

DB Section 141.23 - Guardrails and Barriers

(a) Scope - This Section contains the performance requirements for metal guardrail and concrete Roadside and median barriers.

(b) Standards - Design-Builder shall design and construct all guardrails and barriers on Roadsides and in medians in accordance with the requirements of this Section 141.23.

- Memos to Designers, as appropriate (on line at: <http://www.odot.state.or.us/tsroadway/memos.htm>)
- ODOT *Highway Design Manual*
- AASHTO *Roadside Design Guide*
- The appropriate ODOT/APWA Oregon Standard Construction Drawings from the following site: <http://www.odot.state.or.us/tsroadway/std-dwg-02.htm>
- AASHTO, "A Policy on Geometric Design of Highways and Streets" (Green Book)
- **DB Standard Specifications** (Parts 00200 through 03000 of the *Oregon Standard Specifications for Construction*)
- ODOT Qualified Products List (QPL) at the following site: <http://egov.oregon.gov/ODOT/HWY/CONSTRUCTION/QPL/Docs/QPL.pdf>

(c) Requirements

(1) General - New and replacement metal guardrails and concrete barriers shall be designed in accordance with, and constructed at locations within the Project Site determined by application of, the *AASHTO Roadside Design Guide*. Design-Builder shall provide backup calculations that document the length of guardrail required at each Work Location. Design-Builder shall install all guardrails and barriers in accordance with the requirements of the **DB Standard Specifications**, and shall allow for e-distance to be added in guardrail runs according to the applicable design Standards.

Any existing concrete barrier (median or Roadside) that must be temporarily removed during construction shall be replaced with Tall Type "F" barrier and appropriate rail transition segments.

(2) Median Barrier – Unless otherwise specified in the **DB Special Provisions**, Design-Builder shall provide Tall Type "F" barriers, as shown in the *AASHTO Roadside Design Guide*, for median concrete barriers, and shall adjust the barrier shape as necessary to accommodate Bridge piers, sign supports, and light poles, if any, located on the median. Design-Builder shall retain the Tall Type "F" barrier face through these areas.

If cable guardrail as a median barrier is included in the Accepted Definitive Design, Design-Builder shall use Materials and applicable terminal sections from the ODOT Qualified Products List (QPL). The cable barrier system shall not exceed 10-feet

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deflection, and Design-Builder shall follow the manufacturer's installation requirements and anchor specifications.

If metal guardrail as a median barrier is included in the Accepted Definitive Design, Design-Builder shall use Materials and applicable terminal sections in accordance with the requirements of the **DB Standard Specifications**.

(3) Roadside Barrier - Any Roadside barrier selected to be used by Design-Builder must have been successfully tested to NCHRP-350 requirements for the anticipated site conditions. If the use of metal guardrail as a Roadside barrier is included in the Accepted Definitive Design, Design-Builder shall use Materials and applicable terminal sections complying with the requirements of the **DB Standard Specifications**.

(4) Submittals – Design-Builder shall submit the following to Agency PM for Review and Comment:

- **Backup calculations that document length of need required at each guardrail installation** – at Readiness-for-Construction
- **Product manuals** - upon installation of the product or Material or upon Agency PM's request