

Clear Zone



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Definitions: Clear Zone

“Simply stated, it is an unobstructed, relatively flat area beyond the edge of the traveled way that allows a driver to stop safely or regain control of a vehicle that leaves the traveled way.”¹

The clear zone includes shoulders, bike lanes, and auxiliary lanes, except those auxiliary lanes that function like through lanes.²

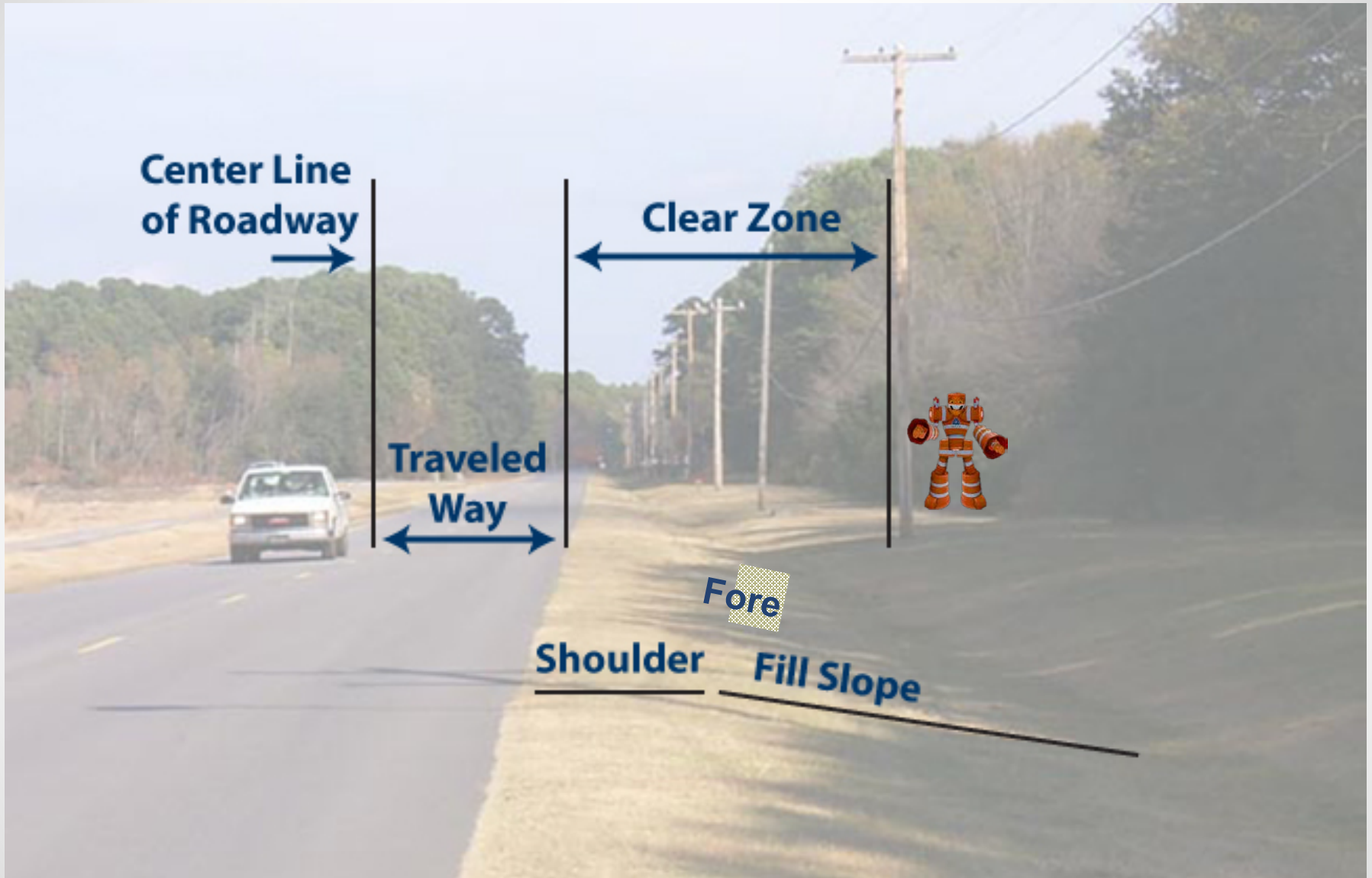
Sources:

1 U.S. Department of Transportation, Federal Highway Administration

<https://www.fhwa.dot.gov/programadmin/clearzone.cfm>

2 Errata to *Roadside Design Guide*, 4th Ed.

<https://downloads.transportation.org/RSDG-4-Errata.pdf>



Definitions: Horizontal Clearance = Lateral Offset

“Horizontal clearance is the lateral offset distance from the edge of the traveled way, shoulder or other designated point to a vertical roadside element. These dimensional values are not calculated, and are not intended to constitute a clear zone.”



Source:

U.S. Department of Transportation, Federal Highway Administration

<https://www.fhwa.dot.gov/programadmin/clearzone.cfm>

Clear Zone vs. Lateral Offset

DCM 5.5.5

- 10 & 5 Rule:

- Regardless of the required clear zone width or ability to implement that width fully, a minimum horizontal clearance [lateral offset] of 10 feet from the edge of travel lane and 5 feet from the edge of pavement shall be provided along rural collectors and rural local roads.

Source:

DelDOT Development Coordination Manual, Eff. May 2016

<https://deldot.gov/Business/subdivisions/index.shtml?dc=changes>

Clear Zone vs. Lateral Offset

DCM 5.5.5

- In urban environments, establishing a clear zone using guidance in Chapter 3 of DeIDOT's Road Design Manual (RDM) is not practical.

Source:

DeIDOT Development Coordination Manual, Eff. May 2016

<https://deldot.gov/Business/subdivisions/index.shtml?dc=changes>

Clear Zone vs. Lateral Offset

Per the RDM & RDG:

- Urban environments are characterized by sidewalks at back of curb, enclosed drainage, fixed objects, frequent traffic stops, lower speeds, on-street parking.
- In these environments, a lateral offset to vertical obstructions, including breakaway devices, is needed to accommodate motorists operating on the highway.

Clear Zone vs. Lateral Offset

- In urban environments, a lateral offset to vertical obstructions...of 1.5' has been considered a minimum from face of curb.
- However, enhanced lateral offset of 4'-6' is recommended from face of curb on tangents and inside curves.
- Non-curbed lateral offsets when CZ cannot be achieved:
 - 8' for tangents and inside of curves
 - 12' for outsides of curves

Source:

DeIDOT Road Design Manual Chapter 3

AASHTO *Roadside Design Guide*, 4th Ed., Chapter 10 (RDG)

Clear Zone & DCM Requirements

Clear zone width and horizontal clearance [lateral offset] shall be shown within plan submissions for the following:

- DCM 4.3.3.A.4. Typical street sections (for each major change of section) for internal streets and frontage roads
- DCM 4.3.10.D. Cross sections (every 50') for subdivision construction plans
- DCM 4.4.5.D. Cross sections (every 50') for commercial entrance plans
- DCM 4.5.1.A.6. Off-Site construction plans

Clear Zone & DCM Requirements

- DCM 5.5.5

The determination of a clear zone is a function of speed, volume, curvature, and embankment slope. Chapter 3 of AASHTO's RDG or other NAS should be used for determining clear zone widths.

When deviations from the clear zone criteria are proposed, the engineer shall prepare and submit justification for review and approval by the Planning Section's Assistant Director.



Justification documentation may include but not be limited to: tables and excerpts from Chapter 3 of AASHTO's RDG or other NAS; construction plan views; and typical sections of the area.

