

Overhead Clearance

Scope

This section outlines the general principles and application rules for determining required clearances between overhead electric lines and various structures or installations. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company's construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company's standards shall govern. Additional requirements may apply under state or local regulations. For unusual circumstances, voltages, structures, or environmental conditions, consult the Company.

Clearance Conditions

The consideration of wind displacement and maximum conductor sag at rest need to be evaluated to ensure minimum clearances are met under all conditions.

Transitional Clearances

Where conductors transition between different clearance zones (e.g., from over a bridge to beside it), the greater of the applicable clearances shall be used to ensure continuous compliance.

To Over Bridge – All Parts

Scope

The following clearance requirements apply to all overhead electric supply conductors installed over bridges, overpasses, pedestrian walkways, and other elevated structures accessible to the public or maintenance personnel. This includes highway bridges, railway bridges, pedestrian footbridges, and industrial catwalks. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearance Values

	Unguarded rigid live part, 0 to 750V; noninsulated communication conductors; supply cables of 0 to 750V; ungrounded equipment cases, 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Open supply conductors, over 750V to 22kV (ft)	Unguarded rigid live parts, 750V to 22kV, ungrounded equipment cases, 750V to 22kV (ft)
Attached	3.0	3.5	5.5	5.0
Not attached	10.0	10.5	12.5	12.0

Notes:

- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.
- Where over traveled ways on or near bridges, the clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, or water surfaces also apply, if applicable. The greater of the applicable clearances should be used.
- Where the bridge has moving parts, such as a lift bridge, the required clearances shall be maintained throughout the full range of movement of the bridge or any of its attachments.

To Beside, Under or Within Bridge – Accessible Parts

Scope

The following clearance requirements apply to all overhead electric supply conductors installed beside, under or within bridges, overpasses, pedestrian walkways, and other elevated structures accessible to the public or maintenance personnel. This includes but is not limited to highway bridges, railway bridges, pedestrian footbridges, and industrial catwalks. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearance Values

	Unguarded rigid live part, 0 to 750V; noninsulated communication conductors; supply cables of 0 to 750V; ungrounded equipment cases, 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Open supply conductors, over 750V to 22kV (ft)	Unguarded rigid live parts, 750V to 22kV, ungrounded equipment cases, 750V to 22kV (ft)
Attached	3.0	3.5	5.5	5.0
Not attached	5.0	5.5	7.5	7.0

Notes:

- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.
- Where over traveled ways on or near bridges, the clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, or water surfaces also apply, if applicable. The greater of the applicable clearances shall be used.
- Where the bridge has moving parts, such as a lift bridge, the required clearances shall be maintained throughout the full range of movement of the bridge or any of its attachments.

To Beside, Under or Within Bridge – Not Accessible Parts

Scope

The following clearance requirements apply to all overhead electric supply conductors installed beside, under or within bridges, overpasses, pedestrian walkways, and other elevated structures not accessible to the public or maintenance personnel. This includes but is not limited to structural components such as trusses, girders, and undersides of bridge decks that are not intended for pedestrian or maintenance access under normal conditions. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearance Values

	Unguarded rigid live part, 0 to 750V; noninsulated communication conductors; supply cables of 0 to 750V; ungrounded equipment cases, 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Open supply conductors, over 750V to 22kV (ft)	Unguarded rigid live parts, 750V to 22kV, ungrounded equipment cases, 750V to 22kV (ft)
Attached	3.0	3.5	5.5	5.0
Not attached	4.0	4.5	6.5	6.0

Notes:

- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.
- For unusual voltages, structures, or environmental conditions, consult the full NESC.
- Where over traveled ways on or near bridges, the clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, or water surfaces also apply, if applicable. The greater of the applicable clearances shall be used.
- Where the bridge has moving parts, such as a lift bridge, the required clearances shall be maintained throughout the full range of movement of the bridge or any of its attachments.

To Buildings – Accessible Parts

Scope

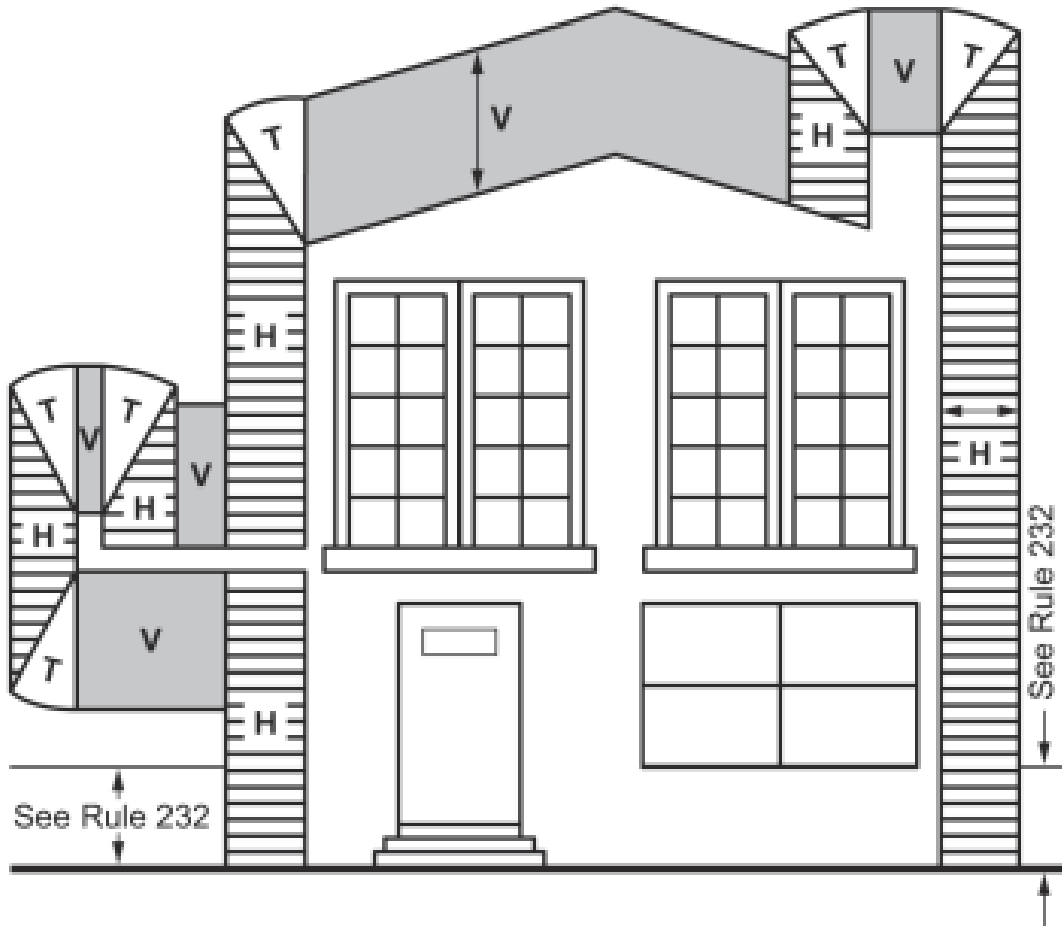
This section applies to overhead electric supply conductors installed near accessible portions of buildings, including but not limited to balconies, windows, doors, fire escapes, rooftops with equipment or walkways, and any other areas where people may be present or gain access for maintenance, recreation, or emergency use. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearances Values

	Supply cables of 0 to 750V (ft)	Unguarded rigid live parts 0 to 750V; ungrounded equipment cases, 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Unguarded rigid live parts, over 750V to 22kV; ungrounded equipment 750V to 22kV (ft)	Open supply conductors, 750V to 22kV (ft)
Horizontal	5.0	5.0	5.5	7.0	7.5
Vertical	10.0	10.0	10.5	14.0	14.5

Notes:

- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.
- Where buildings exceed three stories or 50 feet in height, overhead lines shall be arranged, where applicable, so that a clear space (or zone) at least 6 feet wide will be left either adjacent to the buildings or beginning not over 8 feet from them to facilitate the raising of ladders when necessary for fire fighting for up to 1000V conductors.
- Where on or near buildings, the clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, bridges, or water surfaces also apply, if applicable. The greater of the applicable clearances should be used.
- NESC Rule 232 covers vertical clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, or water surfaces



LEGEND

Regions Where
Conductors Are Prohibited

H 

V 

T

Controlling
Clearance

Horizontal

Vertical

Transitional =
Vertical (Arc)

To Buildings – Not Accessible Parts

Scope

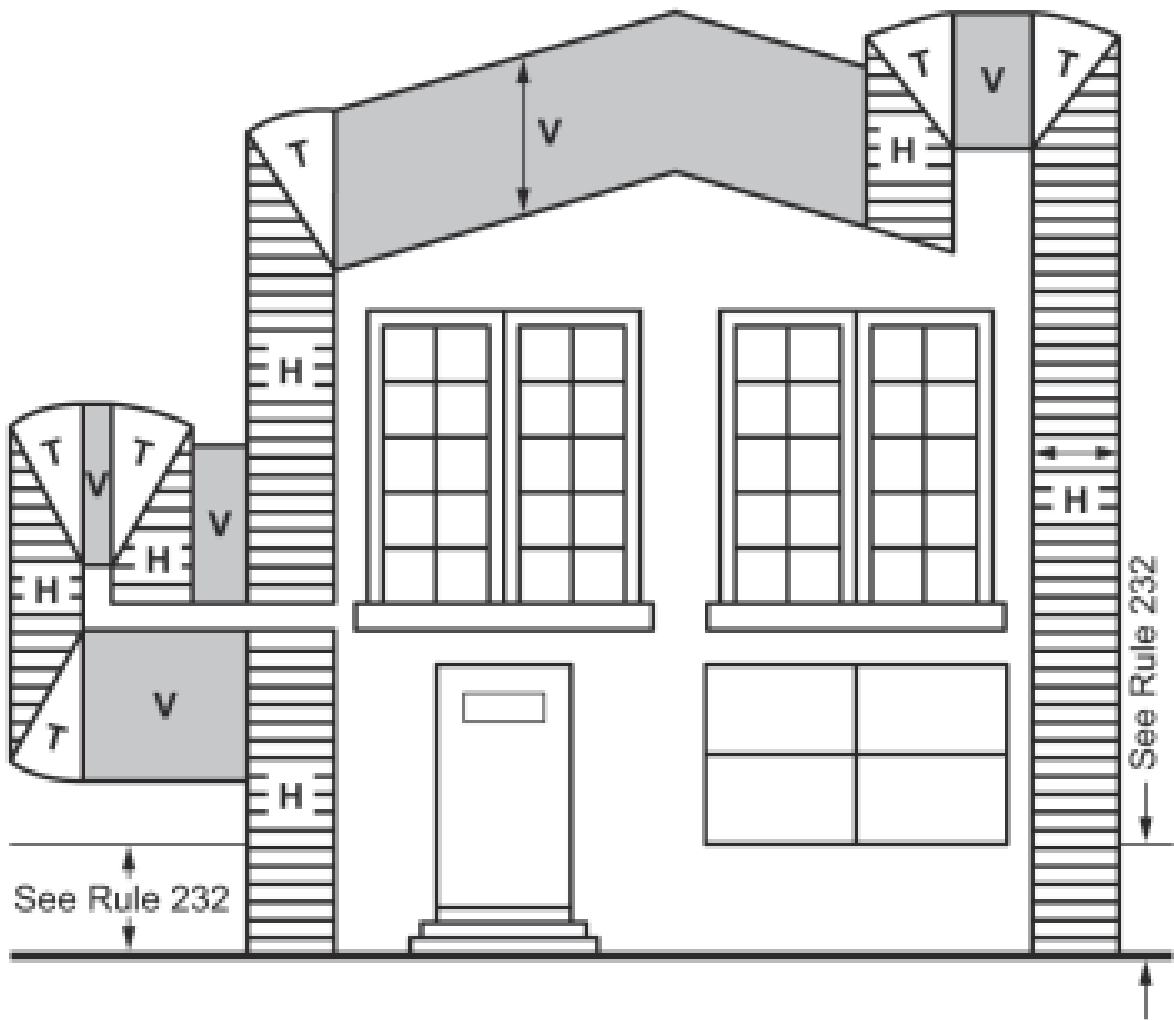
This section applies to overhead electric supply conductors installed near non-accessible portions of buildings, such as walls, roofs, and structural projections that are not intended for human access (e.g., no walkways, balconies, or rooftop equipment platforms). These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearances Values

Clearance of	Supply cables of 0 to 750V (ft)	Unguarded rigid live parts 0 to 750V; ungrounded equipment cases, 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Unguarded rigid live parts, over 750V to 22kV; ungrounded equipment 750V to 22kV (ft)	Open supply conductors, 750V to 22kV (ft)
Horizontal	5.0	5.0	5.5	7.0	7.5
Vertical	3.5	10.0	10.5	12.0	12.5

Notes:

- Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.
- Where buildings exceed three stories or 50 feet in height, overhead lines shall be arranged, where applicable, so that a clear space (or zone) at least 6 feet wide will be left either adjacent to the buildings or beginning not over 8 feet from them to facilitate the raising of ladders when necessary for fire fighting for up to 1000V.
- Where on or near buildings, the clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, bridges, or water surfaces also apply, if applicable. The more conservative clearances should be used.
- NESC Rule 232 covers vertical clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, or water surfaces



LEGEND

Regions Where Conductors Are Prohibited

H 

V 

T

Controlling Clearance

Horizontal

Vertical

Transitional =
Vertical (Arc)

To Grain Bins – All Parts

Scope

This document outlines the clearance requirements from overhead conductors, wires, and cables to grain bins. It applies to grain bins loaded by both permanently installed and portable equipment, ensuring safe distances are maintained to prevent electrical hazards. Equipment used for loading includes but is not limited to augers, conveyors, and elevator systems. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearance Values

Permanently Installed Equipment

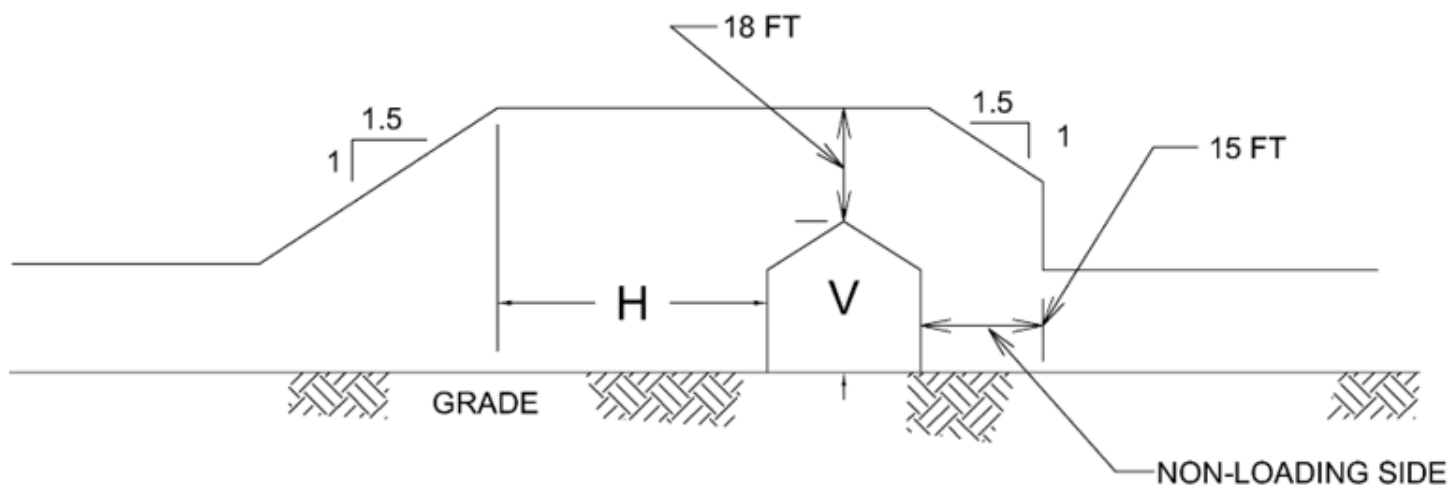
- Grain bins loaded by permanently installed augers, conveyors, or elevator systems must maintain a vertical clearance of not less than 18 feet above the grain bin. All wires, conductors, and cables shall maintain a clearance of 18 feet in all directions from each probe port in the grain bin roof. A horizontal clearance of 15 feet from the grain bin is also required.

