

Embedded-type nut for Asphalt Road and the Replaceable Road Traffic Safety Facility

Problems with the existing Fixing System



Damage due to insufficient bond strength



Re-construction due to wedge Form damage



Damage due to insufficient fixing strength of the lower fixing plate



Damage due to concentration of tensile strength at the cross section area



Loss due to lack of tensile strength of the lower fixing plate



Damage to the body area

Problems with the existing Fixing System on the Asphalt road

Occurrence of frequent faulty works due to insufficient fixation during the initial construction work

Occurrence of frequent damages and losses due to insufficient embedding depth and bond strength of the fixing bolts

Increased damage on the road surface due to the Secondary erosion at the damaged area of the wedge form

Increased repairing cost due to outsourcing maintenance by the specialized contractors

Necessity for a Development Product

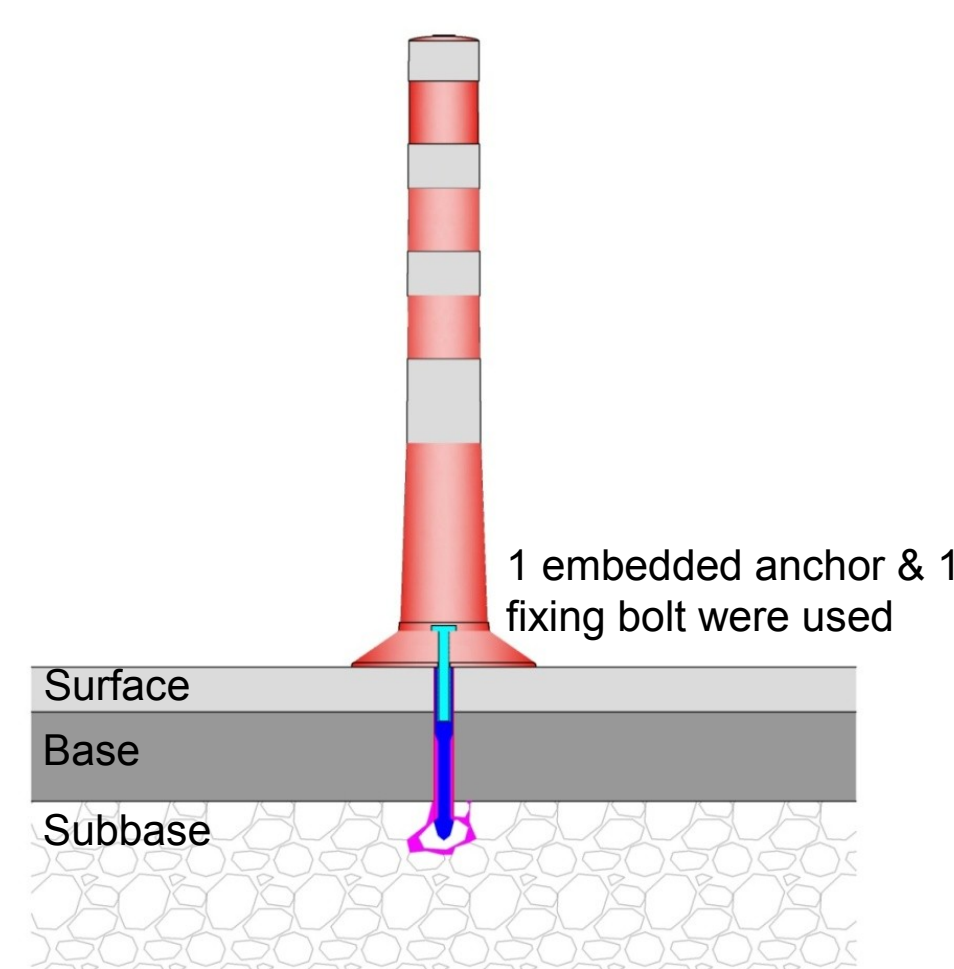
Anchor System for Asphalt has insufficient structural performance both at home and abroad

It was necessary to develop a fixing system with outstanding workability, economic feasibility and durability

