

# Self Study Refresher Training

## Washington State Department of Transportation Commercial Vehicle Services

**Paula Hammond**  
Secretary of Transportation

**Dave Dye**  
Deputy Secretary

**Steve Reinmuth**  
Chief of Staff





# MISSION STATEMENTS

## ▪ **Commercial Vehicle Services:**

“Our mission is to expedite commercial vehicle freight traffic in concert with the motoring public safely maximizing our states infrastructure life.”

## ▪ **Permitting Office:**

“Our mission is to provide an efficient and timely permitting process to move oversize and overweight loads on our state’s highway systems, protecting the motoring public and our state’s infrastructure.”

# OBJECTIVES

- Understand the various laws and regulations regarding oversize/overweight vehicles in Washington State.
- Know the legal dimensions of various vehicle combinations and when a permit is needed for dimension.
- Understand legal and permitted weight limitations for a single axle and axle groups.
- Accurately issue a WSDOT permit.

# DEFINITIONS



**Single Unit** - Any vehicle that is self propelled that does not have a trailer. (i.e. crane, concrete pump or a truck without a trailer)

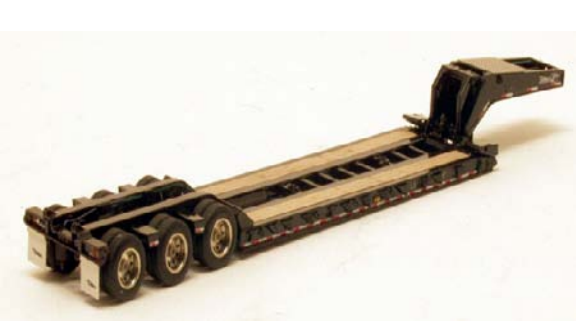


**Truck** - Single motor vehicle designed to carry freight. This vehicle can carry freight with or without a trailer attached. A truck can be a single unit or a combination truck and trailer.

# DEFINITIONS ...



- **Tractor** - Single motor vehicle designed to pull semi-trailer. (Fifth Wheel)

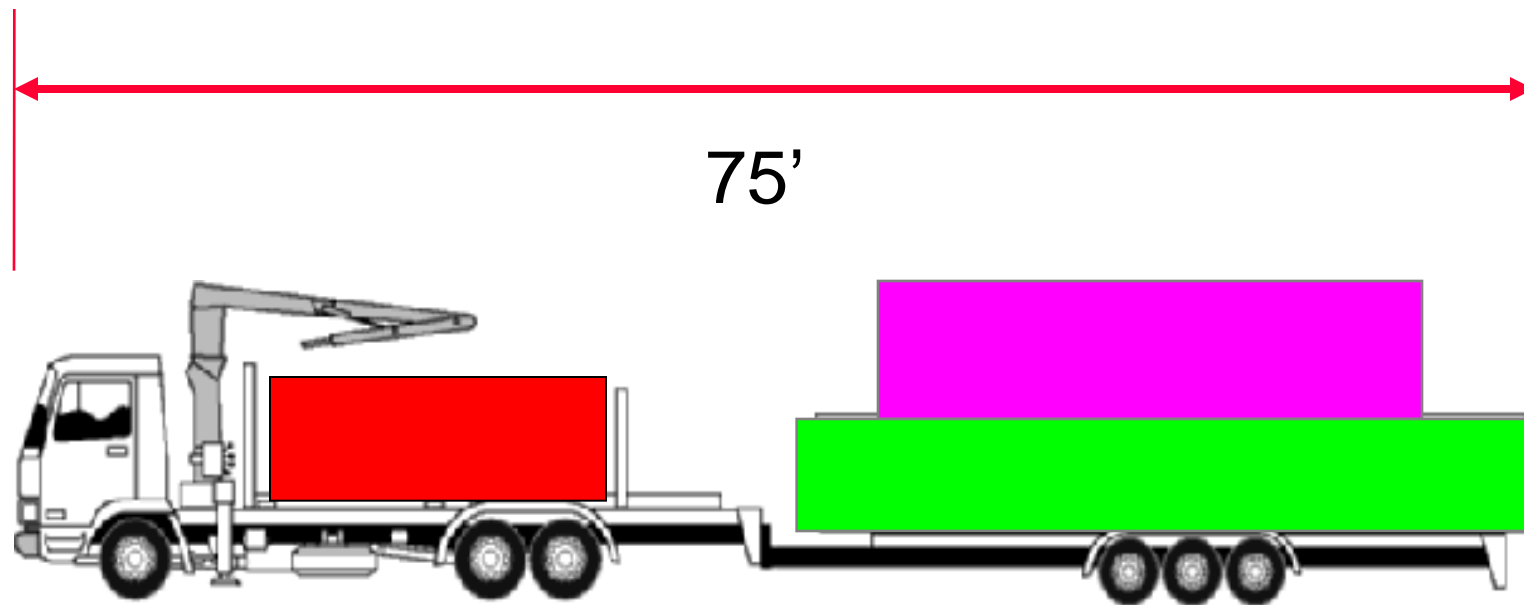


- **Semi-trailer** - Designed to carry load and pulled by tractor. (Shares the weight with the tractor and includes all jeeps and boosters.)





