BRITISH COLUMBIA
The Best Place on Earth

Ministry of Forests & Range

ENGINEERING BRANCH, FIELD OPERATIONS DIVISION

STANDARD BRIDGE DESIGN VEHICLES

DRAWING SCHEDULE			
DRAWING No. / MODEL TYPE	DESCRIPTION	REV.	DATE
STD-EC-000-01	SHEET 1	0	MARCH 2010
STD-EC-000-02	SHEET 2	0	MARCH 2010

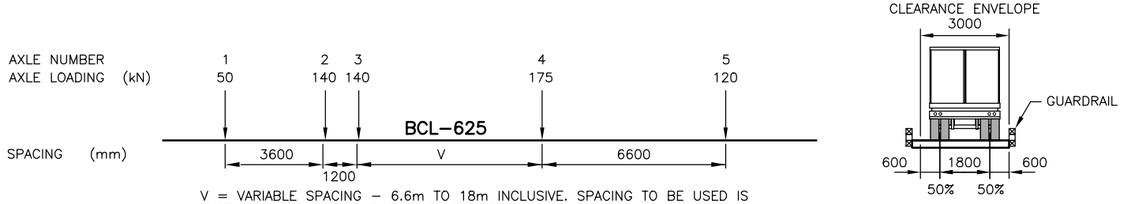
ASSUME NOT TO SCALE

1 DESIGN VEHICLES

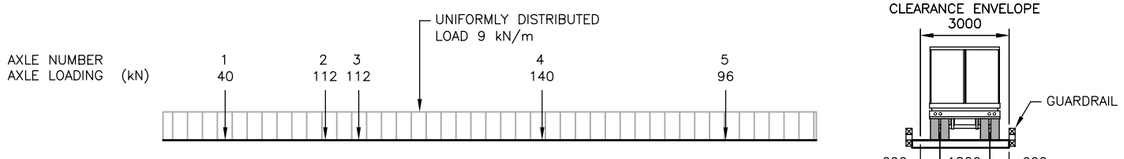
1.1 BRIDGES SHALL NOT BE DESIGNED FOR LOADS LESS THAN THE BCL-625. ALTERNATIVELY, BRIDGES SHOULD BE DESIGNED FOR THE L100, L150 OR L165 DESIGN VEHICLES AS SPECIFIED IN THE CONTRACT DOCUMENTS.

1.2 DESIGN LANES
- BRIDGES LESS THAN 6.096 M (20') WIDE SHALL BE DESIGNED FOR A SINGLE LANE OF TRAFFIC.
- MULTI-LANE LOADING
  - WHERE A BRIDGE IS ABLE TO SIMULTANEOUSLY SUPPORT MORE THAN ONE LANE OF TRAFFIC, THE DESIGNER SHOULD SEEK CLARIFICATION FROM THE MFR ON HOW TO ACCOUNT FOR MULTIPLE LOADED LANES.
- THE DESIGN DRAWINGS SHOULD CLEARLY SPECIFY THE VEHICLE LOADING SCENARIO THAT WAS USED FOR THE BRIDGE DESIGN INCLUDING NUMBER OF DESIGN LANES AND LOADS APPLIED TO EACH DESIGN LANE.