Latest FHWA Guidance on Clear Zone and Horizontal Clearance [Lateral Offset]

<https://www.fhwa.dot.gov/programadmin/clearzone.cfm>

Updated 4/10/2018

- “It is not always feasible to relocate all poles within project limits. Critical locations should be considered for improvement, such as those dictated by crash experience or in potential crash locations, such as within horizontal curves.

Where poles cannot be relocated from critical locations, mitigation such as breakaway or shielding should be considered. Poles should not be installed in a location that could act as a funnel directing an errant vehicle into an obstacle (for example a roadside drainage ditch, that would also disrupt the hydraulics). Locating a pole as far as feasible from the traveled way improves sight lines and visibility, providing a safer roadside.”

Latest FHWA Guidance on Clear Zone and Horizontal Clearance [Lateral Offset]

<https://www.fhwa.dot.gov/programadmin/clearzone.cfm>

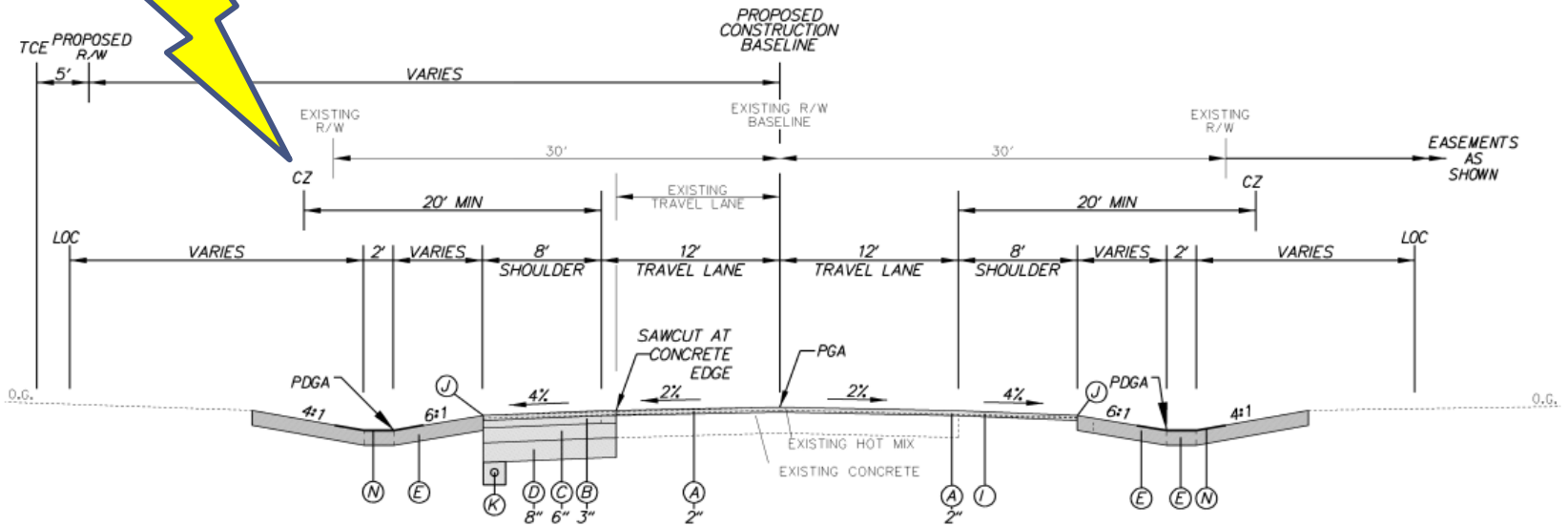
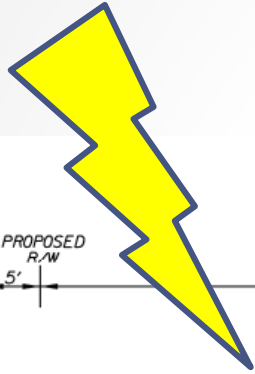
Updated 4/10/2018

- “The difference between a "clear zone" and horizontal clearance or "operational offset" has been a topic of much confusion. When the Green Book and the Roadside Design Guide were last updated, the AASHTO committees coordinated to dispel the misunderstanding that 2 feet (actually, 18 inches) behind a curb constituted a clear zone.