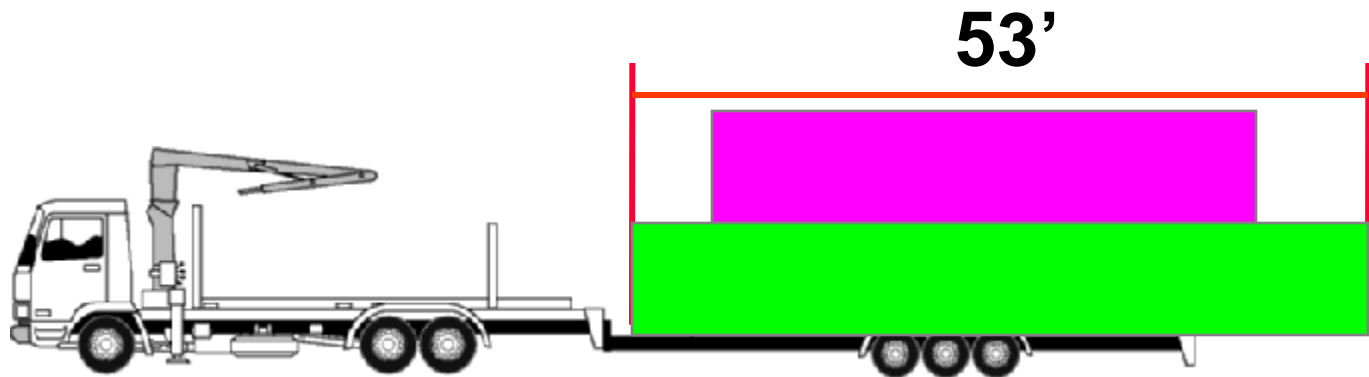
# TRUCK/TRAILER LENGTH WITH LOAD



Permitted up to 85'

# TRUCK/TRAILER LENGTH (EMPTY TRUCK)

Would now be treated as  
Tractor/Trailer

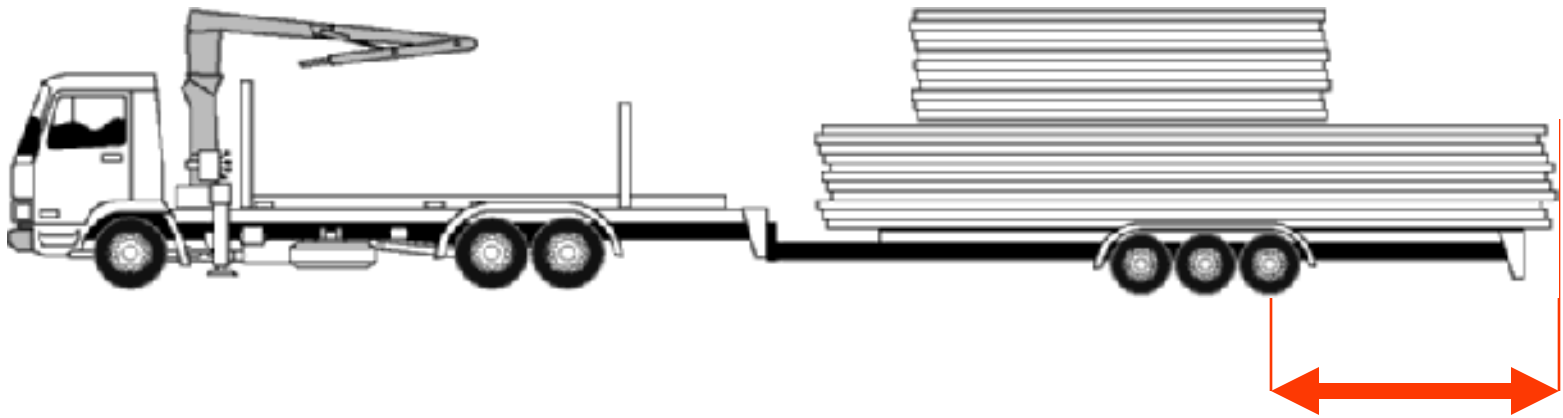


Permitted up to 125' 7

# Legal Dimensions

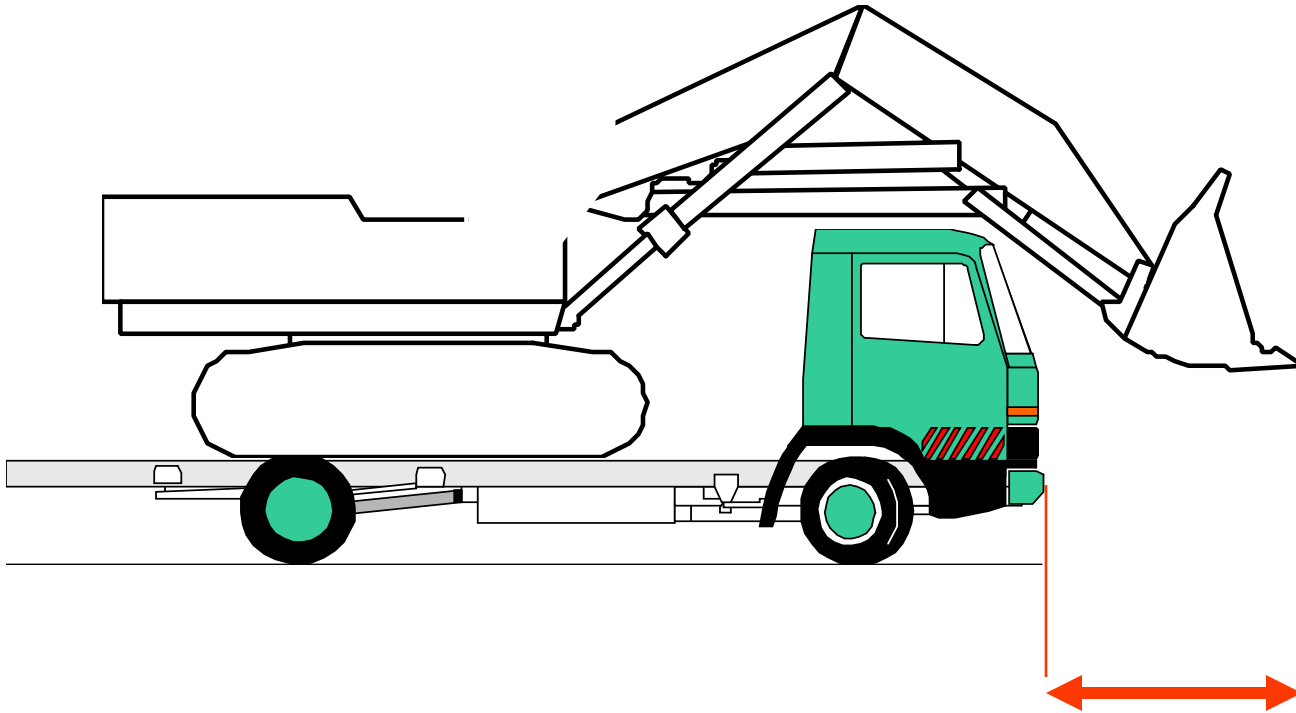
- Height: 14 feet
- Width: 8 feet 6 inches
- Length:
  - Single Unit 40 feet
  - Semi Trailer 53 feet
  - Truck/Trailer 75 feet
  - Double Trailer 61 feet
  - Rear Overhang 15 feet
  - Front Overhang 3 feet