Portable Equipment

- Grain bins that are loaded using portable augers, conveyors, or elevators must meet the following clearance requirements
 - Clearances shall be no less than the values illustrated in the figure on the next page. All shall be maintained under wind conditions.
 - V = Height of highest filling or probing port on grain bin
 - H = V + 15 feet
 - To accommodate portable equipment and maintain safe overhead line distances, a sloped clearance zone is applied around grain bins. The slope is defined as:
 - Vertical clearance decreases by 1 foot for every 1.5 feet of horizontal distance from the edge of the grain bin
 - Any side of a grain bin is a nonloading side if it is so designated, or if it is so close to another structure, obstruction or public road that a portable auger, conveyor or elevator is not reasonably anticipated to be used over that side or portion to fill the grain bin.
 - Where an agreement excludes the use of portable augers, conveyors or elevators from a designated portion of a grain bin, such portion is a non-loading side.

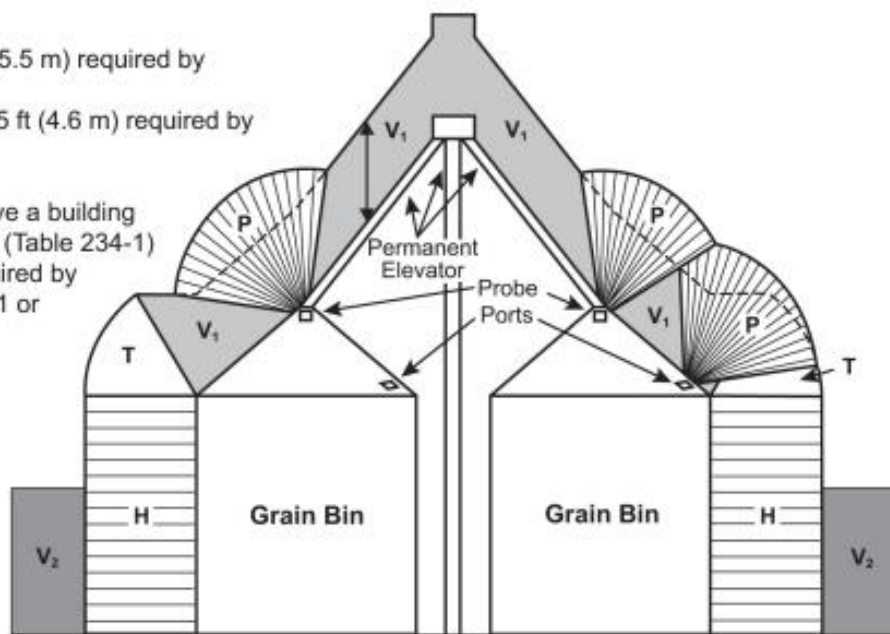
Notes:

- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.



Legend

- P = Probe clearance 18 ft (5.5 m) required by Rule 234F1a
- H = Horizontal clearance 15 ft (4.6 m) required by Rule 234F1a
- T = Transition clearance
- V_1 = Vertical clearance above a building required by Rule 234C (Table 234-1)
- V_2 = Vertical clearance required by Rule 232B (Table 232-1 or Table 232-2)



To Hazardous/Explosive Areas – All Parts

Scope

This section outlines the minimum clearance requirements between overhead electric conductors and areas classified as hazardous or explosive due to the presence of flammable gases, vapors, dusts, or combustible materials. These areas may include, but are not limited to, petroleum refineries, chemical plants, fuel storage facilities, wastewater treatment plants, and industrial zones with volatile processes. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearance Values

Overhead lines shall not be routed over or within 20-foot proximity to hazardous or explosive areas unless necessary. When unavoidable, contact the company.

To OH Wire/Cable Different Support – All Parts

Scope

This section outlines the minimum clearance requirements between wires, conductors, and cables carried on different supporting structures. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company's construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company's standards shall govern.

Clearance Values

- Horizontal:
 - A horizontal clearance of 5 feet is required between adjacent wires, conductors, or cables carried on different supporting structures.
- Vertical:

Lower level	Upper level				
	Communication guys, span wires and messengers, communication conductors (ft)	Supply guys, span wires and messengers, neutral conductors, and overhead shield/surge protection wires (ft)	Supply cables 0 to 750V (ft)	Open supply conductors up to 750V and supply cables over 750V (ft)	Open supply conductors 750V to 22kV (ft)
Supply guys, span wires, messengers, neutral conductors, and overhead shield/surge wires	2.0	2.0	2.0	2.0	2.0
Communication guys, span wires, messengers, communication cables	2.0	2.0	2.0	4.0	5.0
Supply cables 0 to 750V	2.0	2.0	2.0	2.0	2.0
Open Supply conductors up to 750V and supply cables over 750V	4.0	2.0	2.0	2.0	2.0
Open supply conductors 750V to 22kV	5.0	2.0	2.0	2.0	2.0
Trolley and electrified railroad contact conductors and associated span and messenger wires	4.0	4.0	4.0	4.0	6.0

Notes:

- No clearance is required between guys or span wires that are electrically interconnected.
- Clearance may be reduced to 2 feet for supply service drops.
- Clearance may be reduced to 4 feet where supply conductors (750 V to 8.7 kV) cross communication lines more than 6 feet horizontally from a communication structure.
- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.

To OH Wire/Cable Same Support – All Parts

Scope

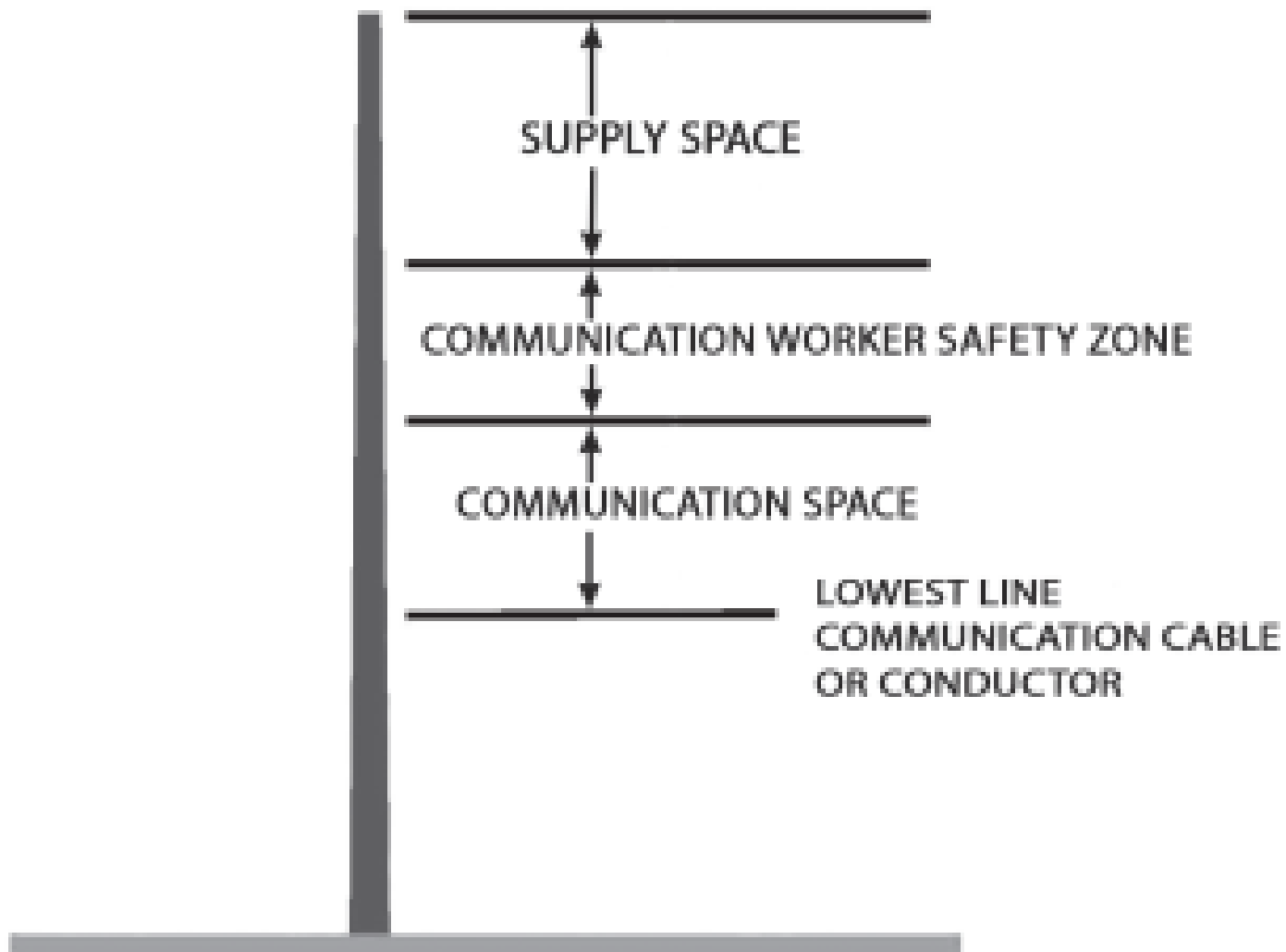
This section outlines the minimum clearance requirements between wires, conductors, and cables carried on the same supporting structure. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company's construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company's standards shall govern.

Clearance Values

Lower Level (Supply Space)	Upper Level (Supply Space)				
	Neutral conductors (in)	Maximum system voltage			
		4800V/8320V 8320V Delta (in)	7970V/13.86kV 13.86kV Delta (in)	14.4kV/24.94kV 24.94kV Delta (in)	19.92kV/34.5kV 34.5kV Delta (in)
Vertical and lateral conductors – at the support					
Of the same circuit	3.0	3.0	4.3	7.1	9.5
Of other circuits	3.0	6.0	8.1	12.5	16.4
Guy or span wires, or messengers – at or near the support	6.0	6.0	7.3	10.1	12.5
Surface of support arms – at the support	3.0	3.0	4.1	6.3	8.2
Service drops – in the span	12.0	12.0	14.1	18.5	22.4
Vertical clearance communication worker safety (buffer) zone between communication and supply conductors at support					
	Maximum system voltage in supply space				
		7970V/13.86kV 13.86kV Delta (in)	14.4kV/24.94kV 24.94kV Delta (in)	19.92kV/34.5kV 34.5kV Delta (in)	
Buffer zone		40.0	42.3	44.5	
Lower Level (Communication Space)	Upper Level (Communication Space)				
	Communication lines in general (in)		Communication lines on jointly used structures (in)		
Vertical and lateral conductors – at the support					
Of the same circuit	3.0		3.0		
Of other circuits	3.0		3.0		
Guy or span wires, or messengers – at or near the support	3.0		6.0		

Notes:

- Clearances are with no wind displacement.



