ANY TRANSVERSE PRESTRESSING

2 THE CWC CAN SAFELY BE PERMITTED OVER ALL TYPES OF CULVERTS HAVING SPAN LENGTH < 6m.

3 THE ABOVE CONCLUSIONS ARE BASED ON THE CONDITIONS / ASSUMPTIONS GIVEN SEPARATELY

4 WHEREVER REDUCED GVW IS MARKED "RED" IN THE CHART, CORRESPONDING REDUCED AXLE LOAD CAN BE CALCULATED BY THE FORMULA RAL = (RGVW 25) / 14

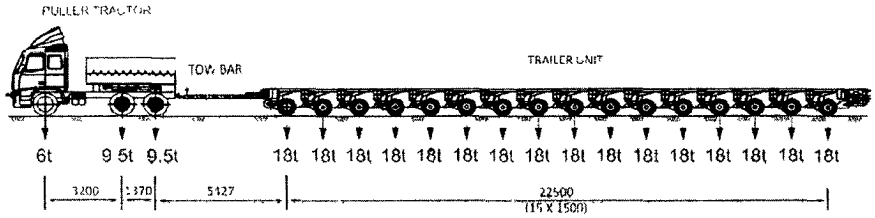
Where RAL = Reduced Axle Load (in tonnes) RGVW = Reduced Gross Vehicle Weight (in tonnes)

5 THE TRANSPORTER SHALL TAKE PERMISSION FROM THE CONCERNED REGULATORY AGENCY BEFORE TAKING THE HT LOADS OVER THE BRIDGES

6 IN CASE OF STRUCTURES MARKED TO CARRY RGVW, FOR INTERMEDIATE SPAN LENGTHS, THE VALUES OF GVW OF CRITICAL OF THE TWO ADJACENT SPANS HAVE TO BE TAKEN

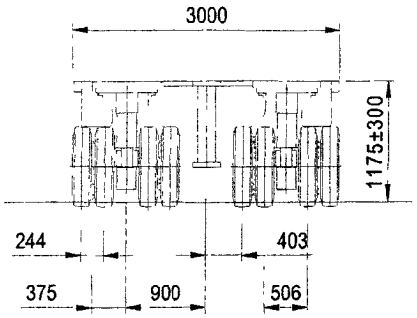
CHART SHOWING ADEQUACY OF SPAN, CARRIAGEWAY WIDTHS & STRUCTURE TYPE FOR HT-7 LOADING (WITH 16 AXLE TRAILER UNITS)

CHART NO. C-7



Span ↓ C/W type	C WAY TYPE 1	C WAY TYPE 2	C' WAY TYPE 3	C' WAY TYPE 4	C WAY TYPE 5
1 Masonary Arch bridges					
5 m		NOT APPLICABLE			
10 m		NOT APPLICABLE			
15 m		NOT APPLICABLE			
2 RCC Solid/Voided slab bridges					
5 m					
10 m					
15 m					
20 m					
3. RCC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
10 m					
15 m					
20 m					
25 m					
4. RCC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
10 m					
15 m					
20 m					
25 m					
5 PSC Precast/Cast in-Situ Beam and Slab bridges - With Int X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
6. PSC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
7 PSC Cast in Situ Box Girders type bridges					
30 m					
35 m					
40 m					
45 m					
50 m					
8 PSC Precast Segmental Box Girders type bridges - With Wet Joint					
30 m				NOT APPLICABLE	
35 m				NOT APPLICABLE	
40 m				NOT APPLICABLE	
45 m				NOT APPLICABLE	
50 m				NOT APPLICABLE	
9. Composite decks with Steel Beams and Concrete slab bridges - With Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					
10 Composite decks with Steel Beams and Concrete slab bridges - Without Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					

TOTAL GVW INCLUDING PULLER TRACTOR= 313 t



TYPICAL CROSS SECTION SHOWING TRANSVERSE WHEEL ARRANGEMENT OF HYDRAULIC TRAILER UNITS

Legend

Safe to carry the specified load

Safe to carry marked reduced GVW

C'WAY TYPE 1 . 2 LANE SINGLE CARRIAGEWAY OR 2 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 2 3 LANE SINGLE CARRIAGEWAY OR 3 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUITY

C'WAY TYPE 3 4 LANE SINGLE CARRIAGEWAY OR 4 LANE DUAL C' WAY WITH STRUCTURAL DISCONTINUITY OR 2 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 4 3 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 5 4 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

NOTES

1 THE ABOVE CONCLUSIONS ARE FOR BRIDGES HAVING DECK SLAB WITHOUT ANY TRANSVERSE PRESTRESSIN

2 THE OWC CAN SAFELY BE PERMITTED OVER ALL TYPES OF CULVERTS HAVING SPAN LENGTH < 6m

3 THE ABOVE CONCLUSIONS ARE BASED ON THE CONDITIONS / ASSUMPTIONS GIVEN SEPARATELY

4 WHEREVER REDUCED GVW IS MARKED "RED" IN THE CHART, CORRESPONDING REDUCED AXLE LOAD CAN BE CALCULATED BY THE FORMULA RAL = (RGVW-25) / 16