# Legal Overhang-Rear



**15 ft measured from center of last axle**

# Legal Overhang-Front



Measured 3 ft. from front of the  
manufacture front bumper

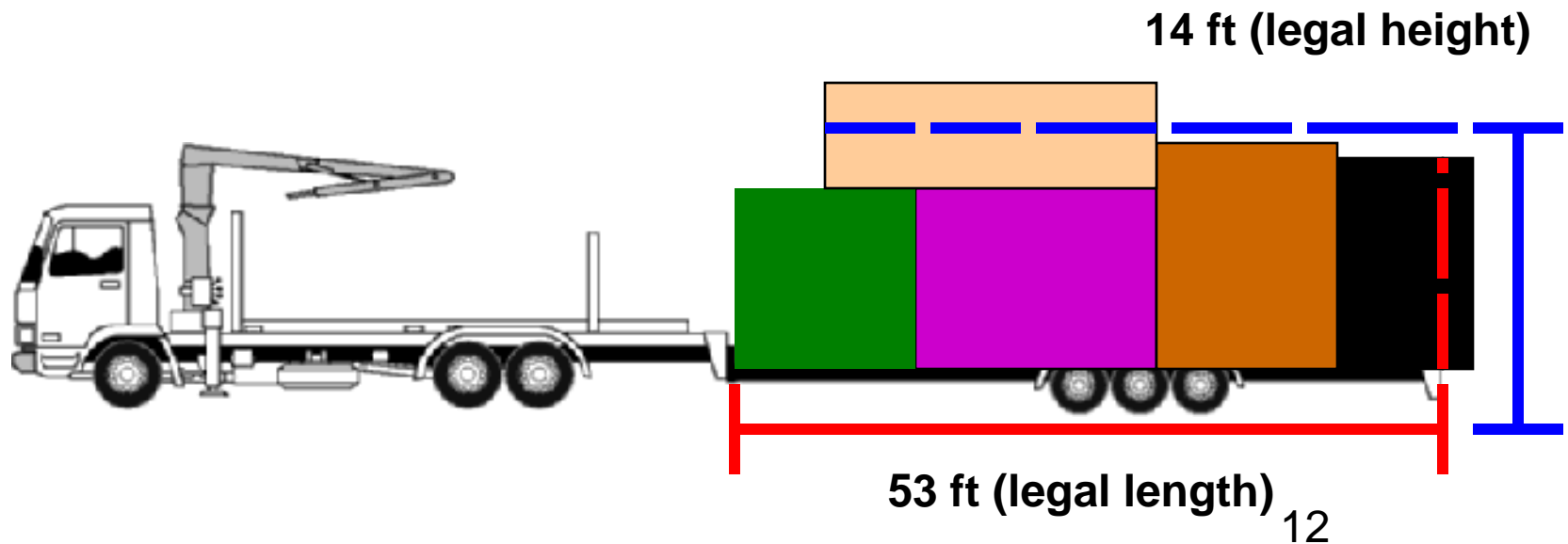
# Divisible Loads

- Multiple pieces cannot exceed legal dimensions.
- Multiple pieces cannot be over gross weight or over axle weight.



