

Sound and Safety Barriers

Sound Barriers

There are three distinct areas where sound barriers have been deemed “possible” or “potential” for the project according to the FEIS:

- Springdale Road and Wolf Pen Woods
- Adjacent to the Harbor at Harrod’s Creek
- Transylvania Avenue

The Historic Preservation Plans (HPP) may also identify additional needs for sound and visible barriers.

Aesthetic treatment of sound barriers has also been extensively studied and there are many treatments available to help ensure that the design of these larger scaled barriers fit appropriately within the context from which they are viewed. Sound barriers can be treated with any kind of architectural finish using form liners or they can be made out of different materials, textures and colors. They can be installed with various combinations of landscape and earthen berms to better blend into the existing neighborhoods they serve.

Sound barriers can also be designed with a translucent material to preserve visibility and access to daylight. Where there is sufficient right-of-way, sound barriers can be shaped to break up large lengths of straight runs, and to preserve large stands of mature trees.

Safety Barriers

Safety barriers will be required at the tops of major cut slopes and rock faces to limit pedestrian access to the highway. Safety barriers will be required at both sides of the tunnel associated with the portal design, and at the top of the deep cuts adjacent to Bridgepointe, Shadow Wood, and the Harbor at Harrod’s Creek.

Aesthetic treatments of safety barriers are similar to those available for sound walls, with the exception that ornamental fencing may also be used in lieu of a wall where sound barriers are not needed.



Sound wall treatment I-495 Beltway, VA.



Transparent sound wall.



Stone wall screening parking area along the Natchez Trace Parkway.

Barriers and Walls

Design Concepts:

Concept A – illustrates what a freestanding barrier or wall might look like accompanied with landscape to visually screen views toward the roadway.

Concept B – illustrates what could be accomplished in the way of visual screening using berms and landscape without the use of walls (without sound barriers)

Concept C – illustrates what a combination of walls, berms and landscape might look like including the use of retaining walls to gain more effective visual screening capability.

A description of the function and potential aesthetic treatment of each type of barrier or wall under consideration, along with examples from other places, is included on the following pages.

Barriers and walls constitute major design elements throughout the Section 4 alignment. Barriers will be needed along the roadside and in the median where adequate clear areas are not available. Additional barriers may be needed to mitigate the effects of sound coming from the roadway and as a safety measure at the top of the steep cuts adjacent to neighborhoods.

The matrix on the inside pages of this Bulletin arrays the design concepts into three clear choices. Illustrations were prepared from four distinct viewpoints (across the top) to show what each of the three concepts (down the side) would look like in context with adjoining neighborhoods as well as from the roadway.

Roadside and Median Barriers

Roadside and median barriers are typically used when it is not economically or environmentally feasible to remove a fixed object or other area of concern from the roadside clear area. Roadside barriers are also needed in areas where there is insufficient right-of-way to grade back cut and fill slopes to a suitable slope and to avoid the taking of property.

Aesthetic treatment of roadside and median barriers has been extensively studied in recent years resulting in several crash-tested alternatives to standard “W-beam” guardrail systems. These may include, rusting steel or color galvanized “W-beams”, and steel-backed timber guardrails. Alternatives to concrete barriers include the use of architectural finishes using form liners (such as those used on the Merritt Parkway and Baltimore Washington Parkway) or stone-faced barriers in use on other federal lands highways.

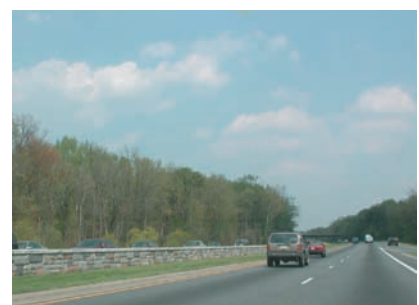
Examples shown are NCHRP 350 TL-3 compliant and may need to be modified for interstate applications.



MD 90 coated steel W-beam.



Merritt Parkway timber guardrail.



Baltimore-Washington Parkway median barrier.