To Other OH Items – All Parts

Scope

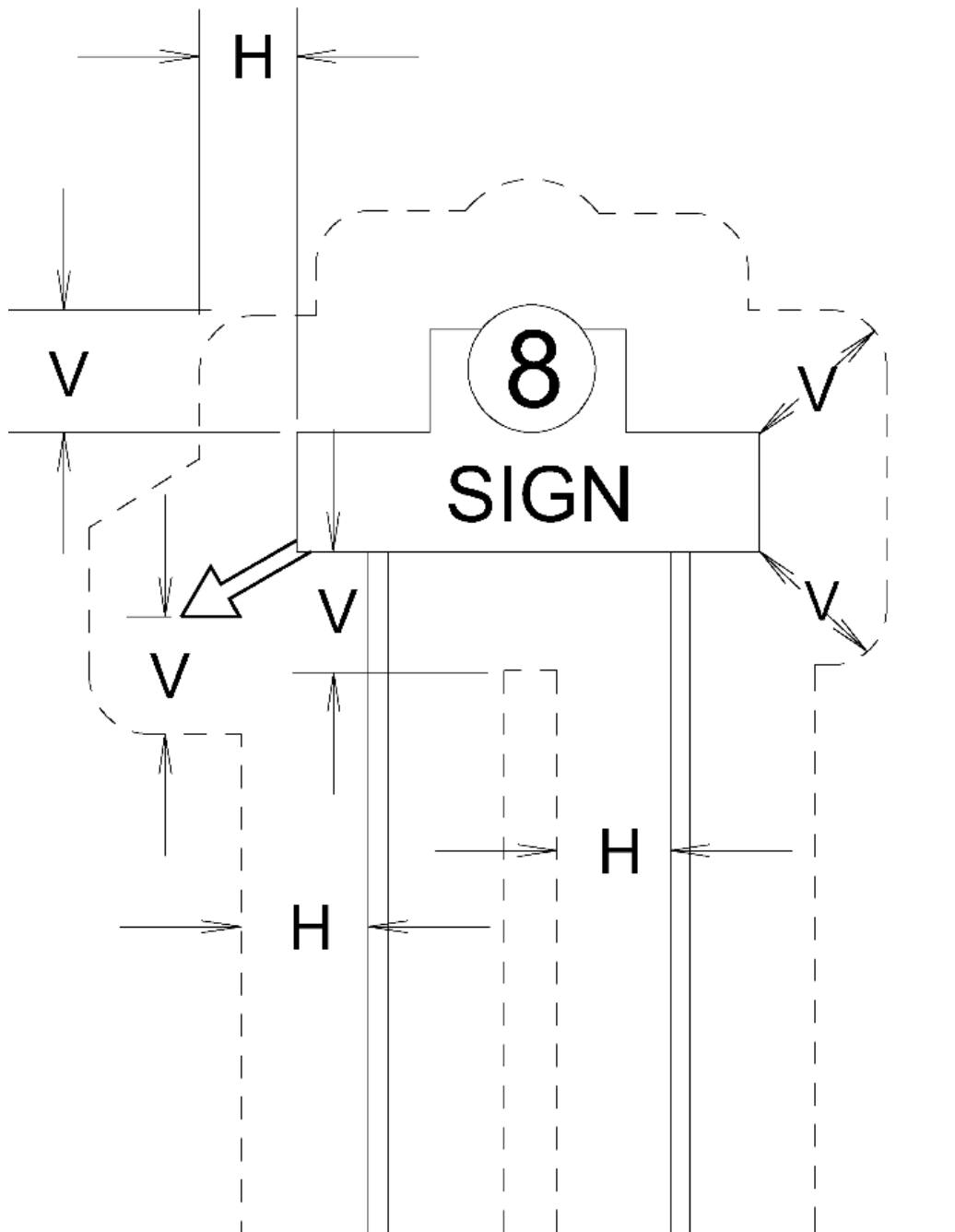
This section outlines the minimum clearance requirements between wires, conductors and cables from other items that may be found overhead. This can include items such as – but not limited to – lights, chimneys, antennas, billboards, banners, flagpoles, flags, and signs. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearance Values

	Messengers, overhead shield/surge protection wires, guys, neutral conductors (ft)	Supply cables of 0 to 750V (ft)	Unguard rigid live parts 0 to 750V, ungrounded equipment cases, 0 to 750V (ft)	Supply cables over 750V, open supply conductors 0 to 750V (ft)	Unguarded rigid live parts, 750V to 22kV (ft)	Open supply conductors, 750V to 22kV (ft)
a. Horizontal						
(1) Accessible	4.5	5.0	5.0	5.5	7.0	7.5
(2) Inaccessible	3.0	3.5	5.0	5.5	7.0	7.5
b. Vertical						
(1) Accessible	9.5	10.0	10.0	10.5	14.0	14.5
(2) Inaccessible	3.0	3.5	5.5	6.0	7.5	8.0

Notes:

- It is assumed that a flag or banner is fully extended but that there is no deflection or displacement of the flagpole or other supporting structure due to wind and that the conductors, cables, or rigid live parts are not displaced by the wind. The specified clearance is measured to the point of maximum displacement of the banner or flag towards the overhead utility facility.
- Where buildings exceed three stories or 50 feet in height, overhead lines shall be arranged, where applicable, so that a clear space (or zone) at least 6 feet wide will be left either adjacent to the buildings or beginning not over 8 feet from them to facilitate the raising of ladders when necessary for fire fighting for up to 1000V conductors (NEC 225.19E).
- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.



To Platforms – All Parts

Scope

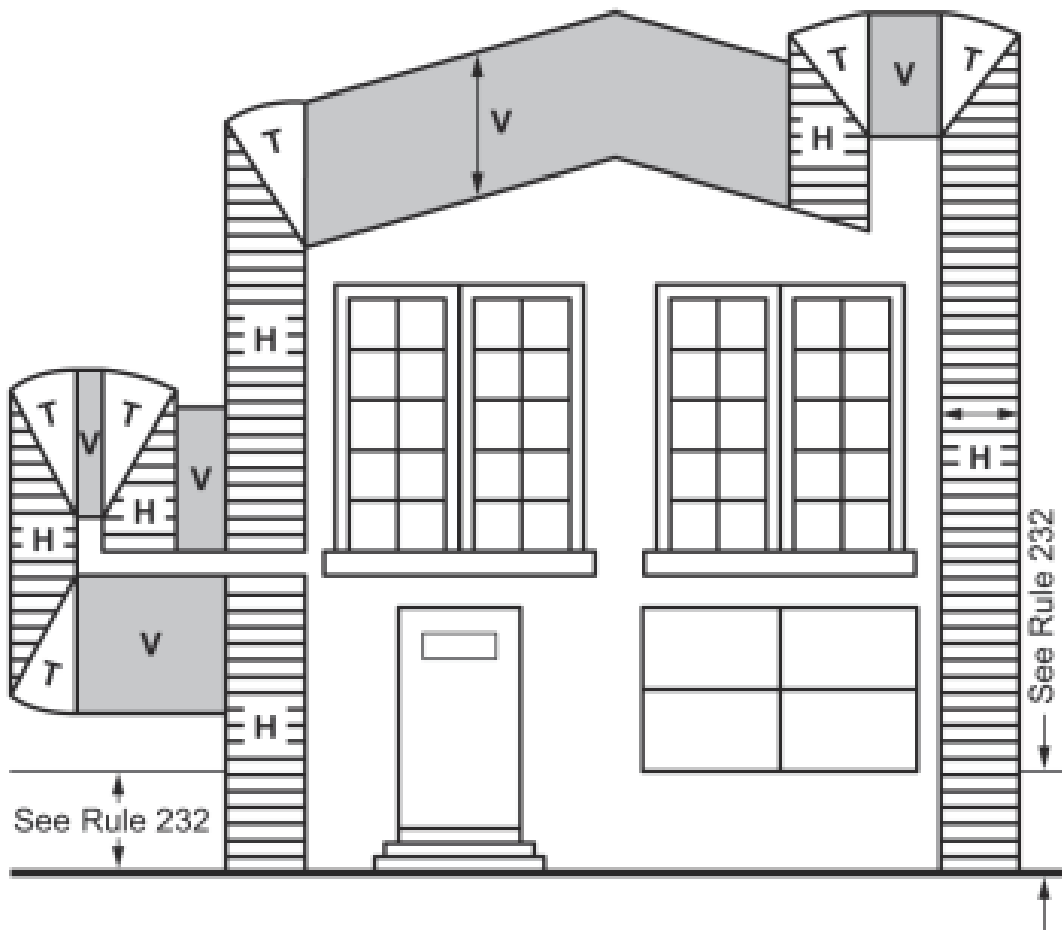
This section outlines the minimum clearance requirements between wires, conductors and cables from platforms regardless of whether the platform is intended for regular access. Such platforms may include but are not limited to scaffolding, ground-mounted solar panels, playground equipment, trampolines, decks, etc. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company's construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company's standards shall govern.

Clearance values

Clearance of	Supply cables of 0 to 750V (ft)	Unguarded rigid live parts 0 to 750V; ungrounded equipment cases, 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Unguarded rigid live parts, over 750V to 22kV; ungrounded equipment 750V to 22kV (ft)	Open supply conductors, 750V to 22kV (ft)
Horizontal	5.0	5.0	5.5	7.0	7.5
Vertical	10.0	10.0	10.5	14.0	14.5

Notes:

- Clearances from diving platforms are in **ESS Clearance From OH Line-To Water Areas-Pools [8001.23-010]**.
- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.
- NESC Rule 232 covers vertical clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, or water surfaces.



LEGEND

Regions Where
Conductors Are Prohibited

H 

V 

T

Controlling
Clearance

Horizontal

Vertical

Transitional =
Vertical (Arc)

To Railroad – All Parts

Scope

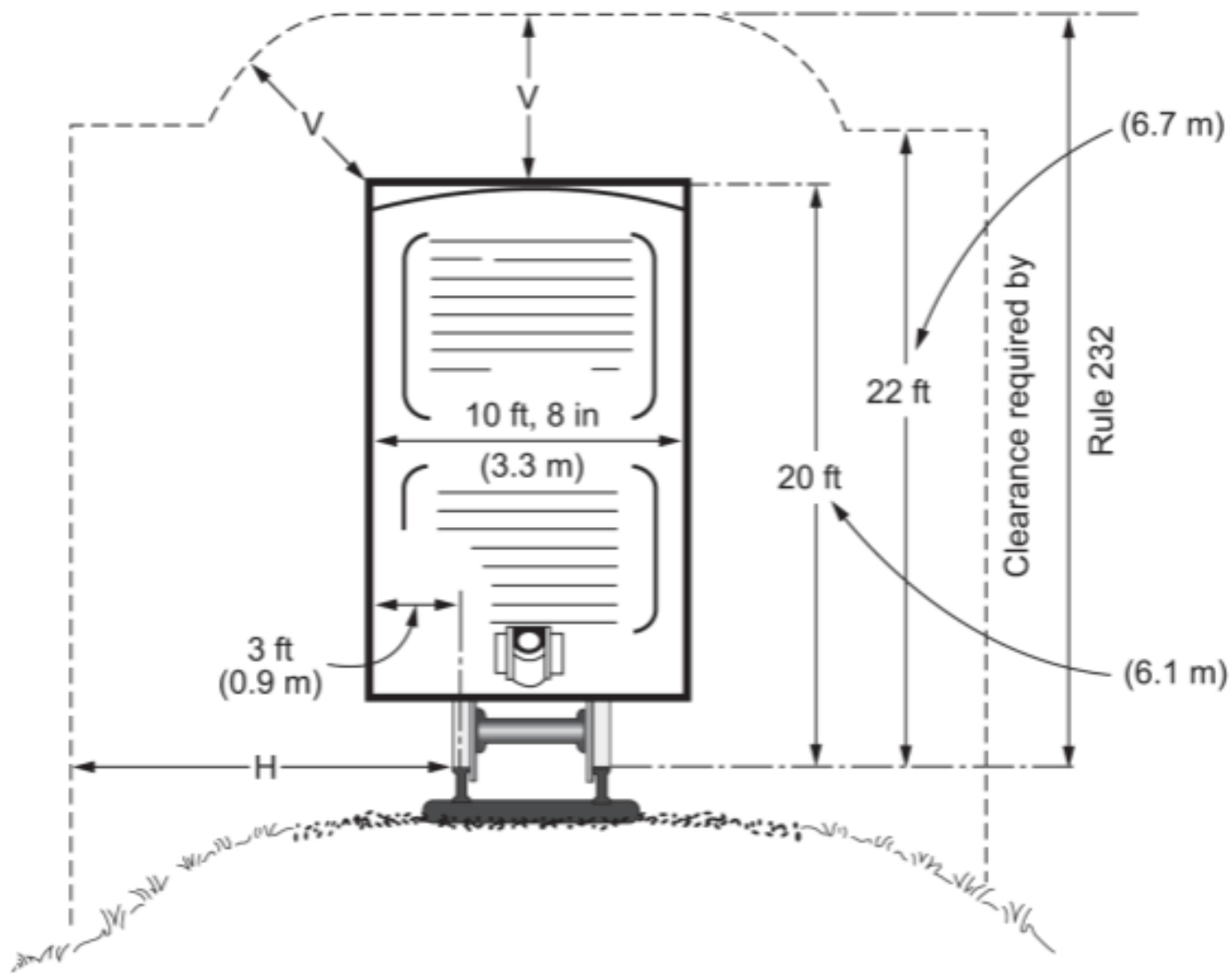
This section outlines the minimum clearance requirements between wires, conductors and cables from railroads, street cars, and trolleys. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearance values

Clearance of	Messengers, overhead shield/surge-protection wires, guys, neutral conductors (ft)	Supply cables of 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Open supply conductors, 750V to 22kV (ft)
Horizontal	8.5	9.5	9.5	11.5
Vertical	23.5	24.5	24.5	26.5

Notes:

- Within the horizontal clearance zone, a minimum vertical clearance of 22 ft above top of rail is required.
- Vertical clearances are measured from the top of the railroad track to the overhead cable, based on a standard rail car height of 20 feet. If a rail car exceeds 20 feet, the amount above 20 feet must be added to the required clearance.
- Vertical clearances shall not be less than 25 feet from the top of the rails, except for trolley and feed wires of electric railroads, which wires shall not be less than 22 feet per [KSA 66-183](#).
- Railroad companies may require greater clearance depending on local agreements or operational needs.
- Voltages are phase-to ground-for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.
- NESC Rule 232 covers vertical clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, or water surfaces.



To Road/Path – Pedestrian

Scope

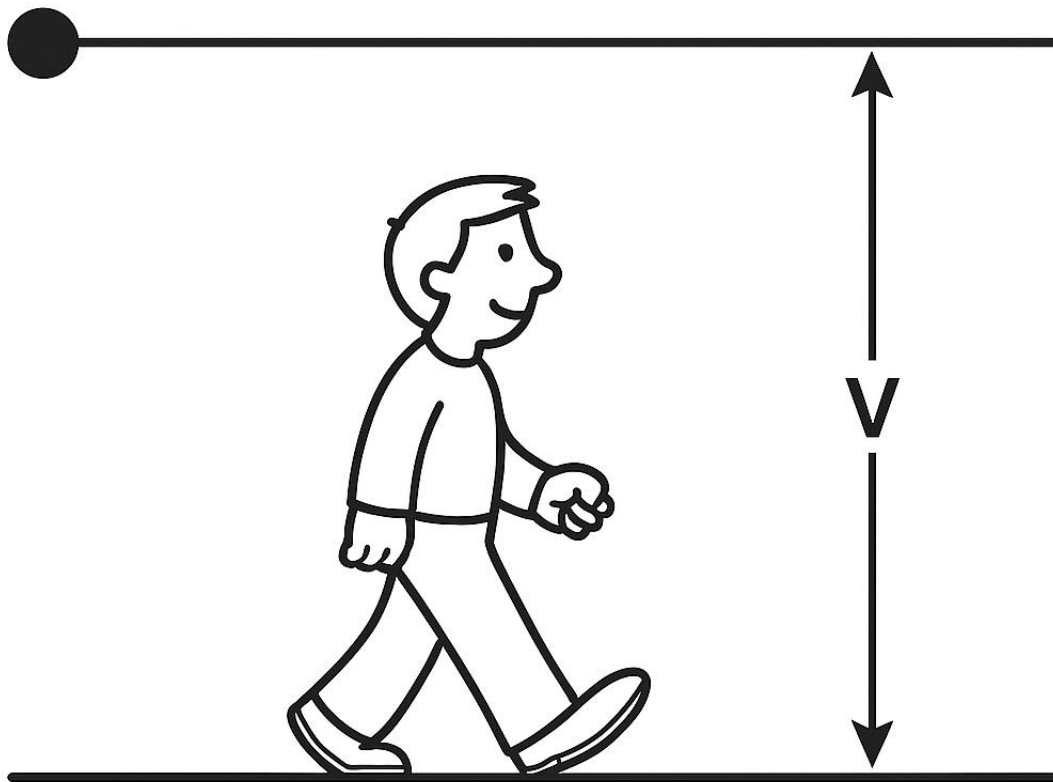
This section outlines the minimum clearance requirements between wires, conductors and cables from a path accessible to pedestrian traffic, excluding automobile traffic. This can include, but is not limited to, sidewalks. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company's construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company's standards shall govern.