Since curbs are now generally recognized as having no significant containment or redirection capability, clear zone should be based on traffic volumes and speeds, both without and with a curb.

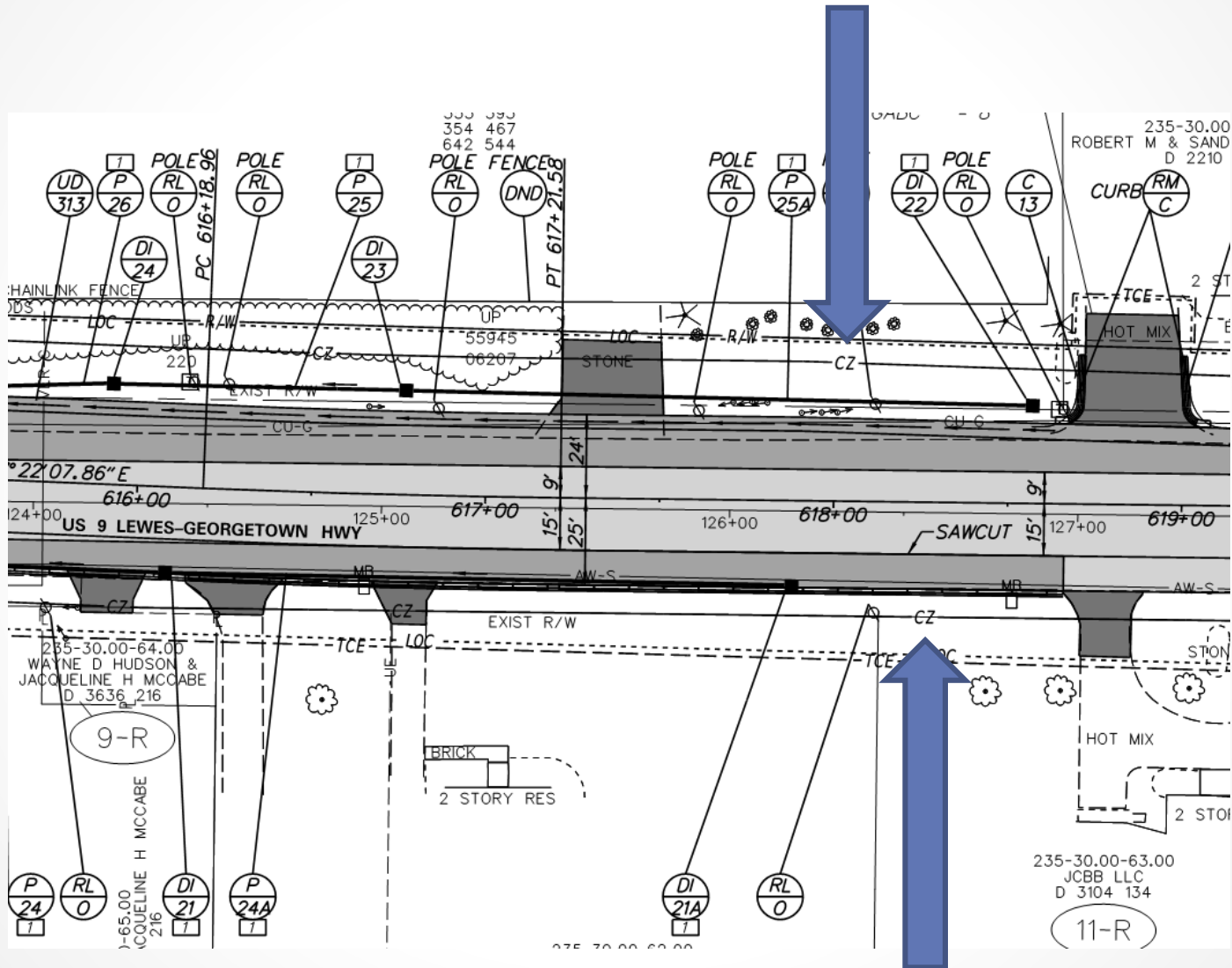
Realizing that there are still contradictory passages in various AASHTO documents, the Technical Committee on Roadside Safety has initiated a short-term project to identify all such inconsistencies and to recommend appropriate language corrections. This effort is underway. The fourth paragraph under Section 3.4.1 Curbs in the 2002 Roadside Design Guide correctly defines AASHTO's "position".”