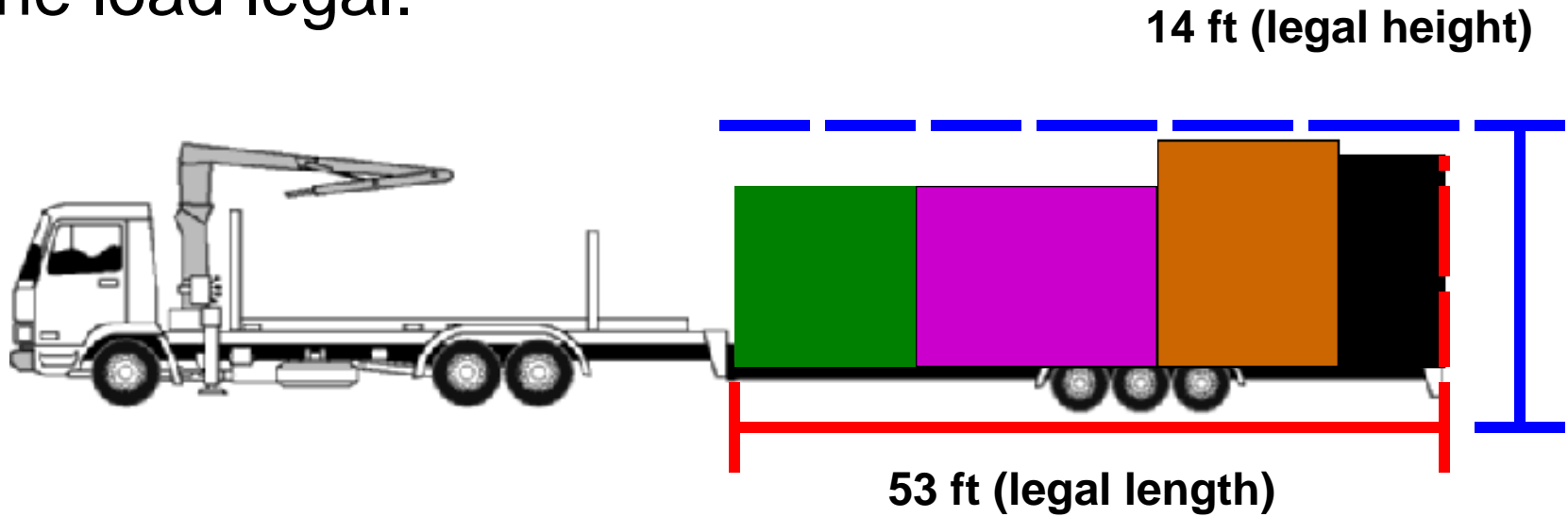
# Divisible Loads

- Dimensional permits for multiple pieces must not be placed in conjunction (side by side, end to end or stacked) to create an over legal dimension.



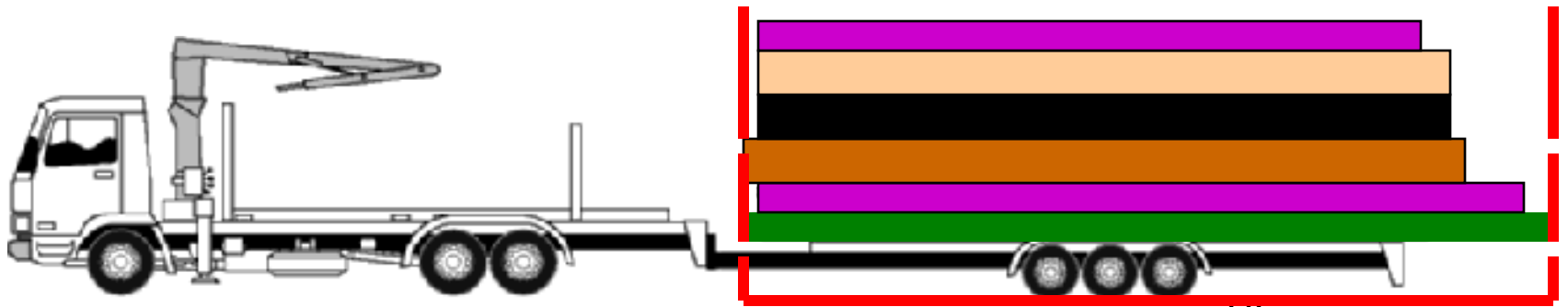
# Divisible Loads

- The load must be reduced to a practical minimum.
- Some pieces may need to be removed to make the load legal.

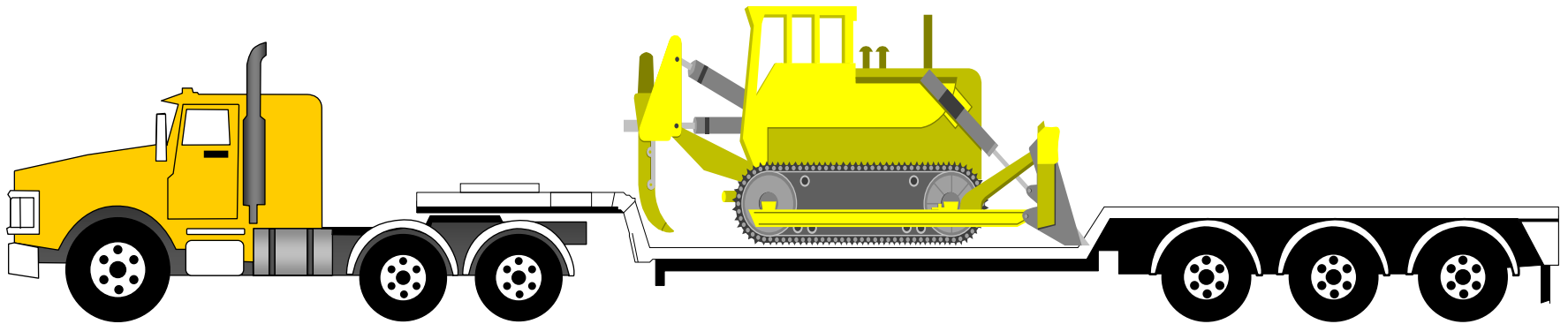


# Creating an Envelope

- Creating an envelope allows a carrier to have multiple pieces as long as everything fits within the dimensions of the largest piece. The green item is the largest and creates the envelope for the other pieces.