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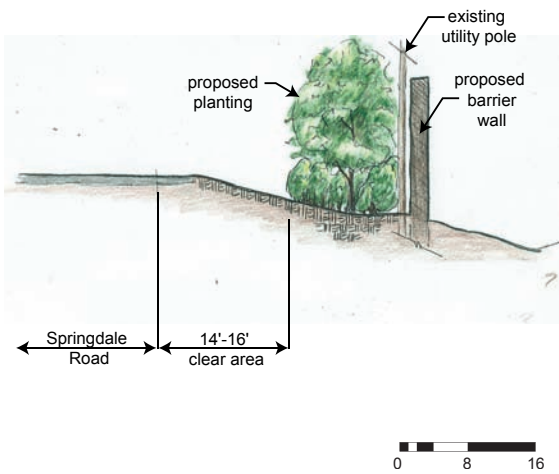
Section 4 East End Approach

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View from Springdale Road



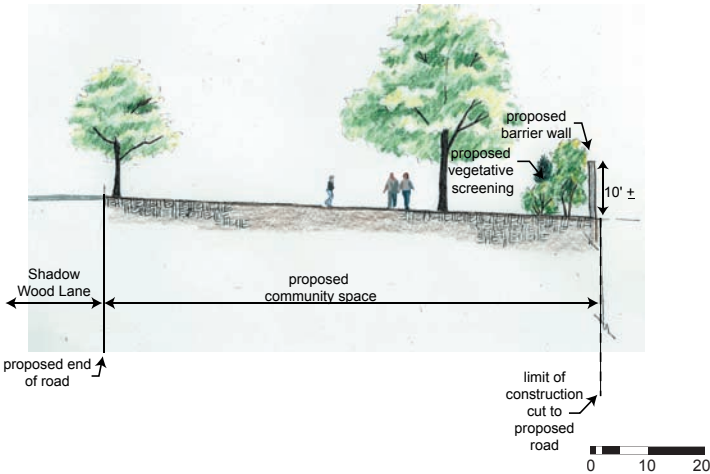
A: Freestanding Sound Barrier w/ Landscape



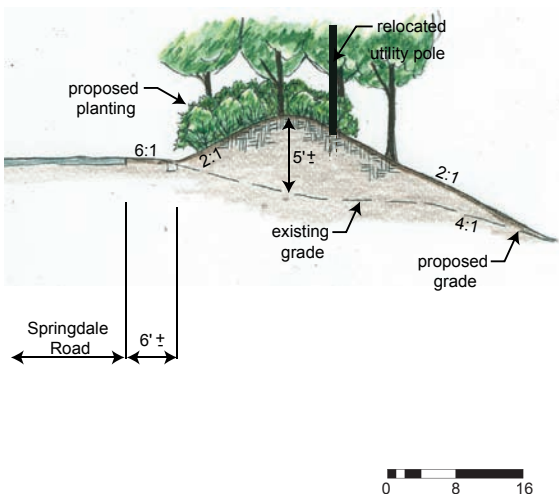
View from Shadow Wood Lane



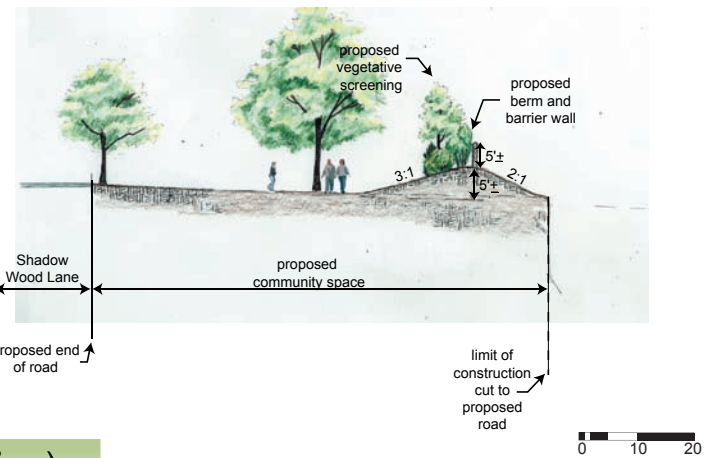
A: Freestanding Sound Barrier w/ Landscape