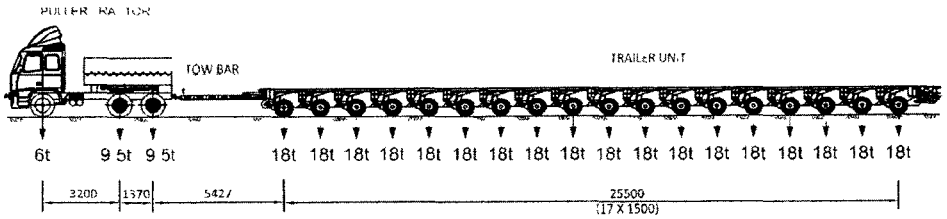
Where RAL = Reduced Axle Load (in tonnes), RGVW = Reduced Gross Vehicle Weight (in tonnes)

5 THE TRANSPORTER SHALL TAKE PERMISSION FROM THE CONCERNED REGULATORY AGENCY BEFORE TAKING THE HT LOADS OVER THE BRIDGES

6 IN CASE OF STRUCTURES MARKED TO CARRY RGVW, FOR INTERMEDIATE SPAN LENGTHS, THE VALUES OF GVW OF CRITICAL OF THE TWO ADJACENT SPANS HAVE TO BE TAKEN

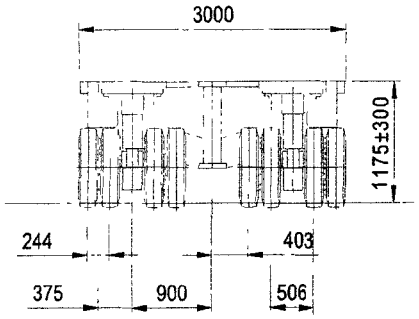
CHART SHOWING ADEQUACY OF SPAN, CARRIAGEWAY WIDTHS & STRUCTURE TYPE FOR HT-8 LOADING (WITH 18 AXLE TRAILER UNITS)

CHART NO. C-8



Span ↓ CW type →	C' WAY TYPE 1	C' WAY TYPE 2	C' WAY TYPE 3	C' WAY TYPE 4	C' WAY TYPE 5
1. Masonary Arch bridges					
5 m		NOT APPLICABLE			
10 m		NOT APPLICABLE			
15 m		NOT APPLICABLE			
2. RCC Solid/Voided slab bridges					
5 m					
10 m					
15 m					
20 m					
3. RCC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
10 m					
15 m					
20 m					
25 m					
4. RCC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
10 m					
15 m					
20 m					
25 m					
5 PSC Precast/Cast in-Situ Beam and Slab bridges - With Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
6. PSC Precast/Cast in-Situ Beam and Slab bridges - Without Int. X Girder					
20 m					
25 m					
30 m					
35 m					
40 m					
7. PSC Cast in Situ Box Girders type bridges					
30 m					
35 m					
40 m					
45 m					
50 m					
8. PSC Precast Segmental Box Girders type bridges - With Wet Joint					
30 m				NOT APPLICABLE	
35 m				NOT APPLICABLE	
40 m				NOT APPLICABLE	
45 m				NOT APPLICABLE	
50 m				NOT APPLICABLE	
9 Composite decks with Steel Beams and Concrete slab bridges - With Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					
10. Composite decks with Steel Beams and Concrete slab bridges - Without Int. X Girder					
15 m					
20 m					
25 m					
30 m					
35 m					

TOTAL GVW INCLUDING PULLER TRACTOR= 349 t



TYPICAL CROSS SECTION SHOWING TRANSVERSE WHEEL ARRANGEMENT OF HYDRAULIC TRAILER UNITS

Legend

Safe to carry the specified load

Safe to carry marked reduced GVW

C'WAY TYPE 1 2 LANE SINGLE CARRIAGEWAY OR 2 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUIT

C'WAY TYPE 2 3 LANE SINGLE CARRIAGEWAY OR 3 LANE DUAL CARRIAGEWAY WITH STRUCTURAL DISCONTINUIT

C'WAY TYPE 3 4 LANE SINGLE CARRIAGEWAY OR 4 LANE DUAL C' WAY WITH STRUCTURAL DISCONTINUITY OR 2 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 4 3 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

C'WAY TYPE 5 4 LANE DUAL CARRIAGEWAY WITHOUT STRUCTURAL DISCONTINUITY

NOTES

1. THE ABOVE CONCLUSIONS ARE FOR BRIDGES HAVING DECK SLAB WITHOUT ANY TRANSVERSE PRESTRESSING.
2. THE OWC CAN SAFELY BE PERMITTED OVER ALL TYPES OF CULVERTS HAVING SPAN LENGTH < 6m
3. THE ABOVE CONCLUSIONS ARE BASED ON THE CONDITIONS / ASSUMPTIONS GIVEN SEPARATELY
4. WHEREVER REDUCED GVW IS MARKED "RED" IN THE CHART, CORRESPONDING REDUCED AXLE LOAD CAN BE CALCULATED BY THE FORMULA RAL = (RGVW-25) / 18
   Where RAL = Reduced Axle Load (in tonnes), RGVW = Reduced Gross Vehicle Weight (in tonnes)
5. THE TRANSPORTER SHALL TAKE PERMISSION FROM THE CONCERNED REGULATORY AGENCY BEFORE TAKING THE HT LOADS OVER THE BRIDGES
6. IN CASE OF STRUCTURES MARKED TO CARRY RGVW, FOR INTERMEDIATE SPAN LENGTHS, THE VALUES OF GVW OF CRITICAL OF THE TWO ADJACENT SPANS HAVE TO BE TAKEN