# A **Non-Divisible Load** cannot be made smaller or lighter

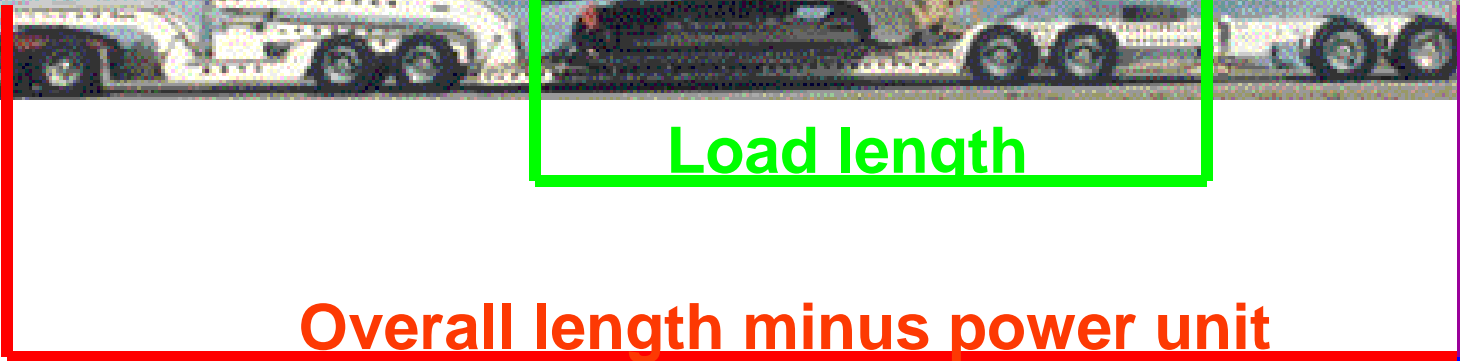


## Exceptions: (overweight)

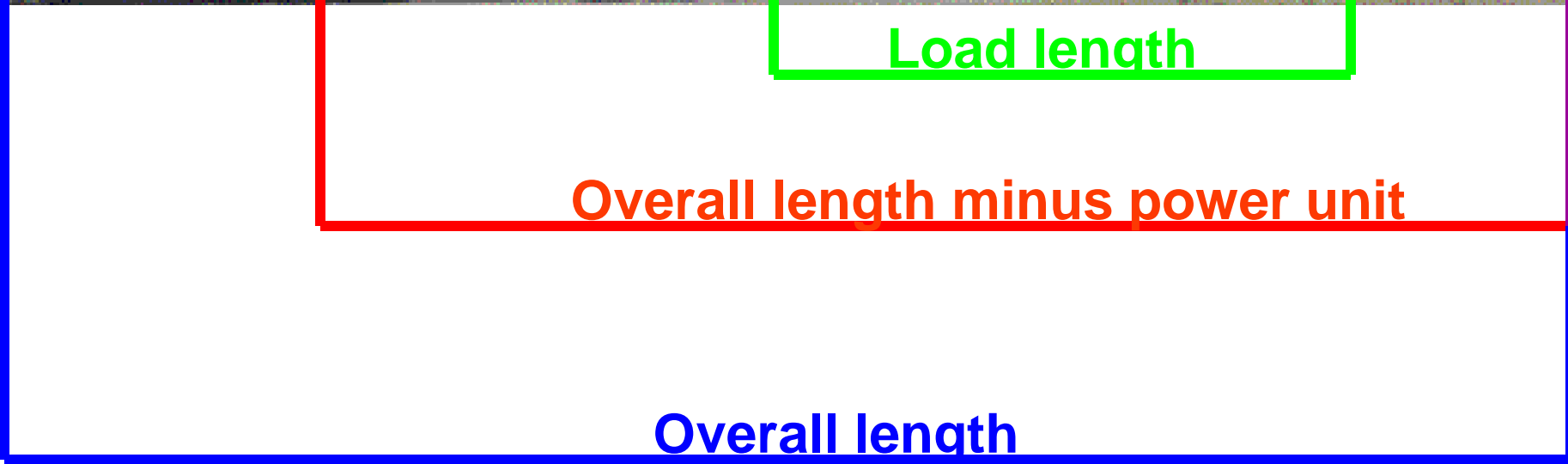
- Dozers may have blade detached sitting on trailer. No multiple blades.
- Loaders may have bucket detached as long as it is a pertinent piece for that equipment. No multiple buckets.



Load length



Overall length minus power unit



Overall length

# Various Measurements

- Load Length
  - Measures the load or trailer (whichever is longer)
- Overall Length Minus the Power Unit
  - Measurement from the beginning of the trailer or load (whichever is closest to the cab) to the end of the trailer or load (whichever is longer).
- Overall Length
  - Measurement from the front bumper to the end of the load or trailer (whichever is longer)



# Escort / Pilot Requirements

## Width

Over 11 ft. wide / 2 pilots on 2-lane highways  
Over 14 ft. wide / 1 rear pilot on all highways

## Height

Over 14 ft 6 in / 1 front pilot on all highways with a height pole  
(manufactured homes allowed up to 15 ft)



## Length

Over 105 ft. trailer/load length-One rear pilot on 2-lane highway  
Over 125 ft / One rear pilot on all highways

## Overhangs

Over 20 ft of front overhang (FOH)/ One front pilot on all highway  
Rear overhang (ROH) exceeding 20 ft of a single unit vehicle / requires 1 rear on 2 lane hwys



Single unit ROH exceeds 1/3 of overall length or  
Combination loads ROH exceeds 1/3 of trailer/load length / One rear pilot on all highways.

# Escort Drivers



- Must be certified in the State of Washington  
Must have valid card on person while performing escort vehicle duties.
- Certification reciprocity with the States of Utah, North Carolina, Colorado Okalahoma, and Florida only.

## Escort Car Requirements

WAC 468-38-100

(When escort cars are required)



# Routine Night-time Travel

Limited to:

Width            12 ft.

Height           14 ft. 6 in.

Length           105 ft.

**\*\*No notation on permit is required within above restrictions\*\***

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Beyond these limits, a letter must be submitted to CVS for special approval. If approval is granted, approval must be stated on the permit.



# Lighting Requirements

Federal Regulations CFR 393.11

- Amber to the front
- Red to the rear
- All four corners of the extremities must be flagged during daylight & lit at night.