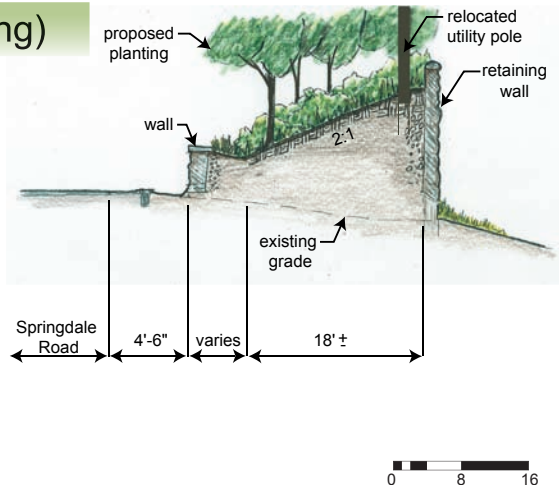
B: Landscape Treatment w/ no Sound Barrier



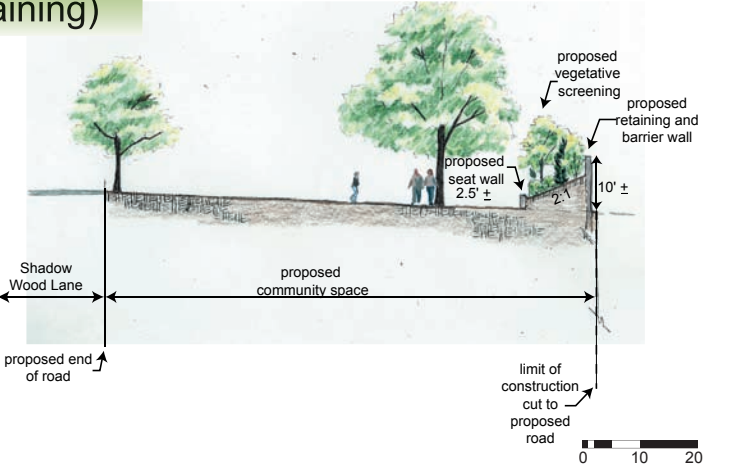
B: Landscape Treatment w/ no Sound Barrier



C: Roadside Barrier, Berm, Sound Barrier (retaining)



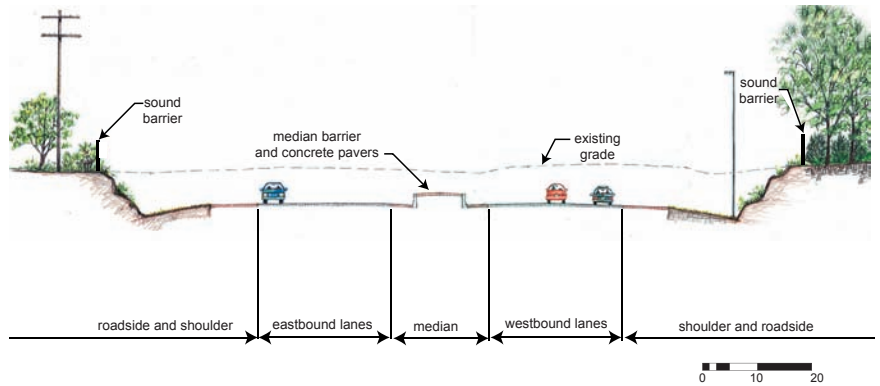
C: Roadside Barrier, Berm, Sound Barrier (retaining)



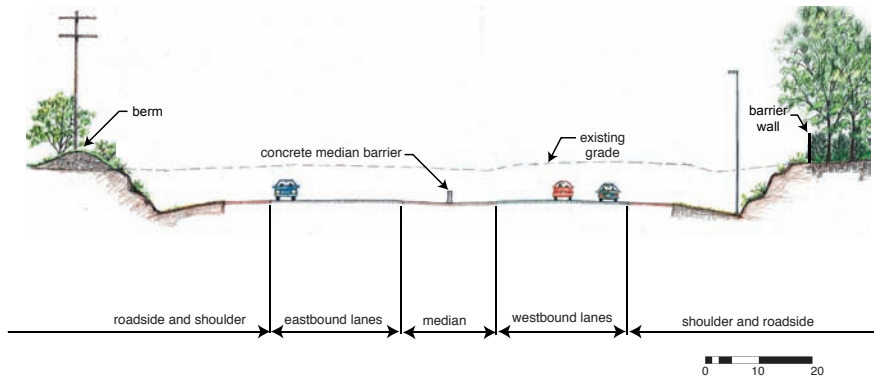
View from Roadway (at beginning of cut)