1.3 BCL-625 (63 710KG G.V.W.)
- THE BCL-625 IS AN IDEALIZED MULIT-AXLE HIGHWAY LEGAL DESIGN VEHICLE.
- THE BCL-625 TRUCK SHALL BE PLACED CENTRALLY IN A SPACE 3.0 M WIDE THAT REPRESENTS THE CLEARANCE ENVELOPE FOR EACH TRUCK. THE WHEEL SPACINGS, WEIGHT DISTRIBUTION AND CLEARANCE ENVELOPE OF THE BCL-625 SHALL BE AS SHOWN IN FIGURE 1.
- THE BCL-625 LANE LOAD CONSISTS OF A BCL-625 TRUCK WITH EACH AXLE REDUCED TO 80% OF THE SPECIFIED VALUE SUPERIMPOSED WITHIN A UNIFORMLY DISTRIBUTED LOAD OF 9 kN/m, AND 3.0 m WIDE AS SHOWN IN FIGURE 1. THE CLEARANCE ENVELOPE SHALL BE AS SHOWN IN FIGURE 1.
- APPLICATION
  - TRUCK AXLES THAT REDUCE THE LOAD EFFECT SHALL BE NEGLECTED.
  - THE UNIFORMLY DISTRIBUTED PORTION OF THE LANE LOAD SHALL NOT BE APPLIED TO THOSE PARTS OF A DESIGN LANE WHERE ITS APPLICATION DECREASES THE LOAD EFFECT.
  - FOR FLS AND SLS COMBINATION 1 AND 2, THE TRAFFIC LOAD SHALL BE ONE TRUCK ONLY, PLACED AT THE CENTRE OF THE TRAVELLED LANE. THE LANE LOAD SHALL NOT BE CONSIDERED.
  - FOR ULS, THE TRAFFIC LOAD SHALL BE THE TRUCK LOAD INCREASED BY THE DYNAMIC LOAD ALLOWANCE OR THE LANE LOAD, WHICHEVER PRODUCES THE MAXIMUM EFFECT. THIS LOAD SHALL BE PLACED LONGITUDINALLY AND TRANSVERSELY WITHIN THE DESIGN LANE AT A LOCATION AND IN A DIRECTION THAT PRODUCES THE MAXIMUM LOAD EFFECT. THE TRUCK SHALL NOT PROJECT BEYOND THE DESIGN LANE EXCEPT AS NOTED:
    - FOR COMPONENTS INCORPORATED INTO DECKS OTHER THAN MODULAR EXPANSION JOINTS, E.G., MANHOLE COVERS AND DRAINAGE GRATINGS, THE AXLE LOAD CONSIDERED SHALL BE AXLE NO. 2 OF THE BCL-625 TRUCK INCREASED BY THE APPLICABLE DYNAMIC LOAD ALLOWANCE.
    - FOR MODULAR EXPANSION JOINTS, THE AXLE LOAD CONSIDERED SHALL BE AXLE NO. 4 OF THE BCL-625 TRUCK INCREASED BY THE APPLICABLE DYNAMIC LOAD ALLOWANCE.
    - FOR DECKS AND OTHER COMPONENTS WHOSE DESIGN IS GOVERNED BY THE AXLE LOADS, THE TANDEM AXLE, COMPRISING AXLES NOS. 2 AND 3 OR AXLE NO. 4 OF THE BCL-625 TRUCK INCREASED BY THE APPLICABLE DYNAMIC LOAD ALLOWANCE WHICHEVER PRODUCES LARGER EFFECTS, SHALL BE CONSIDERED.
    - FOR DECK OVEHANGS OR ADJACENT TO A CURB, RAILING, OR BARRIER, THE MINIMUM DISTANCE FROM THE CENTRES OF THE WHEELS TO THE CURB, RAILING, OR BARRIER WALL SHALL BE 0.40 M.