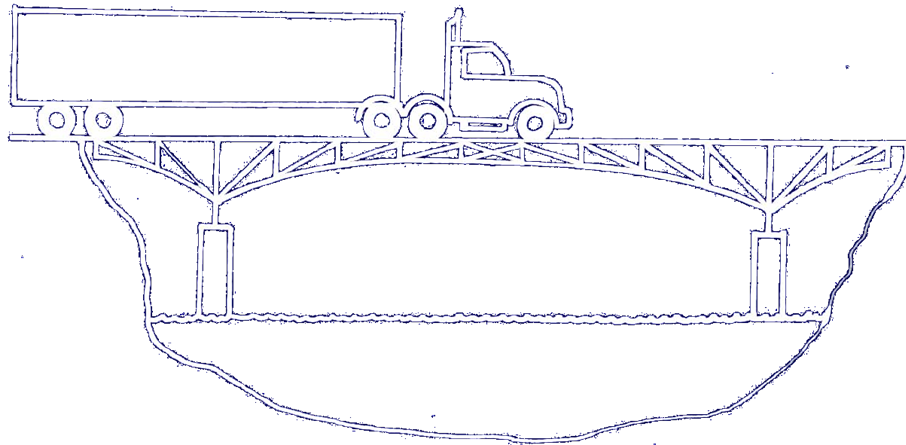
# Permit Desk Guide

**For WSDOT employees please update your permit desk guide every six months.**

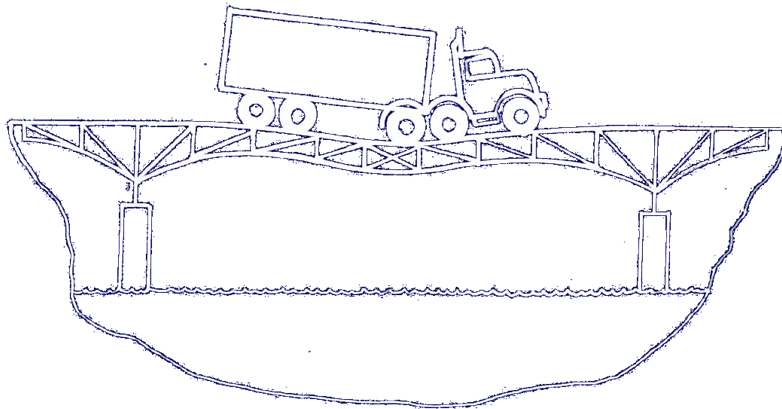
**WSDOT Permit offices need to have access to the most recent permit desk guide. If you have any questions please contact Commercial Vehicle Services (360) 704-6340.**



# IMPACT ON BRIDGES



- Bridge Formula axle spread



- Insufficient axle spread



# Legal Axle Weights

## Legal Weight

- Single Axle - 20,000 lbs
- Tandem Axle - 34,000 lbs
- Tire weight on steer axles - 600 lbs per inch of the tire width
- All other axles are 500 lbs
- Gross weight is legal up to 105,500 lbs



# Weight Limitations

- Weights cannot exceed what the tire size allows.
- Weights cannot exceed what the axle allows
- Weights cannot exceed what the axle group allows



## Electronic Weight Calculator

- Helpful tool for knowing the weight limitations of a vehicle combination or single unit.
- An axle spacing report number is required for each overweight permit.
- The report number will be assigned to the configuration you provide.



### Vehicle Size & Weight Permits

## Axle Spacing Report

Axle Spacing Report No.  [Look Up](#) [Calculate](#) [Search](#) [Clear](#) [Save](#) [Print](#) [Void](#) [Return](#)

Enter an Axle Spacing Report number above and click [Look Up](#).

Or, enter axle spacing, tires per axle and tire sizes and click [Calculate](#) and then [Save](#) for a new Axle Sp

| Axle No.                       | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        | 8                        | 9                        | 10                       |
|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Axle Spacing (ft.)             | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     |
| Tires per Axle                 | <input type="text"/> Cnt | <input type="text"/> Cnt | <input type="text"/> Cnt | <input type="text"/> Cnt | <input type="text"/> Cnt | <input type="text"/> Cnt | <input type="text"/> Cnt | <input type="text"/> Cnt | <input type="text"/> Cnt | <input type="text"/> Cnt |
| Tires Size (in. or mm)         | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     |
| Steer Axle                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Drop Axle                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Permitted Weight (see Remarks) | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     | <input type="text"/>     |

Total Permitted  Legal Weight  [More Axles](#) [Less](#)

Axle Restriction and Remarks for Permitted Weights

The distance between each axle

How many tires per axle

Tire size of all two-tire axles

Indicate if you have any drop axles and if it is a self steering drop axle

## Vehicle Size & Weight Permits

### Axle Spacing Report

Axle Spacing Report No.  [Look Up](#) [Calculate](#) [Search](#) [Clear](#) [Save](#) [Print](#) [View](#) [E](#)

Enter an Axle Spacing Report number above and click Look Up.  
Or, enter axle spacing, tires per axle and tire sizes and click Calculate and then Save for a new A

| Axle No.                   | 1                                  | 2                                  | 3                                  | 4                                  | 5                                  | 6                                  | 7                                    | 8                                    |
|----------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|--------------------------------------|
| Axle Spacing (ft.)         | 13-6                               | 4-6                                | 33-6                               | 4-6                                | 4-6                                |                                    |                                      |                                      |
| Tires per Axle             | 2 <input type="button" value="v"/> | 4 <input type="button" value="v"/> | 4 <input type="button" value="v"/> | 4 <input type="button" value="v"/> | 4 <input type="button" value="v"/> | 4 <input type="button" value="v"/> | Cnt <input type="button" value="v"/> | Cnt <input type="button" value="v"/> |
| Tires Size (in. or mm)     | 11                                 |                                    |                                    |                                    |                                    |                                    |                                      |                                      |
| <a href="#">Steer Axle</a> |                                    | <input type="checkbox"/>           | <input type="checkbox"/>           | <input type="checkbox"/>           | <input type="checkbox"/>           | <input type="checkbox"/>           | <input type="checkbox"/>             | <input type="checkbox"/>             |
| Drop Axle                  |                                    | <input type="checkbox"/>           | <input type="checkbox"/>           | <input type="checkbox"/>           | <input type="checkbox"/>           | <input type="checkbox"/>           | <input type="checkbox"/>             | <input type="checkbox"/>             |
| Permitted Weight           |                                    |                                    |                                    |                                    |                                    |                                    |                                      |                                      |