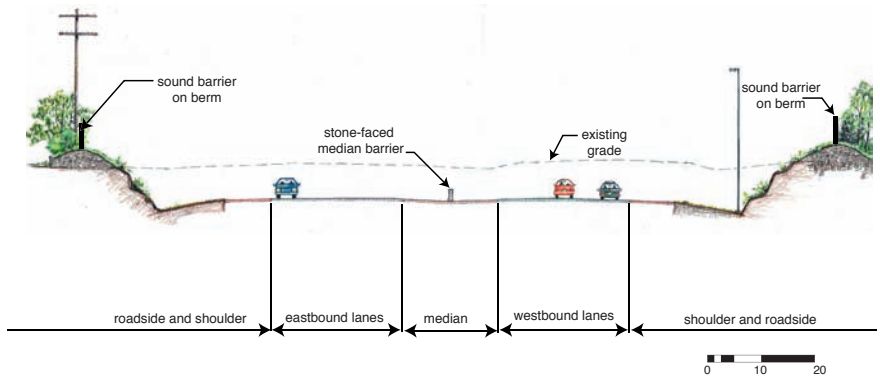
A: Freestanding Sound Barrier w/ Landscape



B: Landscape Treatment w/ no Sound Barrier



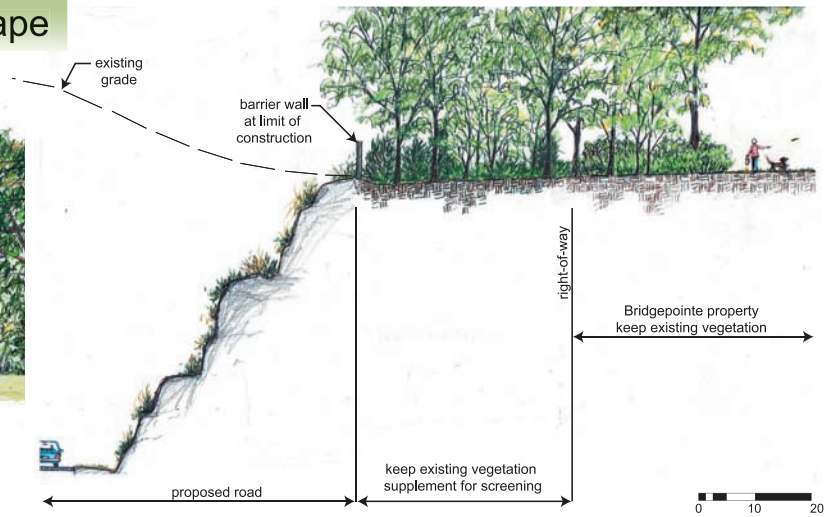
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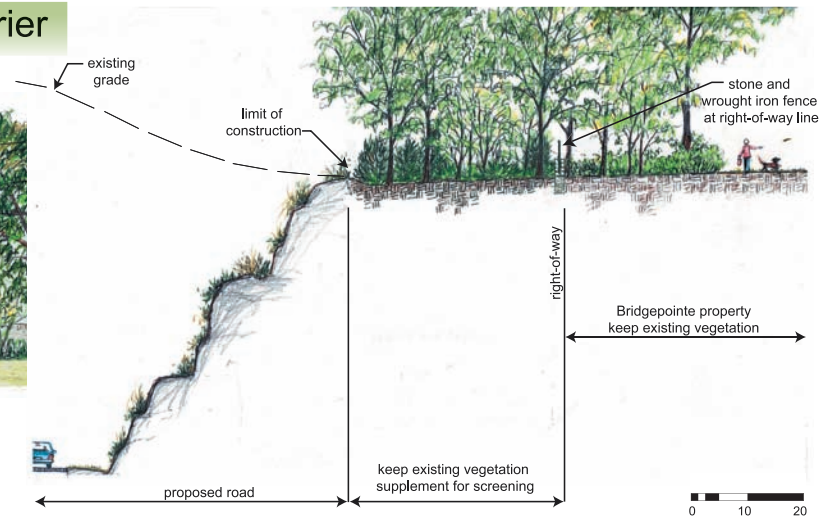
View from Bridgepointe Community Center



A: Freestanding Sound Barrier w/ Landscape



B: Landscape Treatment w/ no Sound Barrier



C: Roadside Barrier, Berm, Sound Barrier (retaining)