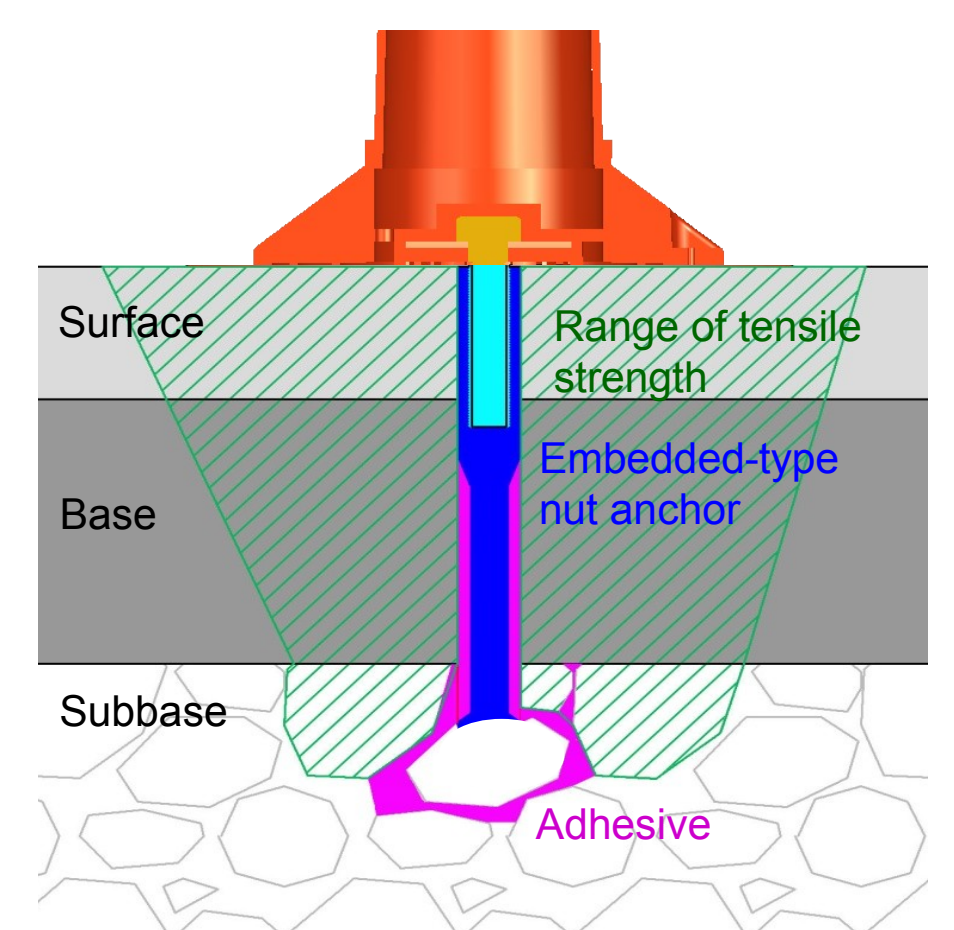
Fixing system on the Asphalt road displaying sufficient bond strength at the time of initial construction is required

Fixing system on the Asphalt road with low maintenance cost is required

Comparison with the existing Product



Newly Developed Traffic Lane Guide



Tensile Strength transfer of the New Product

Comparison with the existing Fixing System

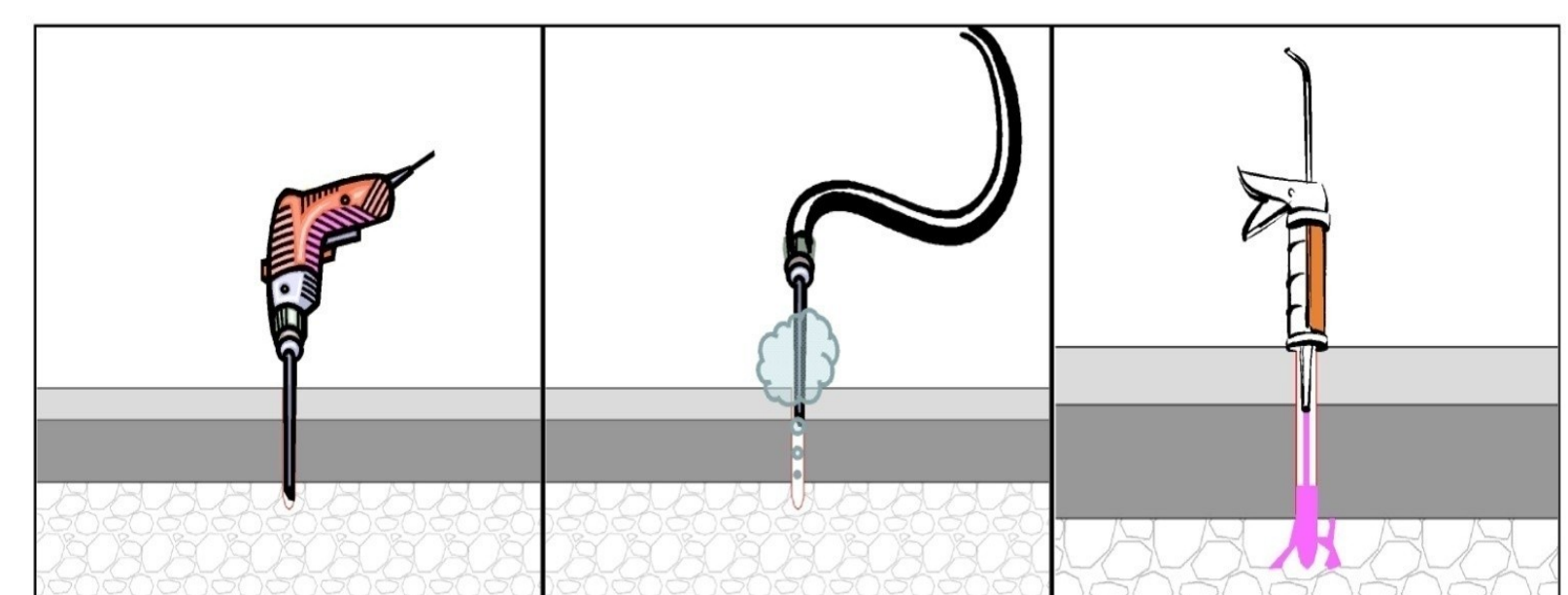
Displays high fixing strength due to sufficient embedded depth