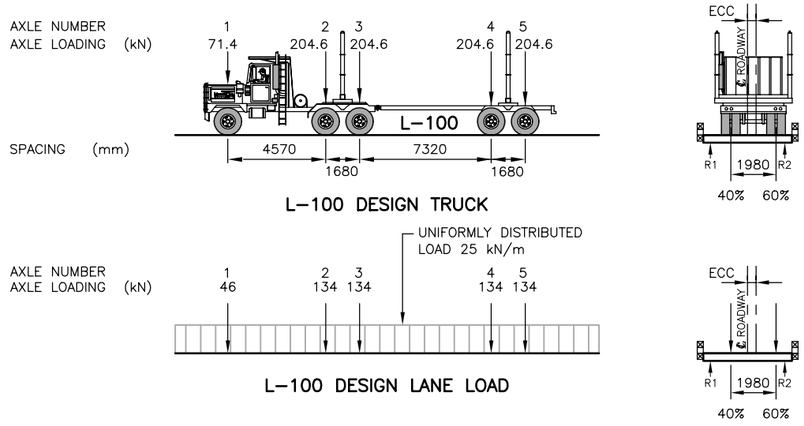
BCL–625 DESIGN TRUCK



BCL–625 DESIGN LANE LOAD

FIGURE 1
BCL–625 DESIGN VEHICLEM LOADS

1.4 L100 OFF-HIGHWAY LOGGING TRUCK (90,680kg. G.V.W.)
- THE L100 IS AN IDEALIZED FIVE AXLE OFF-HIGHWAY LOGGING TRUCK DESIGN VEHICLE.
- THE L100 LANE LOAD CONSISTS OF A L100 TRUCK WITH EACH AXLE REDUCED TO 65% OF THE SPECIFIED VALUE SUPERIMPOSED WITHIN A UNIFORMLY DISTRIBUTED LOAD OF 25 kN/m AS SHOWN IN FIGURE 2.
- APPLICATION
  - TRUCK AXLES THAT REDUCE THE LOAD EFFECT SHALL BE NEGLECTED.
  - THE UNIFORMLY DISTRIBUTED PORTION OF THE LANE LOAD SHALL NOT BE APPLIED TO THOSE PARTS OF A DESIGN LANE WHERE ITS APPLICATION DECREASES THE LOAD EFFECT.
  - FOR FLS AND SLS COMBINATION 1 AND 2, THE TRAFFIC LOAD SHALL BE ONE TRUCK ONLY, PLACED AT THE CENTRE OF THE TRAVELLED LANE. THE LANE LOAD SHALL NOT BE CONSIDERED. THE LATERAL WHEEL LOAD DISTRIBUTION SHALL BE 50%-50%.
  - FOR ULS, THE TRAFFIC LOAD SHALL BE THE TRUCK LOAD INCREASED BY THE DYNAMIC LOAD ALLOWANCE OR THE LANE LOAD, WHICHEVER PRODUCES THE MAXIMUM EFFECT. THIS LOAD SHALL BE PLACED LONGITUDINALLY AND TRANSVERSELY WITHIN THE DESIGN LANE AT A LOCATION AND IN A DIRECTION THAT PRODUCES THE MAXIMUM LOAD EFFECT BASED ON THE FOLLOWING:
    - FOR 4268 mm (14') WIDE DECKS, THE MAXIMUM TRANSVERSE ECCENTRICITY THAT SHOULD BE CONSIDERED FOR THE TRUCK AND LANE LOAD IS 400 mm FROM THE ROAD CENTRELINE
    - FOR DECK WIDTHS > 4268 mm (14') INCREASE THE TRANSVERSE ECCENTRICITY FROM THE ROAD CENTRELINE FOR THE TRUCK AND LANE LOAD BY 50% OF DECK WIDTH OVER 4268 mm.
    - THE LATERAL WHEEL LOAD DISTRIBUTION FOR THE TRUCK AND LANE LOAD SHALL BE 60%-40%.
    - FOR THE DESIGN OF DECKS AND OTHER COMPONENTS WHOSE DESIGN IS GOVERNED BY THE AXLE LOADS, THE TANDEM AXLE INCREASED BY THE APPLICABLE DYNAMIC LOAD ALLOWANCE SHALL BE CONSIDERED. THE LATERAL WHEEL LOAD DISTRIBUTION SHALL BE 60%-40%. FOR DECK OVERHANGS OR ADJACENT TO A CURB, RAILING, OR BARRIER, THE MINIMUM DISTANCE FROM THE CENTRES OF THE WHEELS TO THE CURB, RAILING, OR BARRIER WALL SHALL BE 0.40 M.



L–100 DESIGN TRUCK

L–100 DESIGN LANE LOAD

FIGURE 2
L–100 DESIGN VEHICLE LOADS

ASSUME NOT TO SCALE

BRITISH COLUMBIA The Best Place on Earth

MINISTRY OF FORESTS & RANGE
ENGINEERING BRANCH, FIELD OPERATIONS DIVISION

SCALE AS SHOWN

Designed J.H. Date MAR 2010
Checked D.I.H. Date MAR 2010
Drawn W.R. Date MAR 2010

Rev	Date	DESCRIPTION	Init

REVISIONS

STANDARD BRIDGE DRAWING

STANDARD BRIDGE DESIGN VEHICLES
SHEET 1

ORIGINAL SIGNED and SEALED BY: JULIEN HENLEY
APPROVED BY:

DESIGN ENGINEER
DATE JULIEN HENLEY
MOF ENGINEER
DATE

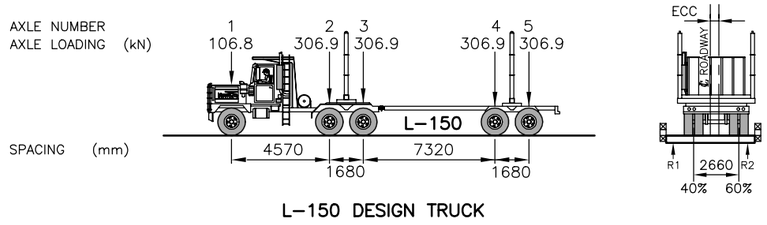
FILE No.