Dashes indicate feet and inches

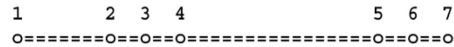
- When inputting tire size, do not use alpha characters.
- The first number indicates **tire width**
- An 11R 22.5 tire should be listed as, “11”

- After calculating and saving the axle spacing report, a five digit axle spacing report number.\* will be provided

- Send a copy of this axle spacing report to the carrier for future use with this combination.

eSNOOPI Axle Spacing Report No.\* 23115

Vehicle Layout



7 Axles - Length: 68.00 ft. - Axle Groups: 2-4, 5-7

| Axle No.                        | 1      | 2       | 3       | 4       | 5       | 6       | 7       | 8 | 9 | 10 |
|---------------------------------|--------|---------|---------|---------|---------|---------|---------|---|---|----|
| Axle Spacing (ft.)              | 15.00  | 5.00    | 5.00    | 33.00   | 5.00    | 5.00    |         |   |   |    |
| Tires (count/size)              | 2/11   | 4       | 4       | 4       | 4       | 4       | 4       |   |   |    |
| Axle Type                       | steer  |         |         |         |         |         |         |   |   |    |
| Permitted Weight (*see Remarks) | 13,200 | 22,000* | 22,000* | 22,000* | 22,000* | 22,000* | 22,000* |   |   |    |

| Total Permitted Weight | Legal Weight |
|------------------------|--------------|
| 143,200                | 99,200       |

Axle Restrictions and Remarks for Permitted Weights:

Axles 2-4 NTE 65,000 lbs.

Axles 5-7 NTE 65,000 lbs.

\*\*This is the axle spacing report for the vehicle configuration described. Displayed are the legal weight limits and the maximum permitted weights allowed for this configuration.

The report number displayed at the top of this page is required for any future weight permits for this configuration.

# Permitted Weights

## Limits

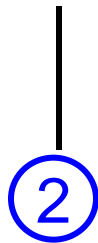
- Single Axle - 22,000 lbs
- Tandem Axle - 43,000 lbs
- Tire weight on all axles - 600 lbs per inch tire width

# Overweight Permits

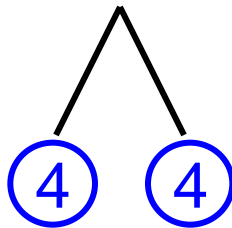
- If the carrier has a legal gross weight, but is over axle weight an oversize/overweight permit is required
- If a carrier has more excess axle weight than excess gross weight the axle weight needs to be listed on the permit
- If the carrier has more excess gross weight than excess axle weight only the gross weights needs to be listed on the permit.

Steer axle tire size is 12"

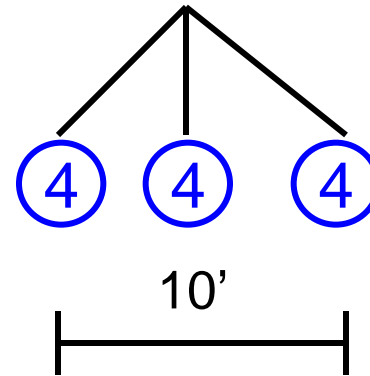
12,000 lbs



35,500 lbs



42,000 lbs



**Per Axle: Legal Weights Allowed**

**Axle 1 14,400**

**Axle 2-3 34,000**

**Axle 4-6 43,500**

**Total 91,900**

**Per Axle: GVW (actual weights)**

**Axle 1 12,000**

**Axle 2-3 35,500 (1,500 excess)**

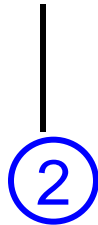
**Axle 4-6 42,000**

**Total 89,500**

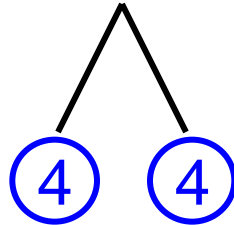
Note, the GVW is less than the legal weight. However, the axle weight on axles 2 & 3 (tandem axle group) is 35,500 lbs. This will need to be listed on the permit. Even if the gross weight is legal there still needs to be weights listed on the permit.

Steer axle tire size is 12"

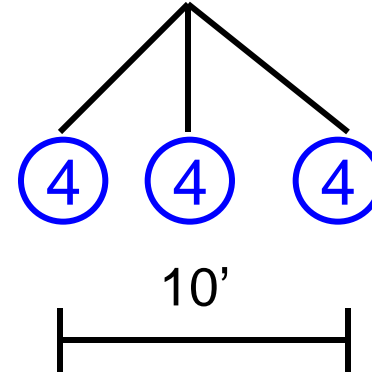
12,000 lbs



34,000 lbs



55,000 lbs



**Per Axle: Legal Weights Allowed**

**Axle 1 14,400**

**Axle 2-3 34,000**

**Axle 4-6 43,500**

**Per Axle: GVW (actual weights)**

**Axle 1 12,000**

**Axle 2-3 34,000**

**Axle 4-6 55,000 (11,500 excess)**

**Total 91,900**

**Total 101,000 (9,100 excess)**

In this configuration the gross weight is greater than the legal weight (101,000 lbs / 91,900 lbs). eSNOOPI charges based off of the excess weight. The fee chart says, "0 lbs to 9,999 lbs = 7 cents per mile traveled." A closer look at this configuration shows tridem axle group 4-6 = 55,000 lbs. That axle group is legal at 43,500 lbs. 55,000 lbs / 43,500 lbs has an excess weight of 11,500 lbs. Making the fee 14 cents per mile. This over axle weight needs to be listed on the permit.

