

Research Need for Operations and Maintenance Technical Advisory Group

Posted: 8/15/2025

1. Issue Identified:

Identifying Alternative Unprepared Surface Designs for Crosswalk Crossing Prohibition

2. Summary of Problem:

When an area adjacent to a pedestrian crosswalk or sidewalk should not be used, features to alert people with visual deficiencies are required. The US Access Board indicated the best practice is to cement 3- to 5-inch stones into an area between the sidewalk and curb to be presented as a “non-prepared surface” according to PROWAG (Public Right-of-Way Accessibility Guidelines). Illinois Department of Transportation has concerns that the rocks will dislodge with freeze-thaw and become a loose object hazard or that they could become a tripping hazard adjacent to the roadway. There is research needed to develop an alternative, such as a vertical-differentially-detectable stamped concrete surface, tactile warning surface indicators or a cast iron unit that provides similar warning in practice for a visually impaired pedestrian. The approach chosen should present minimal hazard to both pedestrians and motorists, while being visually appealing, and require minimal maintenance.

IDOT has need to prohibit pedestrian crossings in certain cases such as when pedestrian crossings are consolidated into a single protected accommodation. In the case where a pedestrian circulation path is altered and a visually impaired individual needs guidance, accommodation is required. (See Exhibits A and B.)

PROWAG R203.6.1.1, Crosswalks at an Intersection, indicates “When pedestrian crossing is prohibited... the pedestrian circulation path shall be either (a) separated from the roadway with landscaping or other non-prepared surface or (b) separated from the roadway by a detectable vertical edge treatment.”

IDOT has examined these accommodations with the following conclusions:

1. Landscaping is unsustainable in some locations. The adjacent property owner will not accept maintenance, and we are unable to maintain or the space is too narrow to effectively plant landscaping that would not be damaged by salt or other treatments during winter and summer months.
2. A vertical edge treatment is a trip hazard by itself. It cannot be paired with a railing for placing a fixed object hazard in the clear zone or operational offset of a vehicle. US Access Board has informed IDOT that a supplemental 6” raised curb is not suitable or compliant as a vertical edge treatment.

3. The US Access Board indicated 3- to 5-inch rocks are acceptable as a non-prepared surface treatment to meet the requirement. IDOT has reservations, not wanting loose cobbles on the roadside where they may be purposely or inadvertently moved into the roadway or sidewalk. However, US Access Board did not accept a simulated rock surface because of a lack of research. Our current solution is to cement the rocks to prevent movement. However, we have freeze-thaw durability concerns. See Exhibits A and B for pictures. See Exhibits C and D for current D1 special provision and detail.

Therefore, we propose a research project to create a design that is acceptable to the US Access Board as an unprepared surface but reduces our maintenance liability. Research will consist of the following:

1. Review literature. This may be an initial nine-month stand-alone project to determine if other states or countries have solved this problem. Solutions used in the US would fall under the jurisdiction of the US Access Board, but there may be alternatives in other countries.
2. Propose designs for testing.
3. Test designs through a method proven to introduce new accommodations to the US Access Board. Coordinate for testing and tactile understanding with accessibility groups (e.g., Great Lakes ADA Center, University of Illinois Chicago's College of Applied Health Sciences, and/or Illinois-based visually disabled groups).
4. Create a draft IDOT standard, specification, and design guidance for the Technical Research Panel to implement.

3. Desired Results/Outcomes:

There is a need for a superior way to provide separation of a pedestrian circulation path from the roadway. IDOT will save in maintenance costs. Local agencies will be more likely to take maintenance of sidewalks with a lower maintenance treatment. Through the research project, researchers would work with the US Access Board to ensure they will consider the recommended solution(s). The solution(s) must be accepted by IDOT Operations for lower maintenance and liability.

Exhibit A – Pedestrian Route Closed with Current Unprepared Surface Treatment

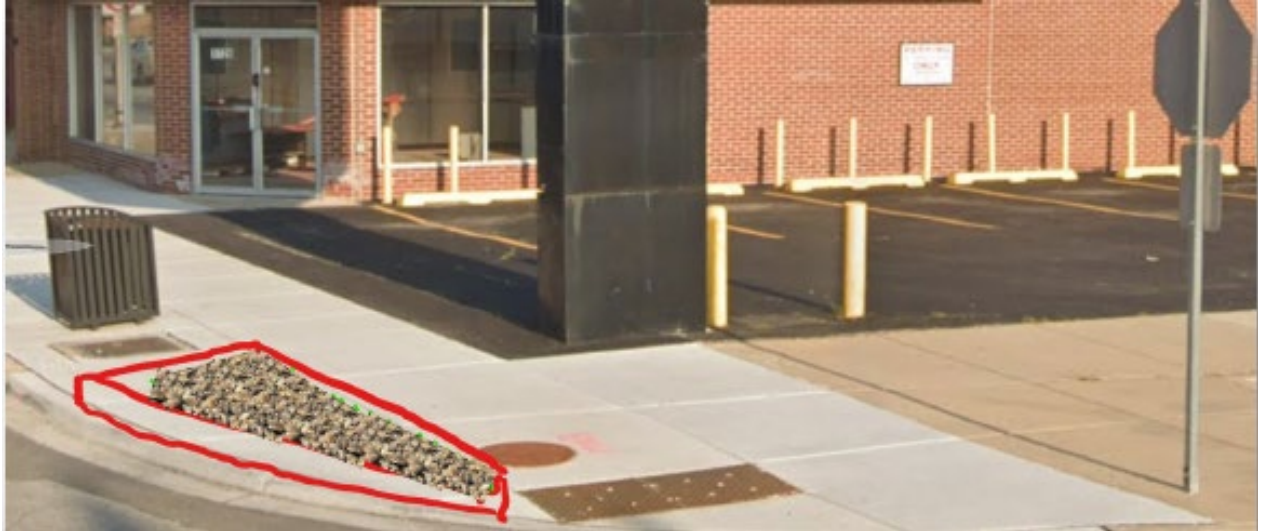


Exhibit B – Closeup of Current Unprepared Surface Treatment





Exhibit C – Current Special Provision for PCC Sidewalk 5 Inch (Special)

PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH (SPECIAL)

Description. This work shall consist of constructing portland cement concrete sidewalk with an exposed aggregate surface. Work shall be performed in accordance with Sections 424 and 1004 of the Standard Specifications and as specified herein. Work shall comply with requirements in PROWAG (Public Right-of-Way Accessibility Guidelines) R203.6.1.1.

Construction Requirements.

Width of sidewalk shall be a minimum of 1 foot or as directed by the Engineer.

Diameter of exposed aggregate shall be between 3 and 5 inches.

Exposed aggregate shall protrude a maximum of 0.5" above surface of sidewalk.

Method of Measurement. This work will be measured for payment in place in square feet.

Basis of Payment. This work will be paid for at the contract unit price per square foot for PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH (SPECIAL) which shall include all required expansion joints, special texturing, and variable height edge treatment at sidewalk ramps to install according to ADA specifications.

Exhibit D – Current D1 Detail for PCC Sidewalk 5 Inch (Special)

See Attachment