DRAWING No. STD–EC–000–001 0

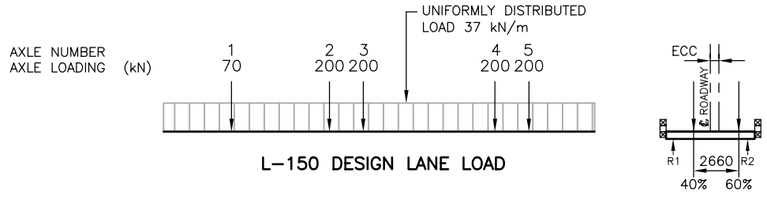
CANCEL PRINTS BEARING PREVIOUS LETTER

1.5 L150 (136,090kg. G.V.W.)

- THE L150 IS AN IDEALIZED FIVE AXLE OFF-HIGHWAY LOGGING TRUCK DESIGN VEHICLE.
- THE L150 LANE LOAD CONSISTS OF A L150 TRUCK WITH EACH AXLE REDUCED TO 65% OF THE SPECIFIED VALUE SUPERIMPOSED WITHIN A UNIFORMLY DISTRIBUTED LOAD OF 37 kN/m AS SHOWN IN FIGURE 3.
- APPLICATION
  - TRUCK AXLES THAT REDUCE THE LOAD EFFECT SHALL BE NEGLECTED.
  - THE UNIFORMLY DISTRIBUTED PORTION OF THE LANE LOAD SHALL NOT BE APPLIED TO THOSE PARTS OF A DESIGN LANE WHERE ITS APPLICATION DECREASES THE LOAD EFFECT.
  - FOR FLS AND SLS COMBINATION 1 AND 2, THE TRAFFIC LOAD SHALL BE ONE TRUCK ONLY, PLACED AT THE CENTRE OF THE TRAVELLED LANE. THE LANE LOAD SHALL NOT BE CONSIDERED. THE LATERAL WHEEL LOAD DISTRIBUTION SHALL BE 50%-50%.
  - FOR ULS, THE TRAFFIC LOAD SHALL BE THE TRUCK LOAD INCREASED BY THE DYNAMIC LOAD ALLOWANCE OR THE LANE LOAD, WHICHEVER PRODUCES THE MAXIMUM EFFECT. THIS LOAD SHALL BE PLACED LONGITUDINALLY AND TRANSVERSELY WITHIN THE DESIGN LANE AT A LOCATION AND IN A DIRECTION THAT PRODUCES THE MAXIMUM LOAD EFFECT BASED ON THE FOLLOWING:
    - FOR 4876 mm (16') WIDE DECKS, THE MAXIMUM TRANSVERSE ECCENTRICITY THAT SHOULD BE CONSIDERED FOR THE TRUCK AND LANE LOAD IS 400 mm FROM THE ROAD CENTRELINE
    - FOR DECK WIDTHS > 4876 mm (16') INCREASE THE TRANSVERSE ECCENTRICITY FROM THE ROAD CENTRELINE FOR THE TRUCK AND LANE LOAD BY 50% OF DECK WIDTH OVER 4876 mm.
    - THE LATERAL WHEEL LOAD DISTRIBUTION FOR THE TRUCK AND LANE LOAD SHALL BE 60%-40%.
    - FOR THE DESIGN OF DECKS AND OTHER COMPONENTS WHOSE DESIGN IS GOVERNED BY THE AXLE LOADS, THE TANDEM AXLE INCREASED BY THE APPLICABLE DYNAMIC LOAD ALLOWANCE SHALL BE CONSIDERED. THE LATERAL WHEEL LOAD DISTRIBUTION SHALL BE 60%-40%. FOR DECK OVERHANGS OR ADJACENT TO A CURB, RAILING, OR BARRIER, THE MINIMUM DISTANCE FROM THE CENTRES OF THE WHEELS TO THE CURB, RAILING, OR BARRIER WALL SHALL BE 0.40 M.



