Railroads*

**Grade B**

Table 242-1

![Image of train and power lines]

**Grade B** - for limited access highway

**Grade C** - over other areas subject to truck traffic

Table 242-1

<table>
<thead>
<tr>
<th>Vertical Clearance at Largest Vertical Sag Table 232-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral or Comm.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>23.5 ft</td>
</tr>
</tbody>
</table>

*Railroad company may require greater clearance

Trucks Over 8 Feet*

**Grade B** - for limited access highway

**Grade C** - over other areas subject to truck traffic

Table 242-1

<table>
<thead>
<tr>
<th>Vertical Clearance at Largest Vertical Sag Table 232-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral or Comm.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>15.5 ft</td>
</tr>
</tbody>
</table>

DOT may require greater clearance

Water - No Sailboats

**Grade B** - when a crossing permit is required

Table 242-1

<table>
<thead>
<tr>
<th>Vertical Clearance at Largest Vertical Sag Table 232-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral or Comm.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>14.0 ft</td>
</tr>
</tbody>
</table>

*see NESC for sailboat clearances

Over fields, orchards, forest, etc.

<table>
<thead>
<tr>
<th>Vertical Clearance at Largest Vertical Sag Table 232-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral or Comm.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>15.5 ft</td>
</tr>
</tbody>
</table>

*used by vehicles over 8 feet tall or riders on horses

Pedestrians Only*

**Grade C**

Table 242-1

<table>
<thead>
<tr>
<th>Vertical Clearance at Largest Vertical Sag Table 232-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral or Comm.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>9.5 ft</td>
</tr>
</tbody>
</table>

*Not normally used by trucks or riders on horses (very steep hills, swamps, etc.)

Oversized Vehicles - greater than 14 feet in height

<table>
<thead>
<tr>
<th>Vertical Clearance at Largest Vertical Sag Table 232-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral or Comm.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>X + 1.5 ft</td>
</tr>
</tbody>
</table>

X = Known Height of oversized vehicle

*see NESC for sailboat clearances

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Application Guide for 2023 NESC Table 232-1 - see NESC for details and exceptions
Application Guide for 2023 NESC - see NESC for details and exceptions

Clearance Over* or Near Grain Bins Loaded by Portable Auger NESC 234F2

\[ B = \text{Vertical height to highest filling or probing port} \]

**Largest vertical sag

Non-Loading Side is when use of portable auger is limited by:
1. Permanent building/structure
2. Physical obstruction
3. Public road or other right of way
4. Designation or agreement

Clearance Over* or Near Swimming Pools NESC 234E1

Reference NESC Rule 234E for Diving platforms, water slide, or other pool objects greater than 8 feet in height.

Exception:
Vertical clearance does not apply to neutral, comm, grounded guy, or TPX that are 10 feet or more from edge of pool, diving platform, slide, or pool objects.

Neutral | TPX | 7.2/12.5 kV | 14.4/25 kV | 19.9/35 kV
---|---|---|---|---
22.0 ft | 22.5 ft | 25.0 ft

**Largest vertical sag

Aboveground pool with deck or ladder, clearance is from highest point upon which people can stand.

Clearance Over* or Near Billboards NESC 234C

**Largest vertical sag

Neutral | TPX | 7.2/12.5 kV | 14.4/25 kV | 19.9/35 kV
---|---|---|---|---
A-Where personnel walk | 9.5 ft | 10.0 ft | 14.5 ft
B - Other Surface | 3.0 ft | 3.5 ft | 8.0 ft
C - Horizontal** | 4.5 ft | 5.0 ft | 7.5 ft

**Horizontal clearance of phase conductor to be greater than 4.5 ft with 50 MPH wind

Vertical Clearance Over* Buildings NESC 234C

**Accessible is casually accessed. Do not need to use a portable ladder or special tools to gain access.

Neutral | TPX | 7.2/12.5 kV | 14.4/25 kV | 19.9/35 kV
---|---|---|---|---
Roof | Accessible** | 9.5 ft | 10.0 ft | 14.5 ft
Non-Accessible | 3.0 ft | 3.5 ft | 12.5 ft

**Horizontal clearance of phase conductor to be greater than 4.5 ft with 50 MPH wind

Neutral | TPX | 7.2/12.5 kV | 14.4/25 kV | 19.9/35 kV
---|---|---|---|---
A-To Walls** | 4.5 ft | 5.0 ft | 7.5 ft
B - Accessible Areas** | 4.5 ft | 5.0 ft | 7.5 ft

*Latest vertical sag
Note: Vertical clearance should be measured at the lowest point of sag within the span to the surface directly below. Trucks are defined as any vehicle exceeding 8 feet in height.

*Clearance at worse case final sag 32 F with ice or 120 F

- 16 feet when crossing roads accessible to trucks.
- 16 feet when crossing driveways, parking lots, and alleys. Barn likely to have truck traffic.
- 16 feet when providing service to a non-residential building (barn/shop).
- 12 feet where vehicles 8 feet in height are not normally encountered nor reasonably anticipated and service drop is crossing only a residential driveway.
- 10 feet when providing service to residential buildings only. Area must be accessible to pedestrians only. Trucks exceeding 8 feet in height and riders on horses are not normally encountered nor reasonably anticipated.
- 10 feet - to readily accessible deck per NESC Rule 234C3d.
- 16 feet Where vehicles or equipment exceeding 8 feet or riders on horses may be encountered such as rural areas.

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Summary of 2023 NESC Clearances to Communication Cables - see NESC for details and exceptions

* 30 inches is allowed if the communication messenger is bonded to the neutral throughout the service area. Table 235-5

** Fiber Optic Cables in the supply space (Rule 224A) will have the same required clearance to communication cables in the communication space as a multi-grounded neutral (Rule 235C)

A communication worker safety zone is vertical space between lines/facilities in the supply space and lines/facilities in the communication space Rule 235C4 & 238E