Clearance Values

	Messengers, overhead shield/surge-protection wires, guys, neutral conductors (ft)	Supply cables of 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Open supply conductors, 750V to 22kV (ft)
Where wires, conductors, or cables cross over or overhang				
Vertical	10.0	12.0	15.0	15.0

Notes:

- City of Wichita – Within the city limits and extending three miles beyond, supply lines of all voltages over public rights-of-way must maintain a minimum vertical clearance of 19 ft, per Wichita City Ordinance No. 45987. Clearance requirements are subject to change. Verify with the latest city ordinances and applicable regulations to ensure compliance before design or construction.
- City of Emporia – In Emporia, lines above arterial roadways (U.S. 50, Commercial St., Merchant St., Prairie St.) require higher clearances and must be permitted by the City Engineer before relocation or new installation, per Emporia City Ordinance 14-12. Clearance requirements are subject to change. Verify with the latest city ordinances and applicable regulations to ensure compliance before design or construction.
- Missouri Department of Transportation – All new or existing overhead crossings must meet applicable NESC minimum vertical clearances, and in no case be less than 18 ft, as specified in [MODOT EPG 643.3.9](#). Clearance requirements are subject to change. Verify with the latest city ordinances, DOT standards, and applicable regulations to ensure compliance before design or construction.
- Kansas Department of Transportation – Minimum vertical clearance follows NESC requirements, with at least 18 ft for communications and 0–750 V lines, and 20 ft for 750–22 kV lines, per [KDOT Part II-A7](#); additional clearance may be required in certain circumstances. Clearance requirements are subject to change. Verify with the latest city ordinances, DOT standards, and applicable regulations to ensure compliance before design or construction.
- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.



To Road/Path – Vehicles Less than 8 Feet

Scope

This section outlines the minimum clearance requirements between wires, conductors and cables from roadways traveled exclusively by vehicles less than 8 feet in height. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company's construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company's standards shall govern.

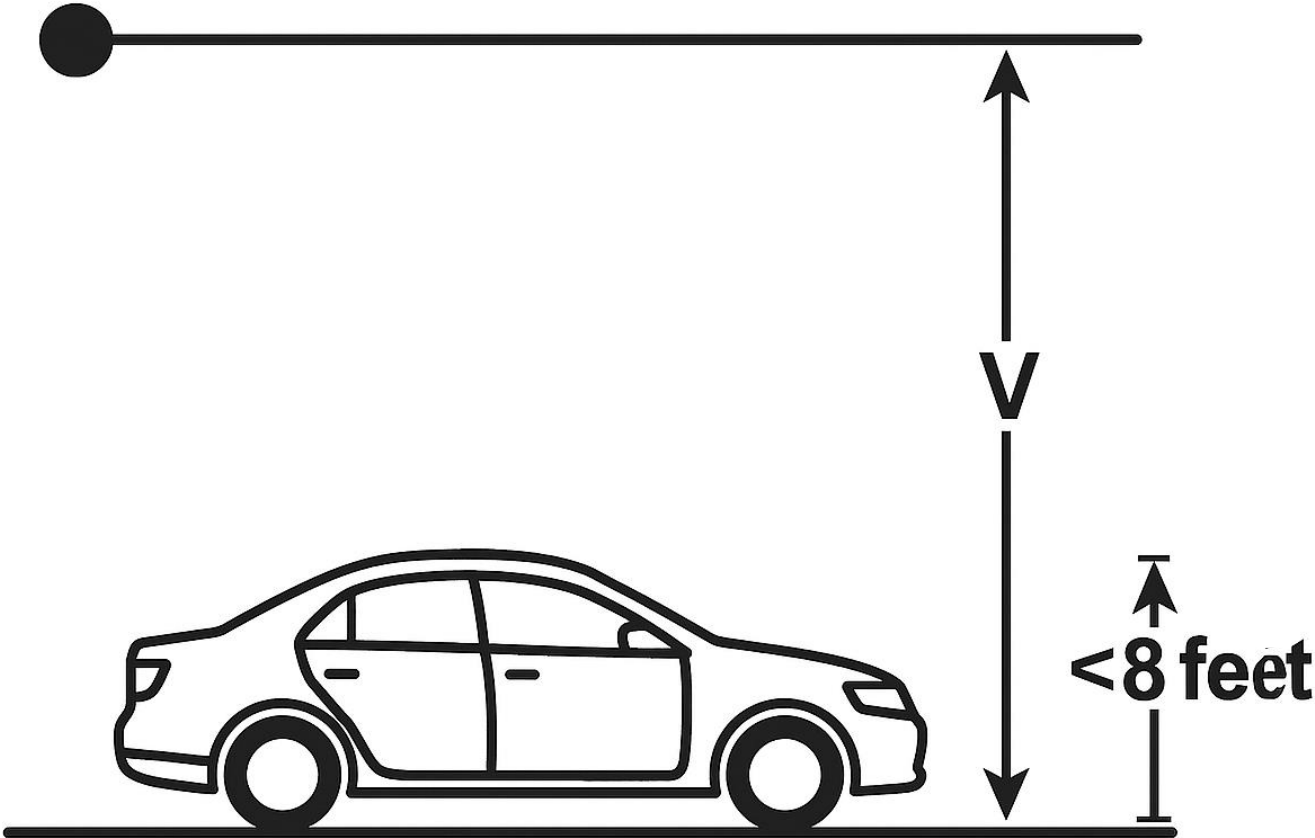
Clearance Values

	Messengers, overhead shield/surge-protection wires, guys, neutral conductors (ft)	Supply cables of 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Open supply conductors, 750V to 22kV (ft)
Where wires, conductors, or cables cross over or overhang				
Vertical clearance	15.0	15.0	15.0	15.0
Where wires, conductors, or cables run along and within the limits of the driveway but do not overhang				
Roads where it is unlikely that vehicles will be crossing under the line	13.5	14.0	14.5	15.0

Notes:

- City of Wichita – Within the city limits and extending three miles beyond, supply lines of all voltages over public rights-of-way must maintain a minimum vertical clearance of 19 ft, per Wichita City Ordinance No. 45987. Clearance requirements are subject to change. Verify with the latest city ordinances and applicable regulations to ensure compliance before design or construction.
- City of Emporia – In Emporia, lines above arterial roadways (U.S. 50, Commercial St., Merchant St., Prairie St.) require higher clearances and must be permitted by the City Engineer before relocation or new installation, per Emporia City Ordinance 14-12. Clearance requirements are subject to change. Verify with the latest city ordinances and applicable regulations to ensure compliance before design or construction.
- Missouri Department of Transportation – All new or existing overhead crossings must meet applicable NESC minimum vertical clearances, and in no case be less than 18 ft, as specified in [MODOT EPG 643.3.9](#). Clearance requirements are subject to change. Verify with the latest city ordinances, DOT standards, and applicable regulations to ensure compliance before design or construction.
- Kansas Department of Transportation – Minimum vertical clearance follows NESC requirements, with at least 18 ft for communications and 0–750 V lines, and 20 ft for 750–22 kV lines, per [KDOT Part II-A7](#); additional clearance may be required in certain circumstances. Clearance requirements are subject to change. Verify with the latest city ordinances, DOT standards, and applicable regulations to ensure compliance before design or construction.
- Service drop(s) clearances over residential driveways only may be reduced to the following:
 - Insulated supply service drops limited to 300V to ground – 12.5 feet
 - Insulated drip loops of supply service drops limited to 300V to ground – 10.5 feet
 - Supply service drops limited to 150V to ground – 12.0 feet
 - Drip loops only of service drops limited to 150V to ground – 10.0 feet
- Where a supply line along a driveway is located relative to fences, ditches, embankments, or other terrain features so that the ground under the line would not be expected to be traveled except by pedestrians, the clearances may be reduced to the following:
 - Supply cables of any voltage – 12.0 feet
 - Insulated supply conductors limited to 300V to ground – 12.5 feet

- Insulated supply cables limited to 150V to ground – 12.0 feet
- Guys and neutral conductors – 10.0 feet
- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.



To Road/Path – Vehicles Greater than 8 Feet

Scope

This section outlines the minimum clearance requirements between wires, conductors and cables from roadways traveled by all vehicles, including those greater than 8 feet in height. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company's construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company's standards shall govern.

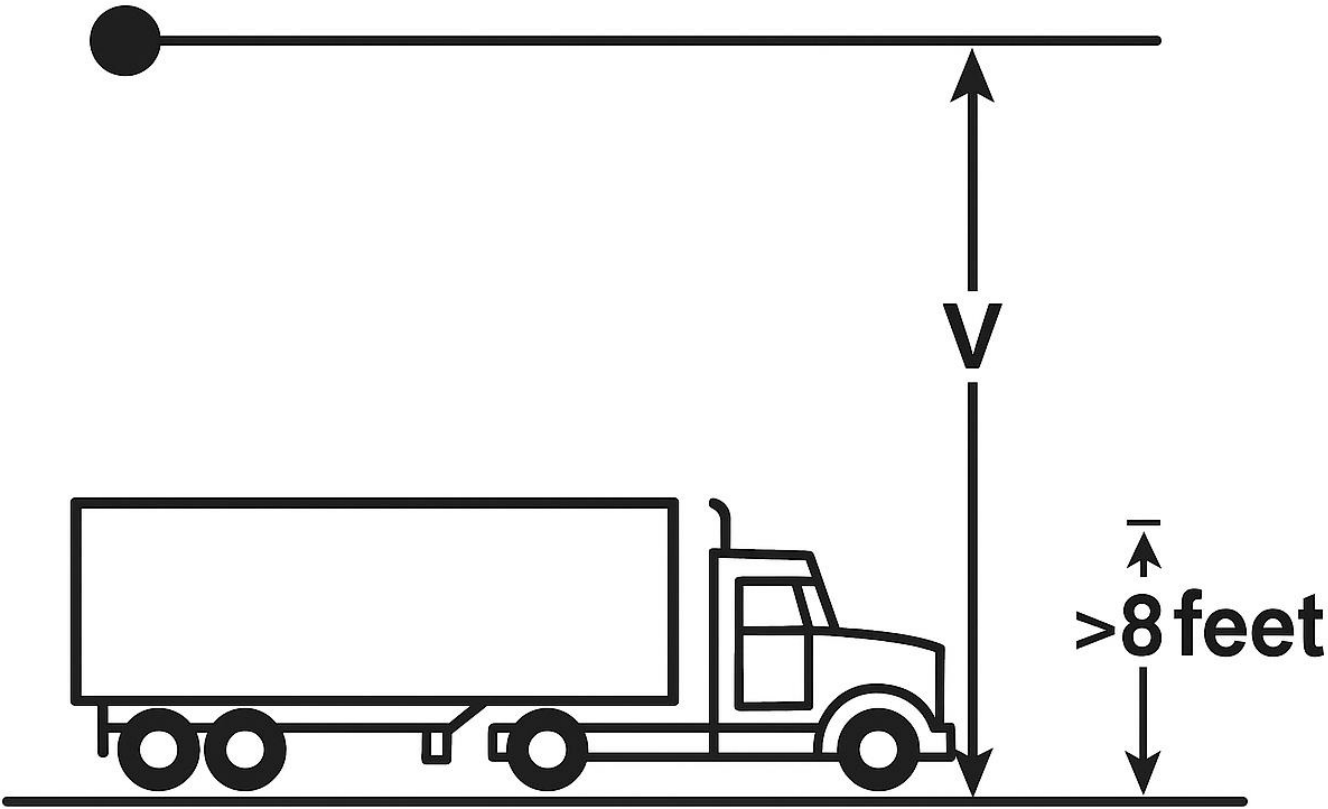
Clearance Values

	Messengers, overhead shield/surge-protection wires, guys, neutral conductors (ft)	Supply cables of 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Open supply conductors, 750V to 22kV (ft)
Where wires, conductors, or cables cross over or overhang				
Vertical Clearance	15.5	16.0	16.5	18.5
Where wires, conductors, or cables run along and within the limits of the driveway but do not overhang				
Roads, streets, or alleys	15.5	16.0	16.5	18.5
Roads where it is unlikely that vehicles will be crossing under the line	13.5	14.0	14.5	16.5

Notes:

- When designing a line to accommodate vehicles exceeding 14 feet in height, these clearance values shall be increased by the difference between the known height of the vehicle and 14 feet.
- City of Wichita – Within the city limits and extending three miles beyond, supply lines of all voltages over public rights-of-way must maintain a minimum vertical clearance of 19 ft, per Wichita City Ordinance No. 45987. Clearance requirements are subject to change. Verify with the latest city ordinances and applicable regulations to ensure compliance before design or construction.
- City of Emporia – In Emporia, lines above arterial roadways (U.S. 50, Commercial St., Merchant St., Prairie St.) require higher clearances and must be permitted by the City Engineer before relocation or new installation, per Emporia City Ordinance 14-12. Clearance requirements are subject to change. Verify with the latest city ordinances and applicable regulations to ensure compliance before design or construction.
- Missouri Department of Transportation – All new or existing overhead crossings must meet applicable NESC minimum vertical clearances, and in no case be less than 18 ft, as specified in [MODOT EPG 643.3.9](#). Clearance requirements are subject to change. Verify with the latest city ordinances, DOT standards, and applicable regulations to ensure compliance before design or construction.
- Kansas Department of Transportation – Minimum vertical clearance follows NESC requirements, with at least 18 ft for communications and 0–750 V lines, and 20 ft for 750–22 kV lines, per [KDOT Part II-A7](#); additional clearance may be required in certain circumstances. Clearance requirements are subject to change. Verify with the latest city ordinances, DOT standards, and applicable regulations to ensure compliance before design or construction.
- Where a supply line along a driveway is located relative to fences, ditches, embankments, or other terrain features so that the ground under the line would not be expected to be traveled except by pedestrians, the clearances may be reduced to the following:
 - Supply cables of any voltage and neutrals conductors – 12.0 feet
 - Insulated supply conductors limited to 300V to ground – 12.5 feet
 - Insulated supply cables limited to 150V to ground – 12.0 feet
 - Guys – 10.0 feet

- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.