Clear Zone Sample Plans



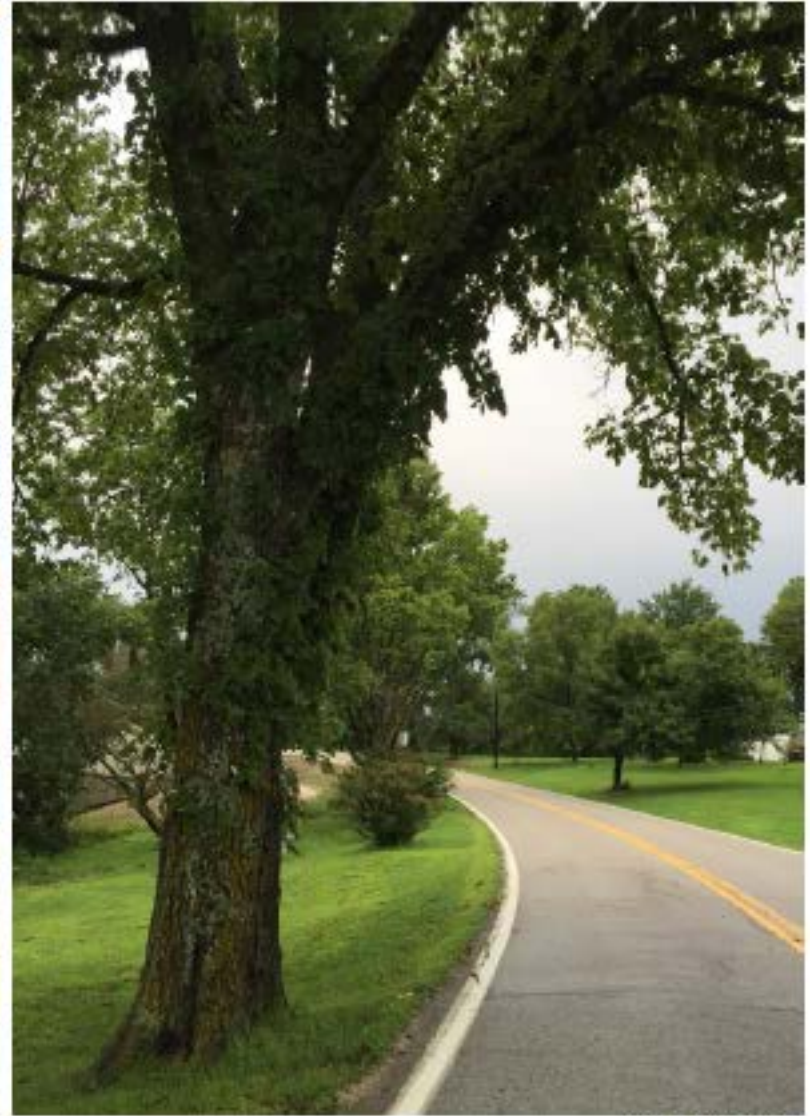
TYPICAL NORMAL SECTION - U.S. 9
 STATION 600+00.00 TO 601+35.48

Clear Zone Sample Plans





Source: Dan Woog, www.danwoog06880.com.



Source: Joseph Jones

Thank you!

