

Truck Weights - Gross Vehicle Weight and Axle Weights

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56 axles

1.5 million lbs.

Width – 26'3"
Length – 210'4"



1 big load =  x 19

Road Design

- 20 years
- Traffic volume
 - Passenger vehicles, Trucks
- ESAL concept
 - Equivalent single axle load – 18,000 #
 - Measure the effect of heavy vehicles on pavement and gravel.

FHWA Vehicle Classifications

1. Motorcycles

2 axles, 2 or 3 tires



2. Passenger Cars

2 axles, can have 1- or 2-axle trailers



3. Pickups, Panels, Vans

2 axles, 4-tire single units
Can have 1 or 2 axle trailers



4. Buses

2 or 3 axles, full length



5. Single Unit 2-Axle Trucks

2 axles, 6 tires (dual rear tires), single-unit



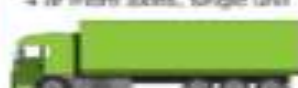
6. Single Unit 3-Axle Trucks

3 axles, single unit



7. Single Unit 4 or More-Axle Trucks

4 or more axles, single unit



8. Single Trailer 3- or 4-Axle Trucks

3 or 4 axles, single trailer



9. Single Trailer 5-Axle Trucks

5 axles, single trailer



10. Single Trailer 6 or More-Axle Trucks

6 or more axles, single trailer



11. Multi-Trailer 5 or Less-Axle Trucks

5 or less axles, multiple trailers



13. Multi-Trailer 7 or More-Axle Trucks

7 or more axles, multiple trailers



12. Multi-Trailer 6-Axle Trucks

6 axles, multiple trailers



US 2 Eastbound

1,270,000 ESAL's



1967 Lincoln Continental
0.0004 ESALs



Impact to Roadway

	ESALS
• 5 or 6 cars	1.0
• 5-axle tractor-semitrailer at 80,000 lbs.	2.4
at 90,000 lbs.	4.1
• 6-axle tractor-semitrailer at 90,000 lbs.	2.0
at 94,000 lbs.	2.3
• 7-axle tractor-semitrailer at 97,000 lbs.	1.5
• 8-axle double at 108,000 lbs.	1.8

6 axle truck and semitrailer

= 2.3 ESAL of road
life

48,000 lbs.
1.015 ESAL

34,000 lbs
1.08 ESALS

12,000 lbs
.102 ESALS



- Single Axle

20,000 lbs. – 1.5 ESALS

24,000 lbs. - 3.1 ESALS







10:53 AM 6/6/17

143° N- M
Lat: 46.854076° N Lon: 102.894344° W







LoadPass
PERMITS

Win Win Win

Largest GVW I have ever seen by far



- for NDLTAP**
 - Advances mission of preserving a safe & efficient local road system
- for the motor carrier industry**
 - Automated & convenient
- for local road departments**
 - Protects local roads & bridges & allocated fees
- for taxpayers and daily road users**
 - Safer roads & dollars saved



LOAD COMPARISON

Big Load	vs. 18-Wheeler
1.5 million lbs.	80,000 lbs.
56 axles	5 axles
224 tires	18 tires
Width: 26'	8'6"
Height: 24'	14'
Length: 210'	75'

1 big load =  x 19

RECENT CHALLENGE

Move 1.5 million lb. load

CHALLENGE ACCEPTED

LoadPass facilitated the permitting process

END RESULT

Large load delivered; infrastructure not compromised

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<http://dotsc.ugpti.ndsu.nodak.edu/TWC/>
FREE APP

North Dakota
**TRUCK-WEIGHT
CALCULATOR**



- The **Truck Weight Calculator** helps determine whether a vehicle will meet axle and gross vehicle weight requirements that apply to the weight of vehicles on a highway. Vehicle weight values may vary for ND, SD, Dakota, and other states or highways.
- The **calculator** for this application is a simple-to-use app.
- The **app** features a user-friendly interface and is available on both iOS and Android.
- The **calculator** provides a graphical view of the axle weight and gross weight results.

Weight calculator for a vehicle traveling in North Dakota also state the weight and axle weight requirements that apply to the weight of vehicles on the highway in North Dakota's interstate systems.

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