To Trolley/Street Car – All Parts

Scope

This section outlines the minimum clearance requirements between wires, conductors and cables from trolleys or street cars and from the overhead trolley conductors and associated span and messenger wires. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearance Values

- Clearance values between overhead conductors and trolley or street car conductors and associated span and messenger wires are provided in **ESS Clearance From OH Line-To OH Wire/Cable Different Support-All Parts [8001.11-001]**.
- Clearance values from overhead line to trolley or street cars are provided in **ESS Clearance From OH Line-To Railroad-All Parts [8001.16-001]**.
- Clearance values from trolley and electrified railroad contact conductors and associated span or messenger wires to surfaces are found in the table below:

Nature of surface underneath wires, conductors, or cables	0 to 750 V to ground (ft)	Over 750 V to 22 kV to ground (ft)
Where wires, conductors, or cables cross over or overhang		
Track rails of railroads (except electrified railroads using overhead trolley conductors)	22.0	22.0
Roads, streets, and other areas subject to traffic of vehicles greater than 8 feet in height	18.0	20.0
Driveways, established parking areas, and alleys	18.0	20.0
Spaces and ways subject to pedestrian traffic only	16.0	18.0
Where wires, conductors, or cables run along and within the limits of the driveway but do not overhang		
Roads, streets, or alleys	18.0	20.0
Roads where it is unlikely that vehicles will be crossing under the line	18.0	20.0

Notes:

- Clearance from trolley and electrified railroad contact conductors of more than 750V should be at least 6 feet.
- Trolley and street car companies may require greater clearance depending on local agreements or operational needs.

To Water Areas – Non-Pools

Scope

This section outlines the minimum clearance requirements between wires, conductors and cables from water areas including but not limited to lakes, ponds, reservoirs, rivers, streams, and canals. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern.

Clearance Values

	Messengers, overhead shield/surge-protection wires, guys, neutral conductors (ft)	Supply cables of 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Open supply conductors, 750V to 22kV (ft)
Where sailboating is not suitable or is prohibited				
Vertical clearance	14.0	14.5	15.0	17.0
Where sailboating is allowed				
Surface area of less than 20 acres	17.5	18.0	18.5	20.5
Surface area of 20 to 200 acres	25.5	26.0	26.5	28.5
Surface area of 200 to 2000 acres	31.5	32.0	32.5	34.5
Surface area of over 2000 acres	37.5	38.0	38.5	40.5
Established boat ramps for launching sailboats	Clearance aboveground shall be 5 feet greater than the required clearance for the water area served by the launching site			

Notes:

- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement

To Water Areas - Pools

Scope

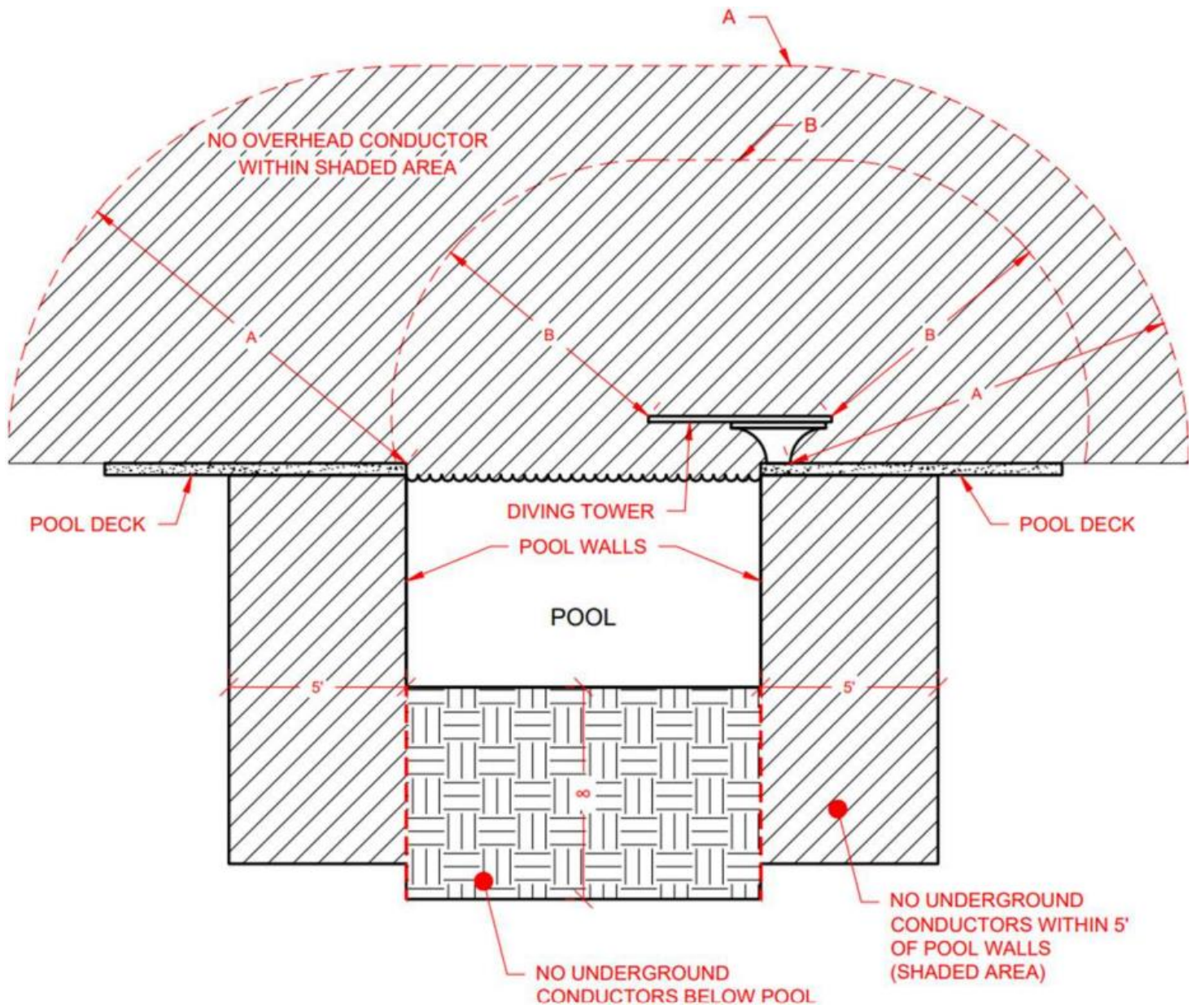
This section outlines the minimum clearance requirements between wires, conductors and cables from in-ground pools, above-ground pools, storable swimming or wading pools, or any other water surface. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company's construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company's standards shall govern.

Clearance Values

	Messengers, overhead shield/surge-protection wires, guys, neutral conductors (ft)	Supply cables of 0 to 750V (ft)	Supply cables over 750V; open supply conductors, 0 to 750V (ft)	Open supply conductors, 750V to 22kV (ft)
A. Clearance in any direction from the water level, edge of the pool, or base of diving platform	22.0	22.5	25.0	27.0
B. Clearance in any direction to the observation stand, diving platform, tower, water slide, or other fixed pool-related structures	14.0	14.5	17.0	18.0

Notes:

- It is recommended by the Company that the customer refrain from installing such water areas near service cables. If any water surface (above-ground pools, in-ground pools, spas, hot tubs, etc.) is being installed over or under existing service, the service shall be moved and relocated at the customer's expense.
- These clearance values do not apply for neutral conductors, guys and messengers, and covered multiplex cable of 0 to 750V, that is 10 feet or more horizontally from the edge of the pool, diving platform, diving tower, and water slide, or other fixed pool related structures.
- These clearances do not apply to a pool fully enclosed by a solid or screened permanent structure
- These clearances do not apply to spas, whirlpools, hot tubs, or other similar installations not suitable for swimming. The clearances in the table allow for the use of skimmers and rescue poles.
 - Spas, etc., not suitable for swimming, are usually installed as part of a building (i.e. on a patio, deck, or balcony) or as a similar installation shall be found in the clearance document for overhead line to buildings for accessible areas and pedestrian accessible areas. Such clearances shall be measured from the highest point of the installation upon which people can stand.
- Voltages are phase-to-ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. Clearances are with no wind displacement.



Underground Clearance

Scope

This section outlines the general principles and application rules for determining required clearances and installation practices for underground electric service cables and conductors. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company’s construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company’s standards shall govern. Additional requirements may apply under state or local regulations. For unusual circumstances, voltages, structures, or environmental conditions, consult the Company.

Environmental and Site Conditions

- Underground installations must consider soil conditions, which affect trench integrity and burial depth. Rocky or unstable soils may require deeper burial or conduit encasement.
- Cable depths at the time of installation may need to be adjusted to meet known grade changes.

Transitional Clearances

Where conductors pass under driveways, retaining walls, or other structures, use conduit and maintain the greater of applicable burial depths.

Special Considerations

- A minimum of 5 feet of clearance is required from fire hydrants for all electric service cable.

Depth Requirements

Scope

This document outlines the minimum burial depth requirements for underground electrical installations beneath the finished grade from the top of the conduit. These guidelines are based on the minimum requirements of the National Electrical Safety Code (NESC) and, where applicable, the National Electrical Code (NEC, NFPA 70). They represent code-required minimum clearances only. The Company's construction standards may exceed these minimums, and all new construction, system modifications, and customer-requested upgrades must comply with current Company requirements as outlined in the full Electric Service Standards. Where discrepancies exist, the Company's standards shall govern.

Clearance Values

Voltage (phase-to-phase)	Required burial depth (inches)
0 – 600	24.0
601 – 50,000	30.0

Notes:

- Where conflicts with other underground facilities exist, street and area lighting cables operating at not more than 150V to ground may be buried at a depth not less than 18 inches
- In solid rock or obstructions, when these depths are impractical; depth may reduce to 12" with
 - 3" of sand bedding above and below the conduit.
 - 3"x12"xLength of conduit span of red concrete poured on top of 3" deep sand bedding on top of the conduit
- MODOT requires a minimum of 30 inches of cover for electric facilities ([EPG Section 643.3.3](#)).
- KDOT requires 48 inches minimum depth for buried electrical lines paralleling the right-of-way ([Part II-A7](#)) and five feet below crown grade or three feet below ditch grade for crossings ([Part III-B1](#)).
- The top of a conduit system should not be located less than 36 inches below the top of the rails of a street railway or 50 inches below the top of the rails of a railroad. The respective rail company may require a greater clearance, and it is the responsibility of the customer to ensure the required depth is met.
- Minimum burial depths must be measured from the final grade after backfilling has settled to ensure compliance.

To Structures – All Parts

Scope

This document outlines the minimum clearance requirements between underground conductors within conduit from foundations, retaining walls, buildings, and other structures.

Clearance Values

- Cable should not be installed directly under the foundations of buildings or other structures, such as tanks, tool sheds, etc.
- A horizontal clearance of 12 inches or more is required from any given edge of a structure in the ground such as foundation, retaining walls, building walls, or other structures.

To Utility Lines – All Parts

Scope

This section outlines the minimum clearance requirements between underground conductors within conduit from communication, sewer, gas, water, etc.

Clearance values

- The horizontal clearances shall be controlled at a minimum of 12 inches or larger as necessary to permit access to, and maintenance of, facility without damage to the other.
- No conduit shall be installed along the top of or below company cables, conduit, and underground facilities.

Special Considerations

- When necessary, a line may cross over conduit but must maintain a clearance of 18 inches vertically above or below.
- Customer-owned utilities shall not be installed within 24 inches of conduit containing company wire.

Notes:

- Local utility providers may have clearance requirements that exceed the minimums listed here. It is the customer’s responsibility to verify and comply with all applicable utility, municipal, and regulatory standards before installation.

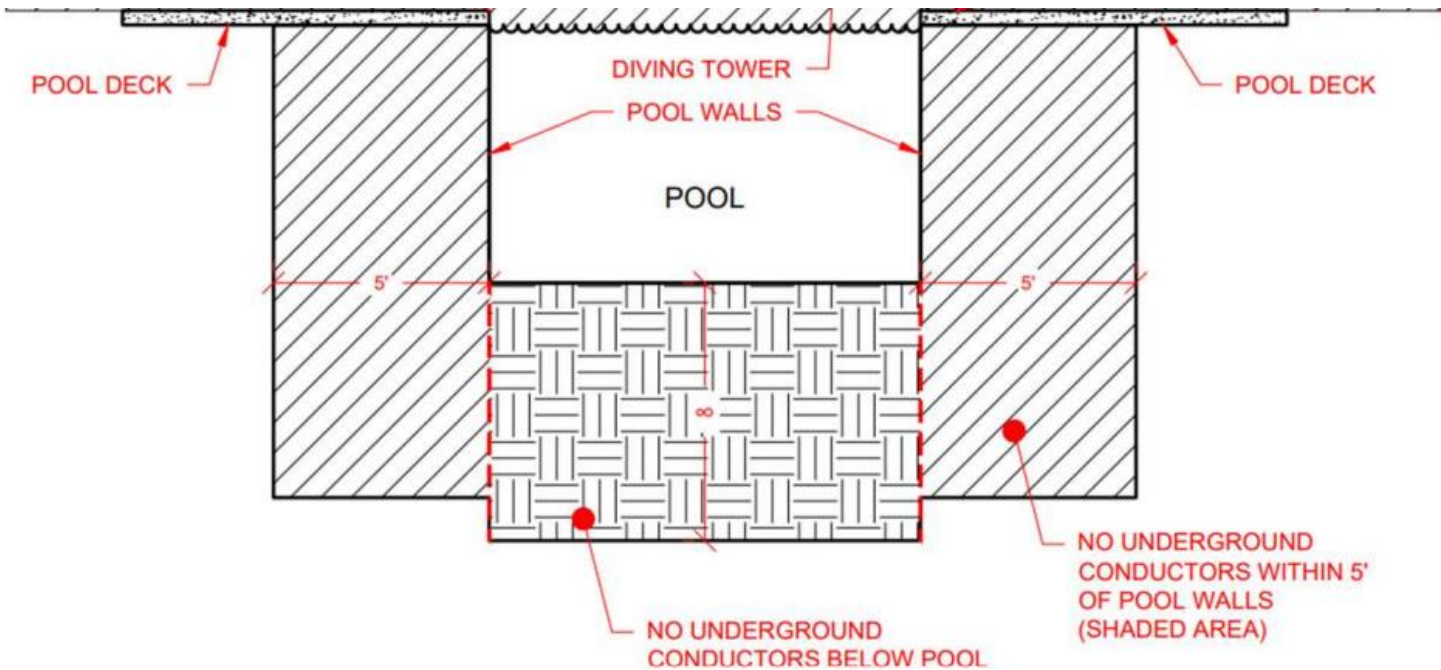
To Water Features – All Parts

Scope

This section outlines the minimum clearance requirements between underground conductors within conduit from pools, hot tubs, spas, fountains, and other installed water structures.

