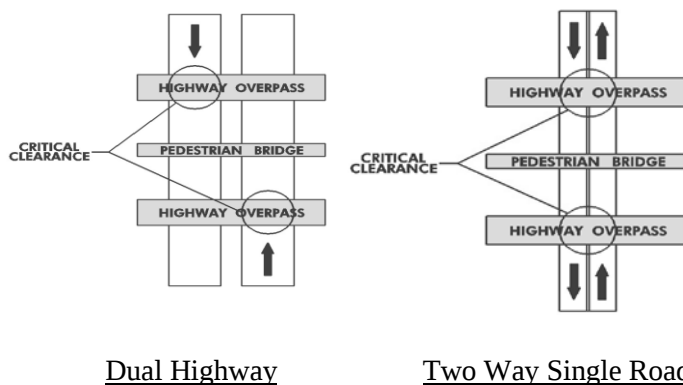


 Office of Structures Guidelines and Procedures Memorandum	DESIGN
	Number: D-75-7(4)
	Date: 12-18-2018
Vertical Underclearance for Bridges over Highways and/or Roads, and Bridges with Overhead Bracing	
Approval: DRAFT	

In order to meet AASHTO Specifications and to accommodate the increased depth of resurfacing on highways under bridges the design vertical underclearances are to be the following:

1. For all bridges (except pedestrian bridges) over Arterial Roads (Rural and Urban) or over Freeways, the minimum design vertical underclearance is to be 16'-9", which provides for 16'-0" absolute minimum and 9" of future surfacing.
2. For all bridges (except pedestrian bridges) over Local Roads and Streets, or over Collector Roads and Streets, the minimum design vertical underclearance is to be 15'-0", which provides for 14'-6" absolute minimum and 6" of future surfacing. (AASHTO only requires a 14'-0" absolute minimum. By providing 14'-6", there will be a 1' minimum clearance above the Maryland legal vehicle height of 13'-6".)
3. For pedestrian bridges, the underclearances specified in 1 and 2 above shall be increased by 1'-0". However, if there are highway overpass structures in close proximity of the proposed pedestrian bridge that have an underclearance greater than the minimum required underclearance of the pedestrian bridge and no access points between the highway overpass bridge and the pedestrian bridge – then the pedestrian bridge shall have its underclearance increased as determined by the Director. See below.



4. For any bridge with overhead structural elements (e.g. movable bridges with overhead bracing for counterweights or through truss bridges, etc.), the vertical clearance to the overhead structural element shall be 17'-6" minimum.
5. For locations where the underclearance is below 14'-6" and cannot be revised due to geometric or structural constraints, the design should be modified to resist impact by over height vehicles. The modifications shall include increasing the bottom flange and adding cross frames/diaphragms to transfer the impact load to the bridge deck.

These underclearances apply to the entire usable roadway area, including shoulders.

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	Approval: See Sheet 1

The actual computed vertical underclearance shall be shown for each bridge in a project. The Point of Minimum Vertical Underclearance shall be shown in the General Plan. The location and actual underclearance shall be shown on the Elevation view. Should a bridge cross more than one roadway (e.g. two directional traffic), the actual vertical underclearance shall be shown for each roadway.

Temporary reductions in underclearance during construction may be required. When a temporary reduction in underclearance provides less than 16'-0" for bridges over Arterial Roads, or Freeways or less than 14'-6" for bridges over Local or Collector Roads and Streets, the work area shall be signed with the reduced underclearance caused by construction. If circumstances require the underclearance be less than 14'-6", then consideration should be given to temporarily closing the road below during construction.

Contract Documents should be prepared in such a way that Contractors are encouraged to maintain as much underclearance as possible during construction. When the signage noted above becomes necessary, the initial cost of supplying and placing the signs will be incidental to other items in the contract. When circumstances require the closure of lanes under a bridge due to underclearance restrictions, then consideration should be given to including lane rental provisions in the contract to ensure timely completion of the work.

NOTE: For additional information, see AASHTO LRFD 2.3.3.2.