Application Guide for 2017 NESC Table 232-1 - see NESC for details and exceptions

**Railroads**

**Grade B**

Table 242-1

Vertical Clearance at Largest Vertical Sag Table 232-1

<table>
<thead>
<tr>
<th>Neutral or Comm.</th>
<th>Grounded Span Guy</th>
<th>TPX</th>
<th>7.2/12.5 kV</th>
<th>14.4/25 kV</th>
<th>19.9/35 kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.5 ft</td>
<td>24.0 ft</td>
<td></td>
<td></td>
<td></td>
<td></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

Vertical Clearance at Largest Vertical Sag Table 232-1

<table>
<thead>
<tr>
<th>Neutral or Comm.</th>
<th>Grounded Span Guy</th>
<th>TPX</th>
<th>7.2/12.5 kV</th>
<th>14.4/25 kV</th>
<th>19.9/35 kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.5 ft</td>
<td>16.0 ft</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*DOT may require greater clearance

**Water - No Sailboats**

Grade B - when a crossing permit is required
Table 242-1

Vertical Clearance at Largest Vertical Sag Table 232-1

<table>
<thead>
<tr>
<th>Neutral or Comm.</th>
<th>Grounded Span Guy</th>
<th>TPX</th>
<th>7.2/12.5 kV</th>
<th>14.4/25 kV</th>
<th>19.9/35 kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.0 ft</td>
<td>14.5 ft</td>
<td>17.0 ft</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*see NESC for sailboat clearances

**Over fields, orchards, forest, etc.**

Vertical Clearance at Largest Vertical Sag Table 232-1

<table>
<thead>
<tr>
<th>Neutral or Comm.</th>
<th>Grounded Span Guy</th>
<th>TPX</th>
<th>7.2/12.5 kV</th>
<th>14.4/25 kV</th>
<th>19.9/35 kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.5 ft</td>
<td>16.0 ft</td>
<td>18.5 ft</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Pedestrians Only**

Grade C
Table 242-1

Vertical Clearance at Largest Vertical Sag Table 232-1

<table>
<thead>
<tr>
<th>Neutral or Comm.</th>
<th>Grounded Span Guy</th>
<th>TPX</th>
<th>7.2/12.5 kV</th>
<th>14.4/25 kV</th>
<th>19.9/35 kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.5 ft</td>
<td>12.0 ft</td>
<td>14.5 ft</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Oversized Vehicles - greater than 14 feet in height**

Vertical Clearance at Largest Vertical Sag Table 232-1

<table>
<thead>
<tr>
<th>Neutral or Comm.</th>
<th>Grounded Span Guy</th>
<th>TPX</th>
<th>7.2/12.5 kV</th>
<th>14.4/25 kV</th>
<th>19.9/35 kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>X + 1.5 ft</td>
<td>X + 2 ft</td>
<td>X + 4.5 ft</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

X = Known Height of oversized vehicle

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

*B = Vertical height to highest filling or probing port

**Note:** If *B > 12 feet, vertical height of conductors is 30 feet at a distance equal to 2.5 times *B

**Largest vertical sag**

**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.

**Largest vertical sag**

**Vertical Clearance Over* Buildings NESC 234C**

**Largest vertical sag**

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

**Clearance Over* or Near Billboards NESC 234C**

**Largest vertical sag**

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

<table>
<thead>
<tr>
<th>B = Other Surface</th>
<th>Neutral</th>
<th>TPX</th>
<th>7.2/12.5 kV</th>
<th>14.4/25 kV</th>
<th>19.9/35 kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Where personnel walk</td>
<td>10.5 ft</td>
<td>11.0 ft</td>
<td>13.5 ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B - Accessible Areas</td>
<td>3.0 ft</td>
<td>3.5 ft</td>
<td>8.0 ft</td>
<td>7.5 ft</td>
<td></td>
</tr>
</tbody>
</table>

*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*

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

Ground Clearance* for 120/240V Triplex Service Drops

Reference NESC Table 232-1 And Footnotes

1 - 16 feet when crossing roads accessible to trucks.

2 - 16 feet when crossing driveways, parking lots, and alleys. Barn likely to have truck traffic.

3 - 16 feet when providing service to a non-residential building (barn/shop).

4 - 12 feet where vehicles 8 feet in height are not normally encountered nor reasonably anticipated and service drop is crossing only a residential driveway.

5 - 16 feet Where vehicles or equipment exceed 8 feet or riders on horseback may be encountered such as rural areas.

6 - 10 feet - to readily accessible deck per NESC Rule 234C3d.

7 - 10 feet - When providing service to residential buildings only. Area must be accessible to pedestrians only. Trucks larger than 8 feet in height and riders on horseback are not normally encountered nor reasonably anticipated.

8 - 16 feet to service pole or meter pole. If accessible to pedestrians only, 12 feet is permissible.

9 - 16 feet when providing service to a non-residential building (barn/shop).

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* 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 40 inches of clearance between communication lines and supply lines/equipment per Rule 235C4 & 238E