Clearance Values

- Supply cable and its conduit should not be installed within 5 feet horizontally of an in-ground water structure or its auxiliary equipment. The installation of supply cable directly beneath a water structure is prohibited.
- Notes:
- It is recommended by the Company that the customer refrain from installing such water areas near service cables. If any water surface (above-ground pools, in-ground pools, spas, hot tubs, etc.) is being installed over or in proximity to existing service, the service shall be relocated at the customer's expense.
 - Please see the additional note in **8003.0-000** for clearance from fire hydrants



Meter Clearance

Scope

This section establishes the minimum clearance requirements for electric meter installations to ensure safe operation, accessibility, and compliance with applicable codes. These requirements apply to all residential, commercial, and industrial service installations where an electric meter enclosure is installed. Additional requirements may apply under state or local regulations. For unusual circumstances, voltages, structures, or environmental conditions, consult the Company.

Working Space Clearance Requirements

- Electric meter enclosures must be installed with adequate working space to allow safe operation and maintenance.
- Clear working space of at least 4 feet must be maintained in front of the meter enclosure.
- Clear working space of at least 3 feet must be maintained from the edge of the meter enclosure.
- Enclosure must be located at least 3 feet away from swing doors, swing windows, and other openings when they are fully extended towards the working space.
 - Windows that never extend into the working space may be treated as part of a wall for clearance purposes; however, no equipment shall be installed on the window, and no conduit shall be run directly on its exterior surface.

Structural Clearances

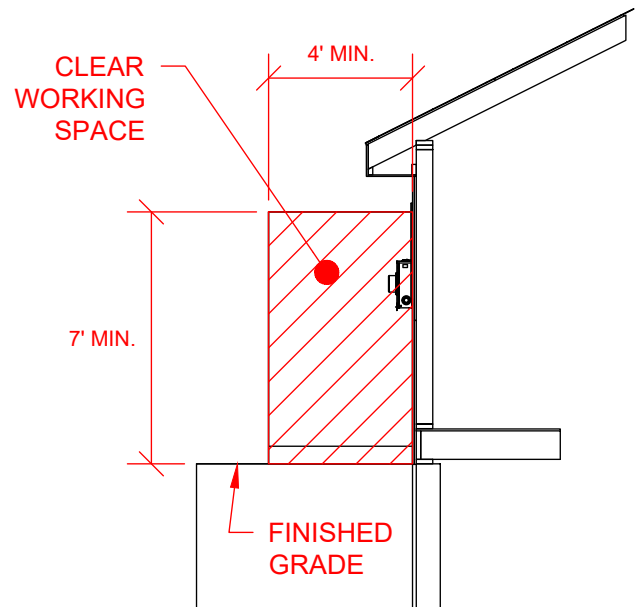
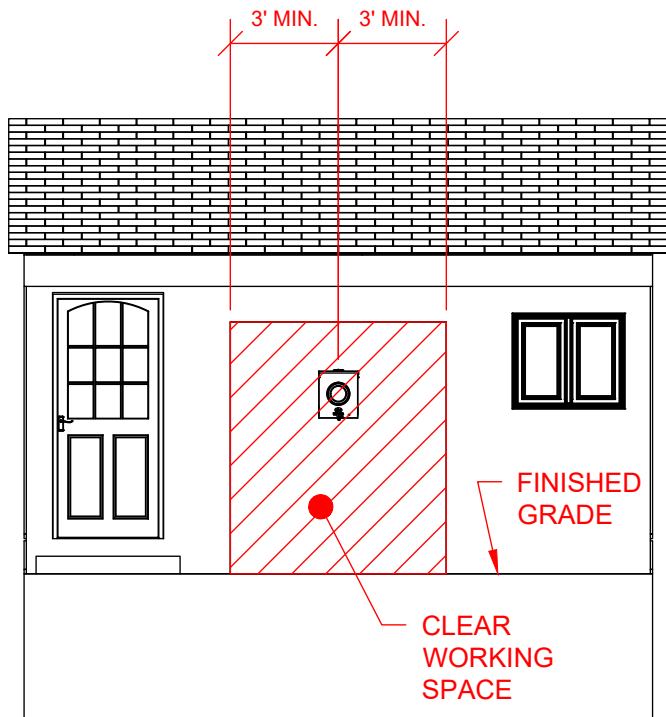
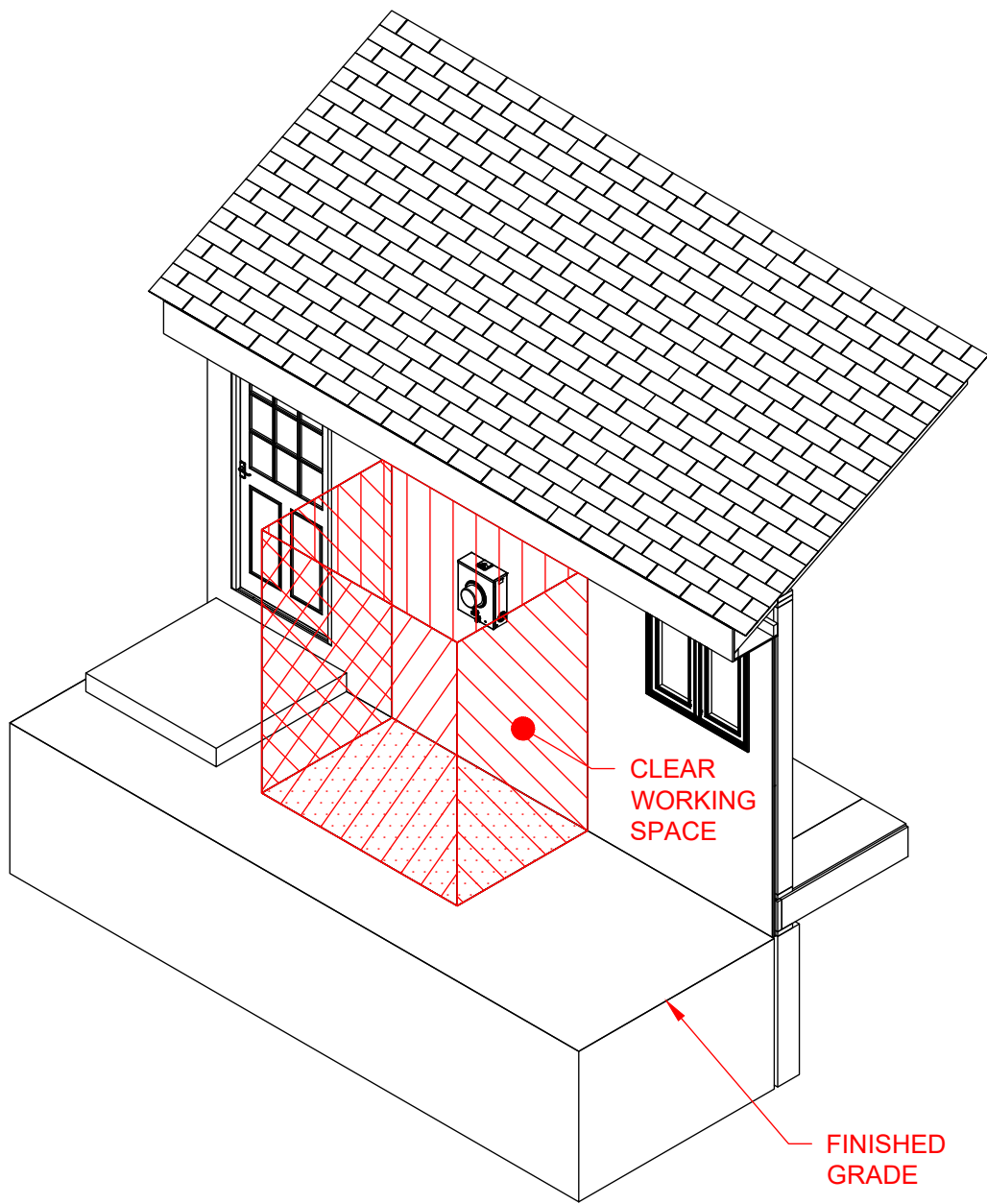
- Any building overhang above the meter enclosure must provide a minimum clearance of 7 feet above final grade.

Equipment Separation

- Gas meters, air conditioning units, and other equipment shall not be located within the clear working space surrounding the electric meter.

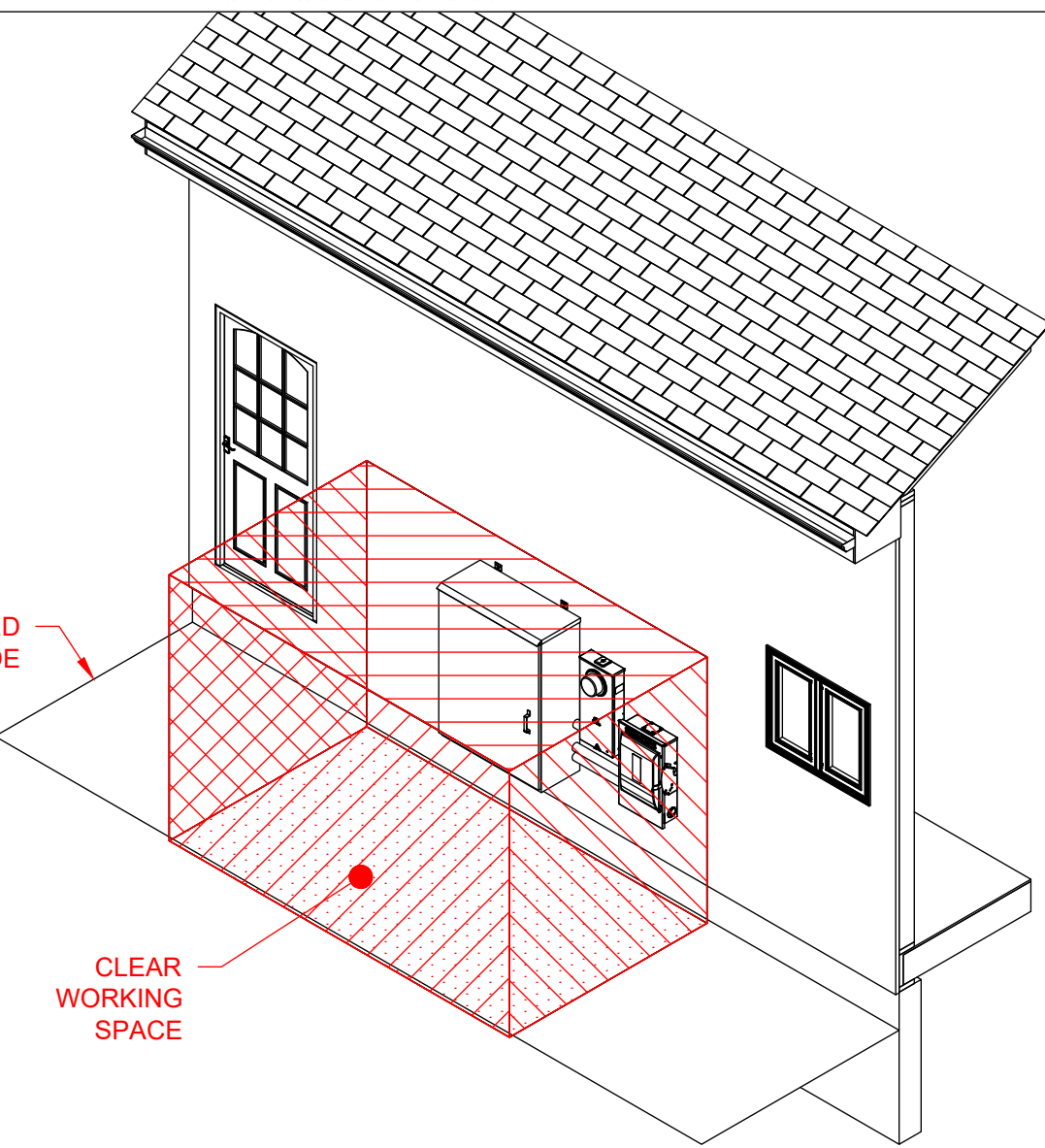
Special Considerations

- C.T. rated metering may require greater clearances than those listed here.



FINISHED
GRADE

CLEAR
WORKING
SPACE

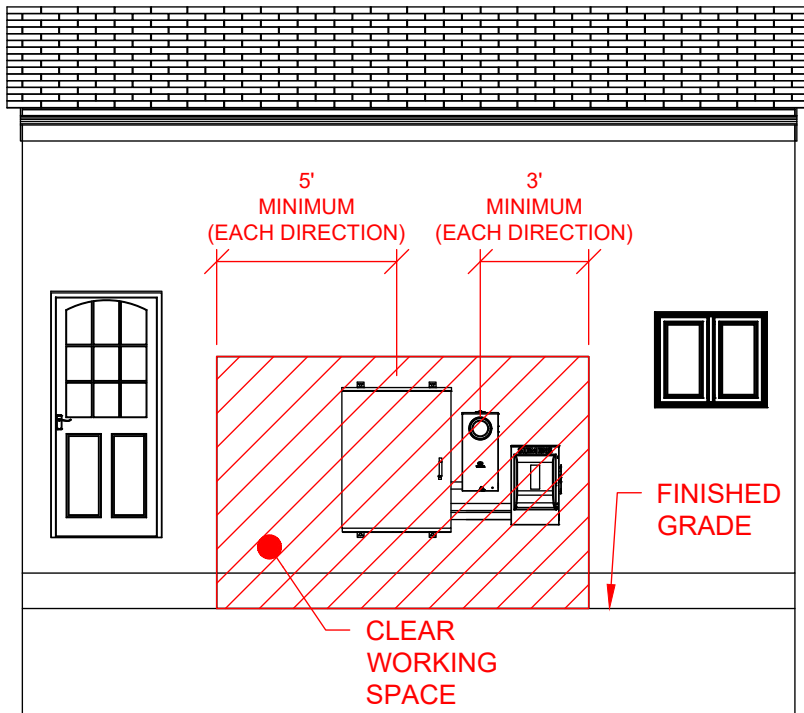


5'
MINIMUM
(EACH DIRECTION)

3'
MINIMUM
(EACH DIRECTION)

FINISHED
GRADE

CLEAR
WORKING
SPACE

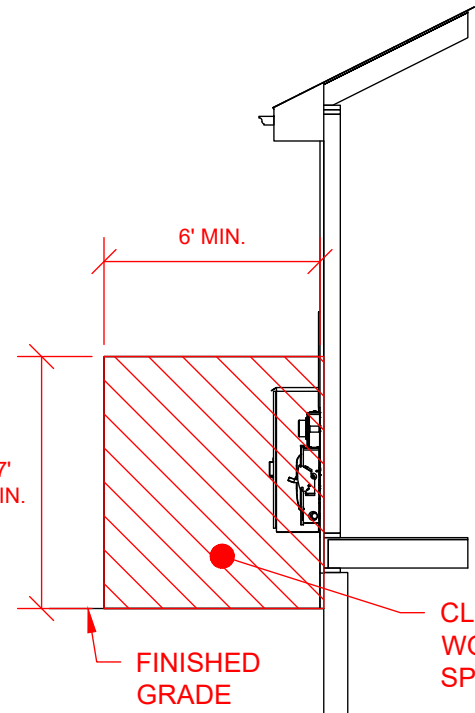


6' MIN.