**Enter the gross and legal weight**

**Also, enter the gross axle weight. In this case, only axles 4-6 were excess. Enter the legal weight for that group.**

**Note the excess axle weight is greater than the excess gross weight.**

**In the "Other Information" section note which axles are over weight.**

[Hand Written](#)      [New Axle Spacing Report](#)

Company: A TRUCKING CO  
Vehicle: 12345  
Axle Report #: 26307      [View Report](#)      Axle Spacing report number is required for Overwe  
[Click Here](#) if you need a new Axle Spacing Report number.

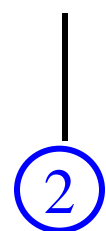
Load Description\*: HITACHI EXCAVATOR  
Issue Date\*: 1/13/2009  
Start Date\*: 1/13/2009      Expire Date: 01/15/2009  
Range\*: 3 Days       No  Return Trip  
Origin\*: SEATTLE      Destination\*: SPOKANE  
 Tractor/Trailer     Truck/Trailer     Tractor/Double Trailer     Single Unit

PU Axle: 3      Trailer Axle: 3  
Gross Weight: 101000      Width: [ ] ft [ ] in  
Legal Weight: 91900      Height: [ ] ft [ ] in  
Excess Weight: 9100      Total Length: Not Applicable  
Gross Axle: 55000      Trlr/Load Length: [ ] ft [ ] in  
Legal Axle: 43500      Front Overhang: [ ] ft [ ] in  
Excess Axle: 11500      Rear Overhang: [ ] ft [ ] in

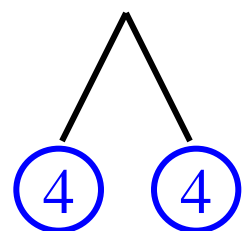
Other Information: \*\*\*OVER AXLE WEIGHT ON AXLES 4-6\*\*\*

Steer axle tire size is 12"

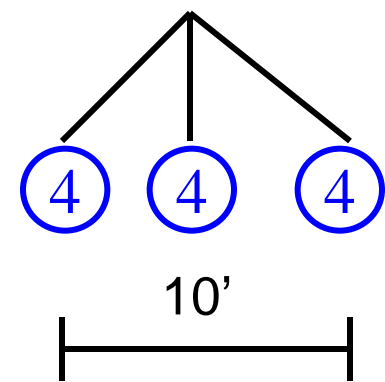
12,000 lbs



35,500 lbs

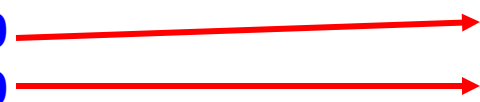


43,600 lbs



| Per Axle:    | Legal Weights Allowed |
|--------------|-----------------------|
| Axle 1       | 14,400                |
| Axle 2-3     | 34,000                |
| Axle 4-6     | 43,500                |
| <b>Total</b> | <b><u>91,900</u></b>  |

| Per Axle:    | GVW (actual weights)  |
|--------------|-----------------------|
| Axle 1       | 12,000                |
| Axle 2-3     | 35,500 (1,500 excess) |
| Axle 4-6     | 43,600 (100 excess)   |
| <b>Total</b> | <b><u>91,100</u></b>  |



Occasionally there will be instances where both axle groups are over legal weight, but the gross weight is still legal. In this case both groups are over weight. The tandem axles 2-3 = 35,500 and the tridem axle group 4-6 = 43,600 lbs.  $35,500/34,000$  &  $43,600/43,500 = 1,600$  lbs excess weight. Both groups will need to be listed on the permit.



[Hand Written](#) [New Axle Spacing Report](#)

Company: A TRUCKING CO

Vehicle: 12345

Axle Report #: 26307 [View Report](#) Axle Spacing report number is required for Overw...

[Click Here](#) if you need a new Axle Spacing Report number.

Load Description\*: HITACHI EXCAVATOR

Issue Date\*: 2/3/2009

Start Date\*: 2/3/2009

Range\*: 3 Days

Origin\*: SEATTLE

Destination\*: SPOKANE

Expire Date: 02/05/2009

Tractor/Trailer  Truck/Trailer  Tractor/Double Trailer  Single Unit

Return Trip:  No  Yes

PU Axle: 3

Trailer Axle: 3

Gross Weight: [ ]

Width: [ ] ft [ ] in

Legal Weight: [ ]

Height: [ ] ft [ ] in

Excess Weight: [ ]

Total Length: Not Applicable

Gross Axle: 79100

Trlr/Load Length: [ ] ft [ ] in

Legal Axle: 77500

Front Overhang: [ ] ft [ ] in

Excess Axle: 1600

Rear Overhang: [ ] ft [ ] in

Other Information: \*\*\*OVER AXLE WEIGHT ON AXLES 2-3 & 4-6\*\*\*

Special Conditions: Check website: [www.wsdot.wa.gov/commercialvehicle/](http://www.wsdot.wa.gov/commercialvehicle/) prior to

The gross weight of the configuration was less than legal. Leave that area blank.

Enter the gross axle weight. In this case, 2-3 and axles 4-6 were excess. Enter the total legal weight for those groups.

The program will calculate the fee based on the excess axle weight

In the "Other Information" section note which axles are over weight.

# The Shopping Cart

- The shopping cart has a specific number assigned to it.
- You can view the permit or permits before you pay for them by selecting, “view selected permit.”
- You can buy multiple permits at once. If you are ordering more than one permit for a specific company add all of them to the cart and then pay for them at the same time.
- Take the [Self Study Refresher Online Test](#)



# The End