L–150 DESIGN TRUCK

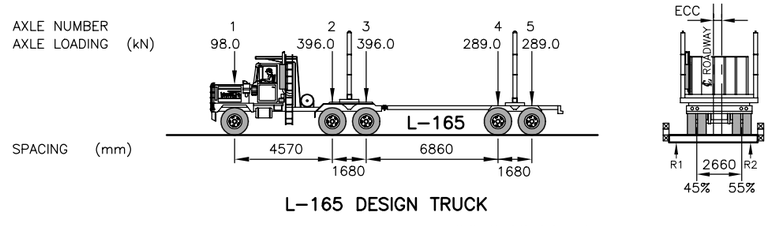


L–150 DESIGN LANE LOAD

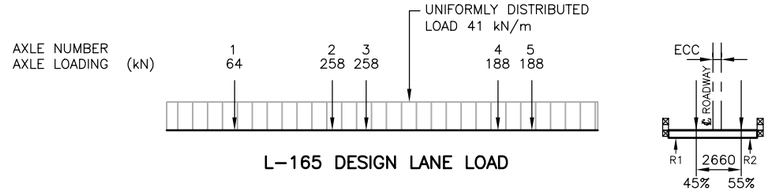
FIGURE 3
L–150 DESIGN VEHICLE LOADS

1.6 L165 (149,700kg. G.V.W.)

- THE L165 IS AN IDEALIZED FIVE AXLE OFF-HIGHWAY LOGGING TRUCK DESIGN VEHICLE.
- THE L165 LANE LOAD CONSISTS OF A L165 TRUCK WITH EACH AXLE REDUCED TO 65% OF THE SPECIFIED VALUE SUPERIMPOSED WITHIN A UNIFORMLY DISTRIBUTED LOAD OF 41 kN/m AS SHOWN IN FIGURE 4.
- APPLICATION
  - TRUCK AXLES THAT REDUCE THE LOAD EFFECT SHALL BE NEGLECTED.
  - THE UNIFORMLY DISTRIBUTED PORTION OF THE LANE LOAD SHALL NOT BE APPLIED TO THOSE PARTS OF A DESIGN LANE WHERE ITS APPLICATION DECREASES THE LOAD EFFECT.
    FOR FLS AND SLS COMBINATION 1 AND 2, THE TRAFFIC LOAD SHALL BE ONE TRUCK ONLY, PLACED AT THE CENTRE OF THE TRAVELLED LANE. THE LANE LOAD SHALL NOT BE CONSIDERED. THE LATERAL WHEEL LOAD DISTRIBUTION SHALL BE 50%-50%.
  - FOR ULS, THE TRAFFIC LOAD SHALL BE THE TRUCK LOAD INCREASED BY THE DYNAMIC LOAD ALLOWANCE OR THE LANE LOAD, WHICHEVER PRODUCES THE MAXIMUM EFFECT. THIS LOAD SHALL BE PLACED LONGITUDINALLY AND TRANSVERSELY WITHIN THE DESIGN LANE AT A LOCATION AND IN A DIRECTION THAT PRODUCES THE MAXIMUM LOAD EFFECT BASED ON THE FOLLOWING:
    - FOR 4876 mm (16') WIDE DECKS, THE MAXIMUM TRANSVERSE ECCENTRICITY THAT SHOULD BE CONSIDERED FOR THE TRUCK AND LANE LOAD IS 450 mm FROM THE ROAD CENTRELINE
    - FOR DECK WIDTHS > 4876 mm (16') INCREASE THE TRANSVERSE ECCENTRICITY FROM THE ROAD CENTRELINE FOR THE TRUCK AND LANE LOAD BY 50% OF DECK WIDTH OVER 4876 mm.
    - THE LATERAL WHEEL LOAD DISTRIBUTION FOR THE TRUCK AND LANE LOAD SHALL BE 55%-45%.
    - FOR THE DESIGN OF DECKS AND OTHER COMPONENTS WHOSE DESIGN IS GOVERNED BY THE AXLE LOADS, THE TANDEM AXLE INCREASED BY THE APPLICABLE DYNAMIC LOAD ALLOWANCE SHALL BE CONSIDERED. THE LATERAL WHEEL LOAD DISTRIBUTION SHALL BE 55%-45%. FOR DECK OVERHANGS OR ADJACENT TO A CURB, RAILING, OR BARRIER, THE MINIMUM DISTANCE FROM THE CENTRES OF THE WHEELS TO THE CURB, RAILING, OR BARRIER WALL SHALL BE 0.40 M.



L–165 DESIGN TRUCK



L–165 DESIGN LANE LOAD

FIGURE 4
L–165 DESIGN VEHICLE LOADS

ASSUME NOT TO SCALE

BRITISH COLUMBIA The Best Place on Earth

MINISTRY OF FORESTS & RANGE
ENGINEERING BRANCH, FIELD OPERATIONS DIVISION

SCALE AS SHOWN

Designed J.H. Date MAR 2010
Checked D.J.H. Date MAR 2010
Drawn W.R. Date MAR 2010

Rev	Date	DESCRIPTION	Init	

REVISIONS

STANDARD BRIDGE DRAWING

STANDARD BRIDGE DESIGN VEHICLES
SHEET 2

ORIGINAL SIGNED and SEALED BY: JULIEN HENLEY
APPROVED BY:

DESIGN ENGINEER JULIEN HENLEY
DATE
MOF ENGINEER
DATE

FILE No.

DRAWING No. STD–EC–000–02 0

CANCEL PRINTS BEARING PREVIOUS LETTER