7'
MIN.

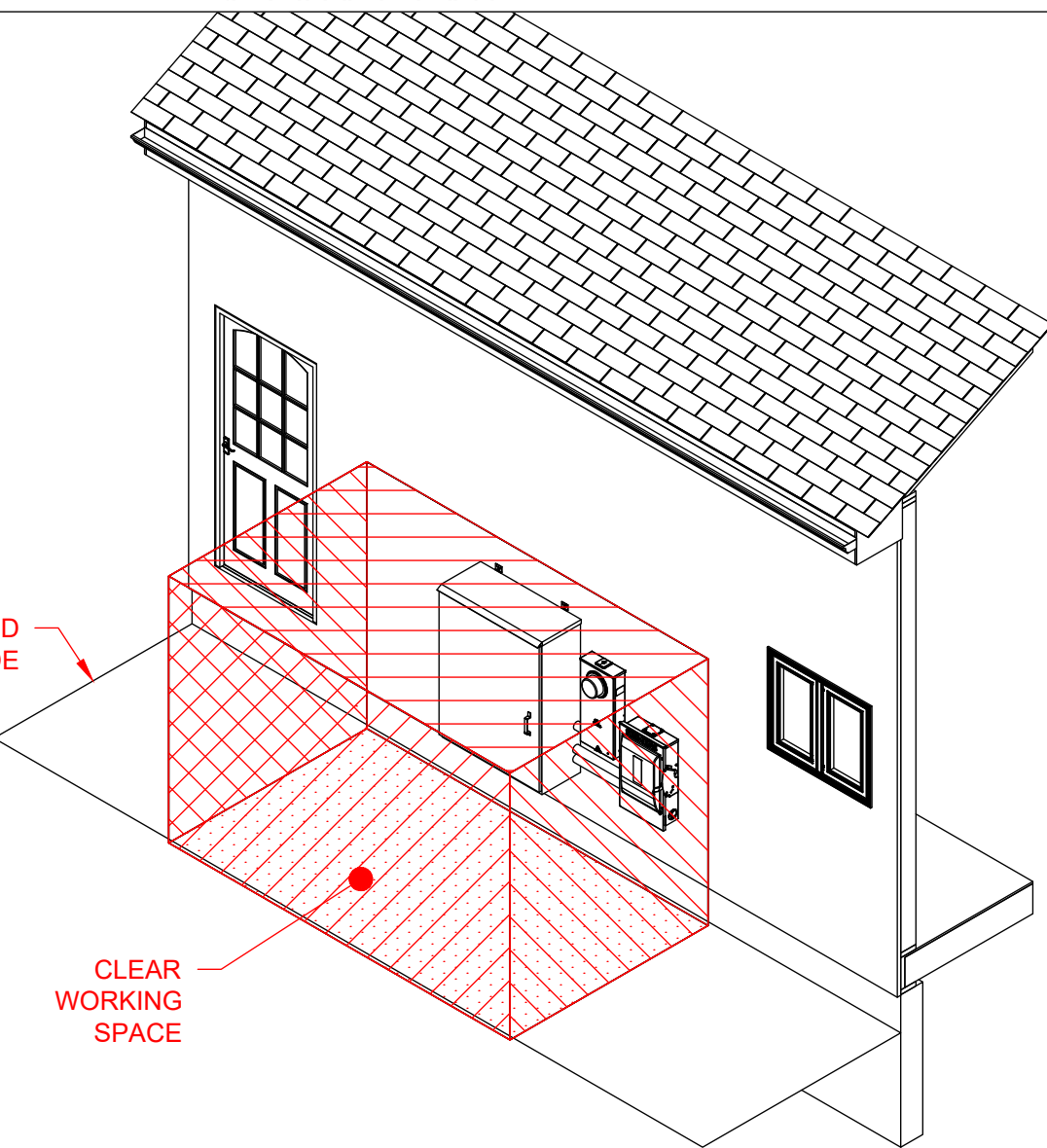
FINISHED
GRADE

CLEAR
WORKING
SPACE



FINISHED GRADE

CLEAR WORKING SPACE

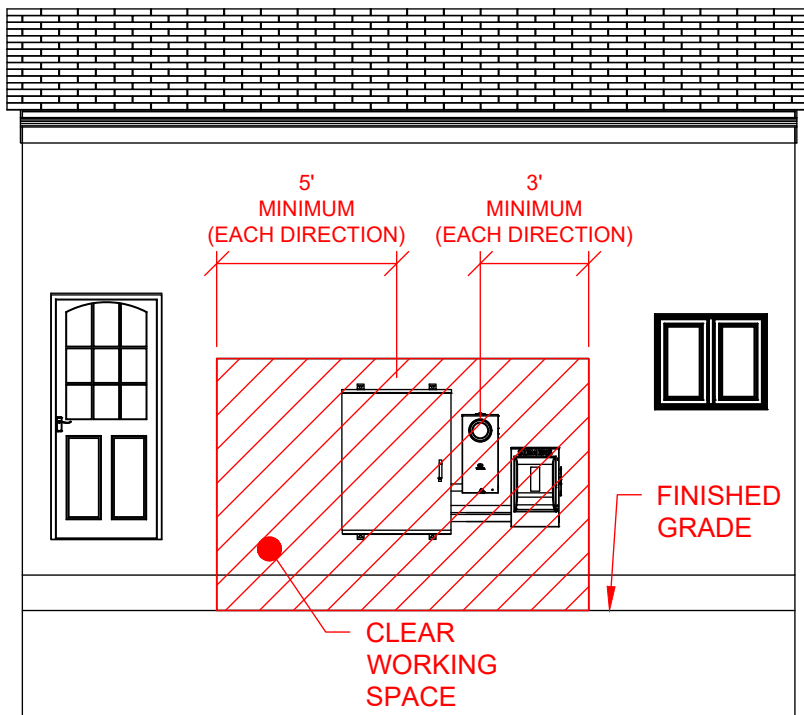


5' MINIMUM
(EACH DIRECTION)

3' MINIMUM
(EACH DIRECTION)

FINISHED GRADE

CLEAR WORKING SPACE

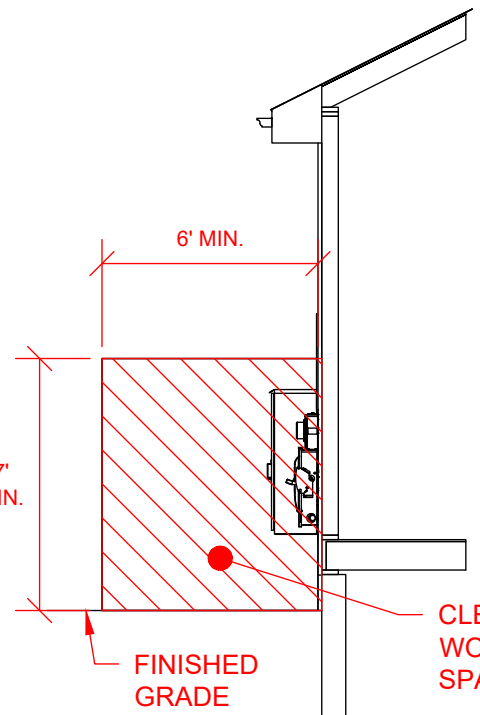


6' MIN.

7' MIN.

FINISHED GRADE

CLEAR WORKING SPACE



Equipment Clearance

Scope

This section defines minimum clearance requirements for Evergy-owned electrical equipment when installed near buildings, driveways, parking lots, and other structures. These requirements ensure safe installation, maintenance access, and compliance with Evergy standards and applicable codes. Additional requirements may apply under state or local regulations. For unusual circumstances, voltages, structures, or environmental conditions, consult the Company.

Working Space Clearance Requirements

- Equipment with an opening requires 10 feet of clearance maintained in all directions from that opening.
- A clearance of 3 feet must be maintained in all directions from the edge of equipment that does not open.
- No window should extend into the working space of the equipment as outlined in the equipment clearance drawings

Special Considerations

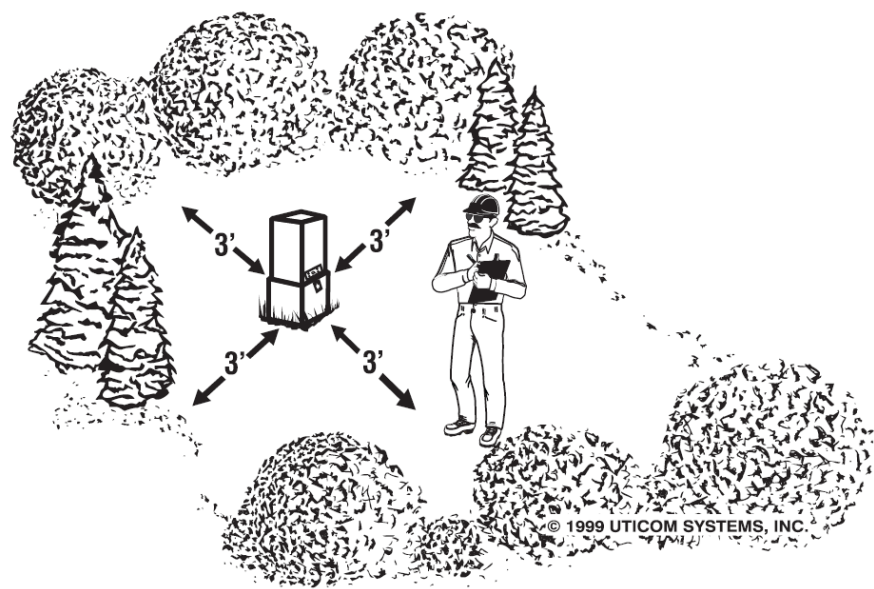
- A minimum of 5 feet of clearance is required around the circumference of fire hydrants for all Evergy-owned equipment.

Secondary Pedestal

Scope

These are the clearances required surrounding secondary pedestals.

Clearance Values



We need room to work safely on this device. Please keep shrubs and structures 3 feet away from the sides.

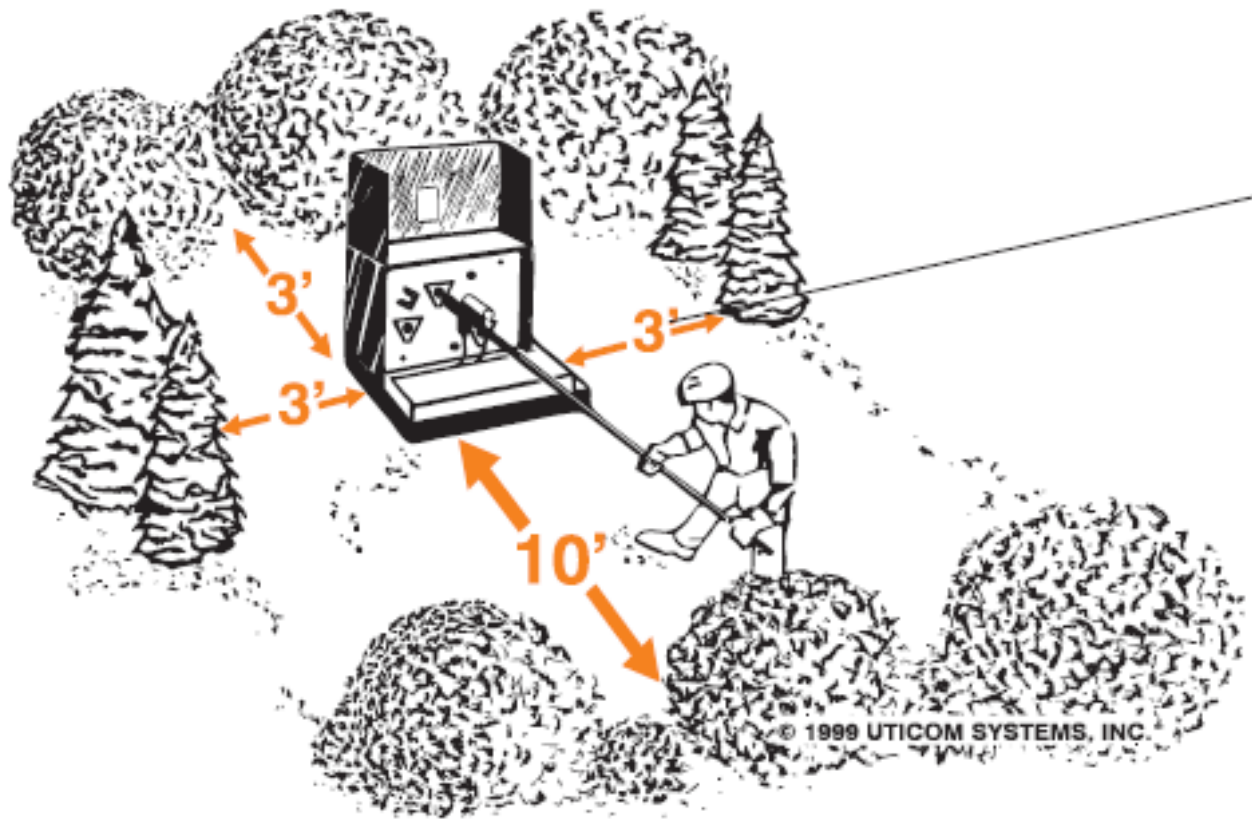
Obstructions may be damaged or removed during service restoration or maintenance.

Single-Phase Sectionalizing Cabinet

Scope

These are the clearances required surrounding single-phase sectionalizing cabinets.

Clearance Values



We need room to work safely on this device. Please keep shrubs and structures 10 feet away from the side with doors and 3 feet from other sides.

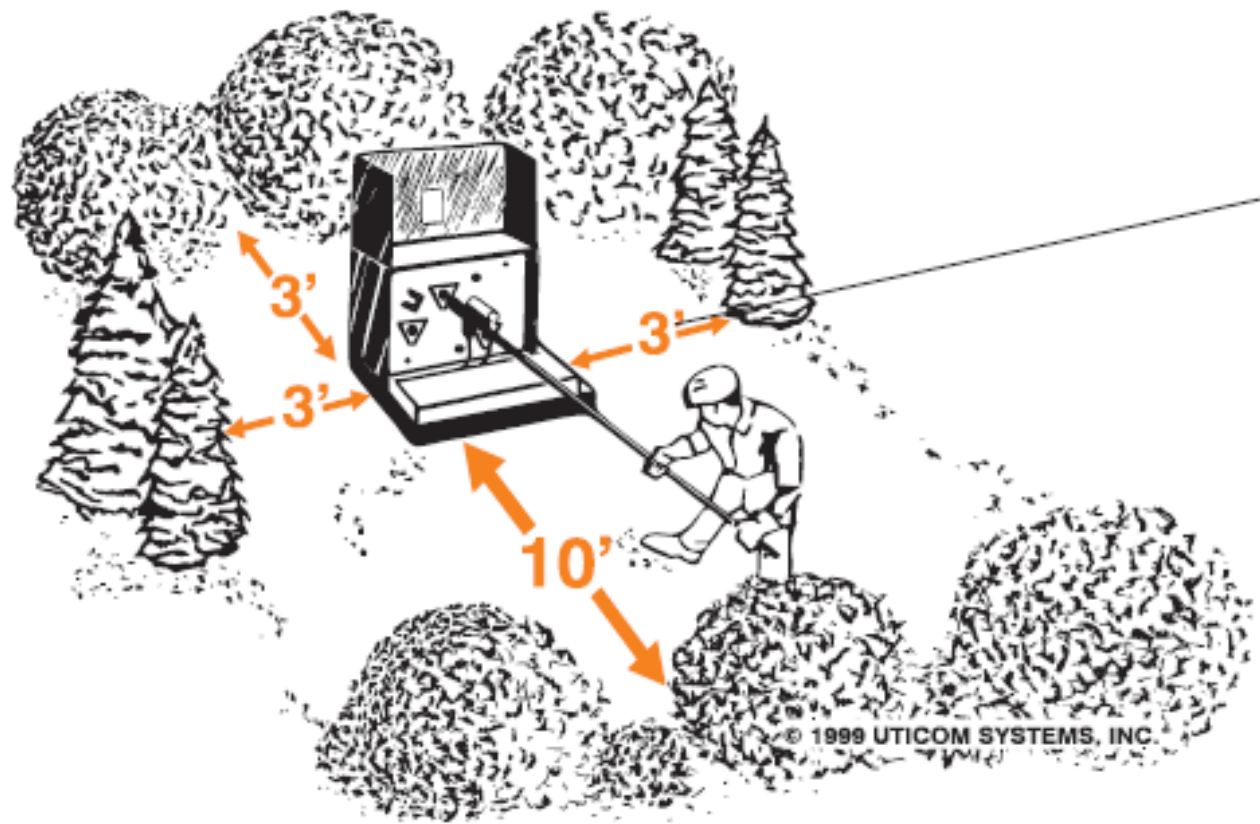
Obstructions may be damaged or removed during service restoration or maintenance.

Three-Phase Sectionalizing Cabinet

Scope

These are the clearances required surrounding three-phase sectionalizing cabinets.

Clearance Values



We need room to work safely on this device. Please keep shrubs and structures 10 feet away from the side with doors and 3 feet from other sides.

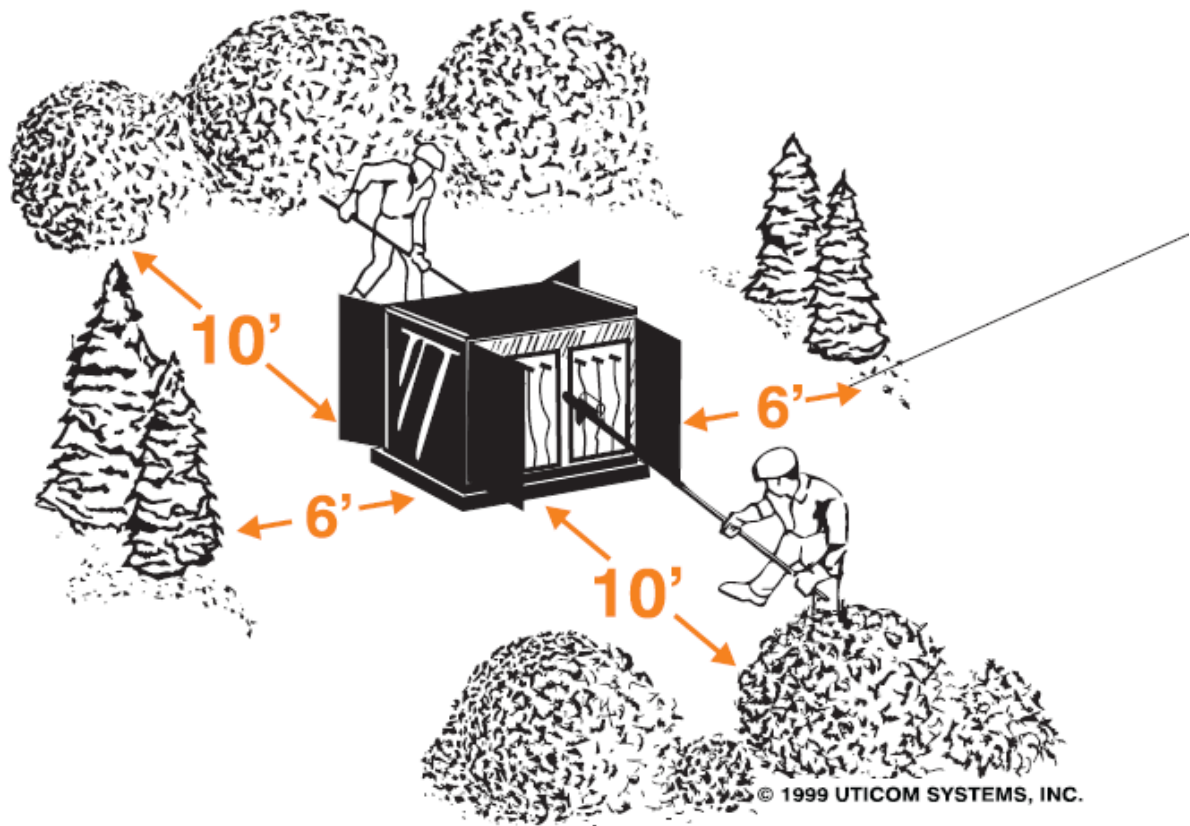
Obstructions may be damaged or removed during service restoration or maintenance.

Two-Sided Switchgear

Scope

These are the clearances required surrounding two-sided switchgears.

Clearance Values



We need room to work safely on this device. Please keep shrubs and structures 10 feet away from the sides with doors and 6 feet from other sides.

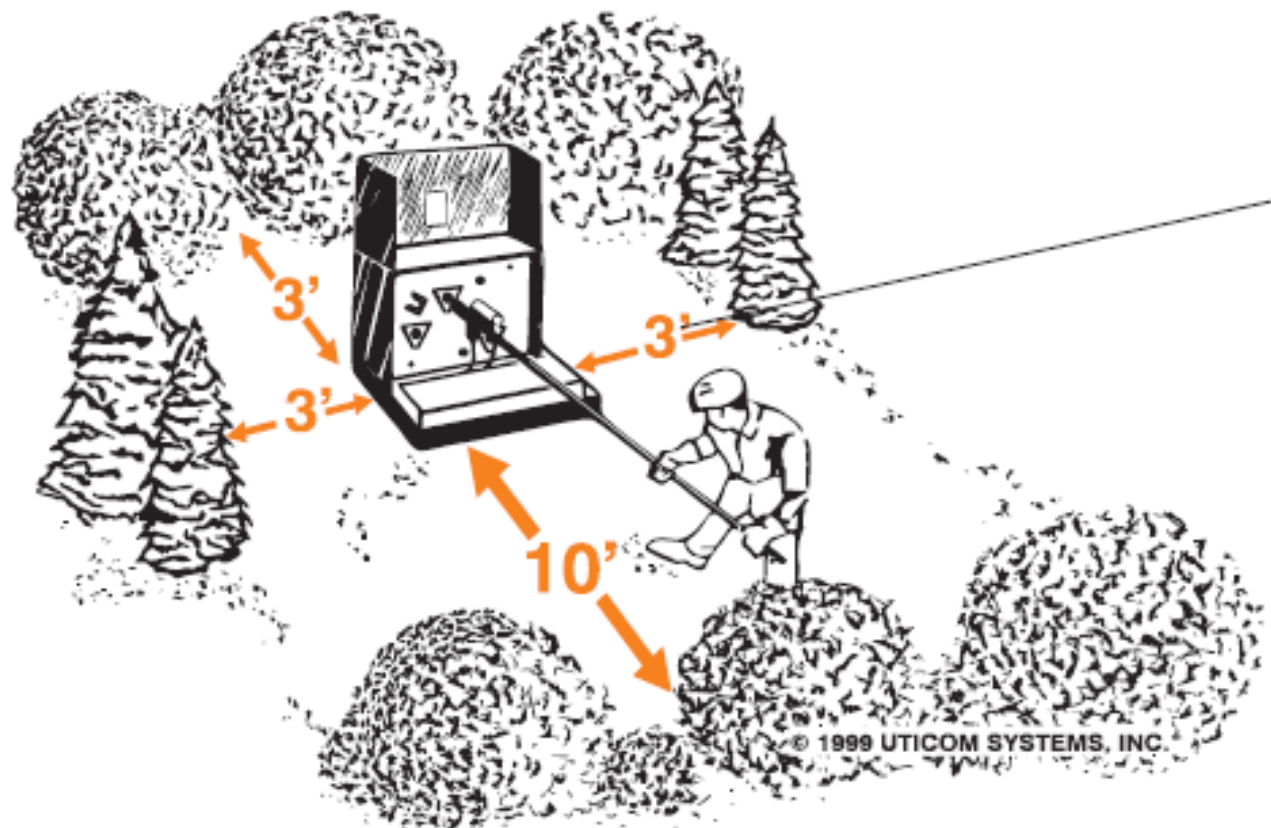
Obstructions may be damaged or removed during service restoration or maintenance.

Single-Phase Padmount Transformer

Scope

These are the clearances required surrounding a single-phase transformer pad.

Clearance Values



We need room to work safely on this device. Please keep shrubs and structures 10 feet away from the side with doors and 3 feet from other sides.

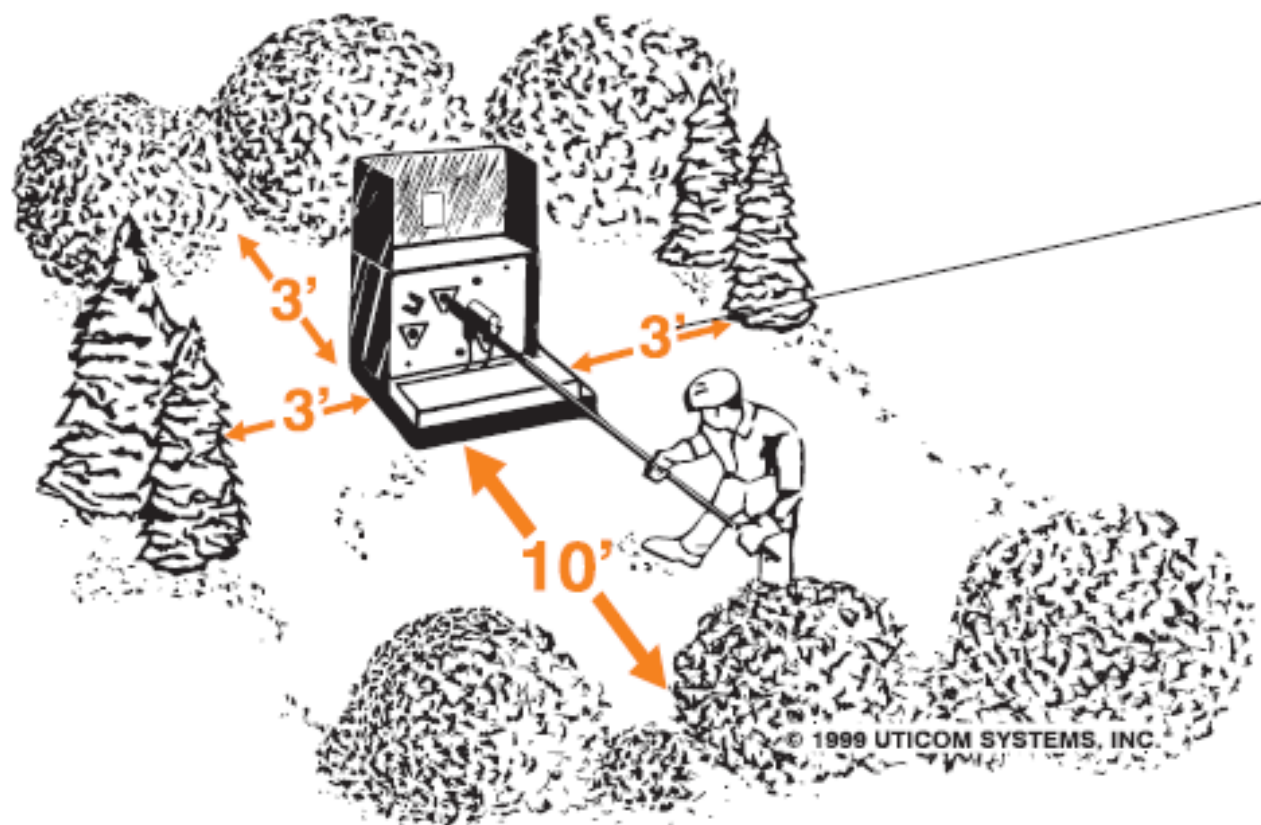
Obstructions may be damaged or removed during service restoration or maintenance.

Three-Phase Padmount Transformer

Scope

These are the clearances required surrounding a three-phase transformer pad.

Clearance Values



We need room to work safely on this device. Please keep shrubs and structures 10 feet away from the side with doors and 3 feet from other sides.

Obstructions may be damaged or removed during service restoration or maintenance.