Anchor holes can be reduced due to reduced number of embedded anchors and workability can be improved due to reduced marking work

Construction cost and time can be reduced by reusing of the embedded nuts during maintenance

Reduction of manpower cost and expenses due to improved workability

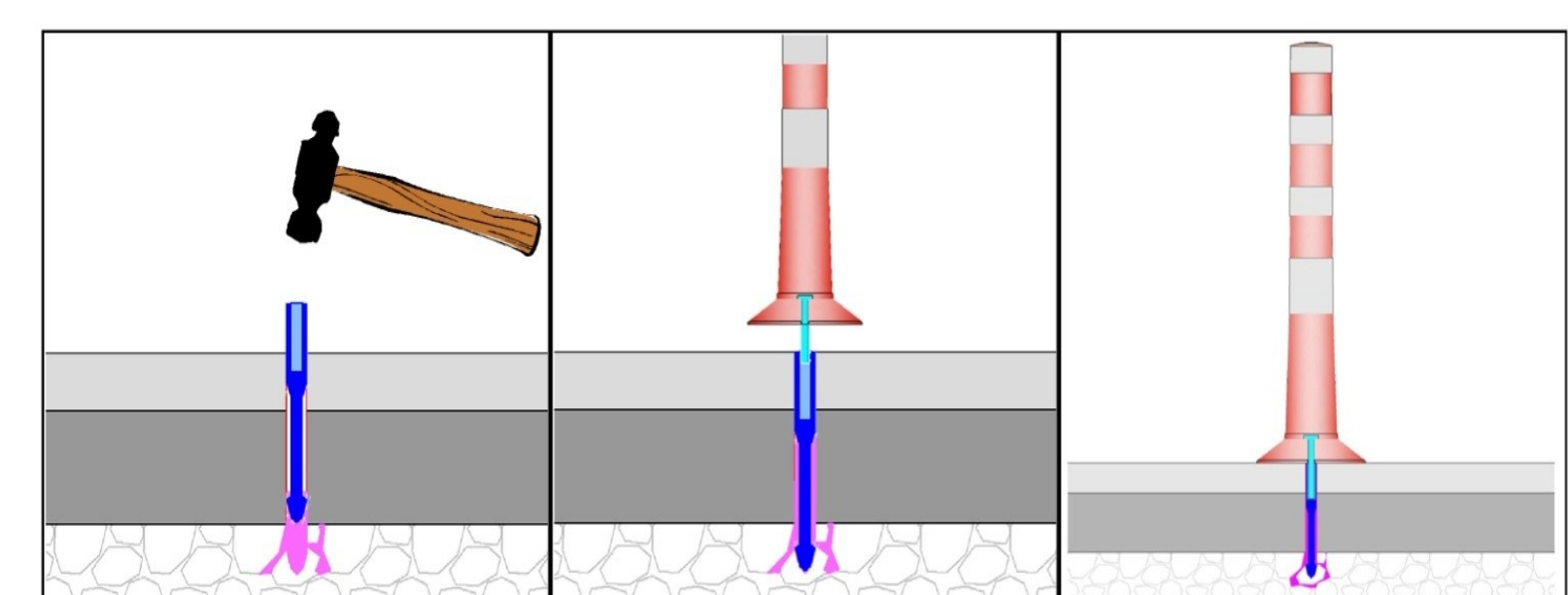
Example of construction Process



1. Drilling of the fixing part

2. Removal of dusts from drilled area

3. Filling-in with adhesive



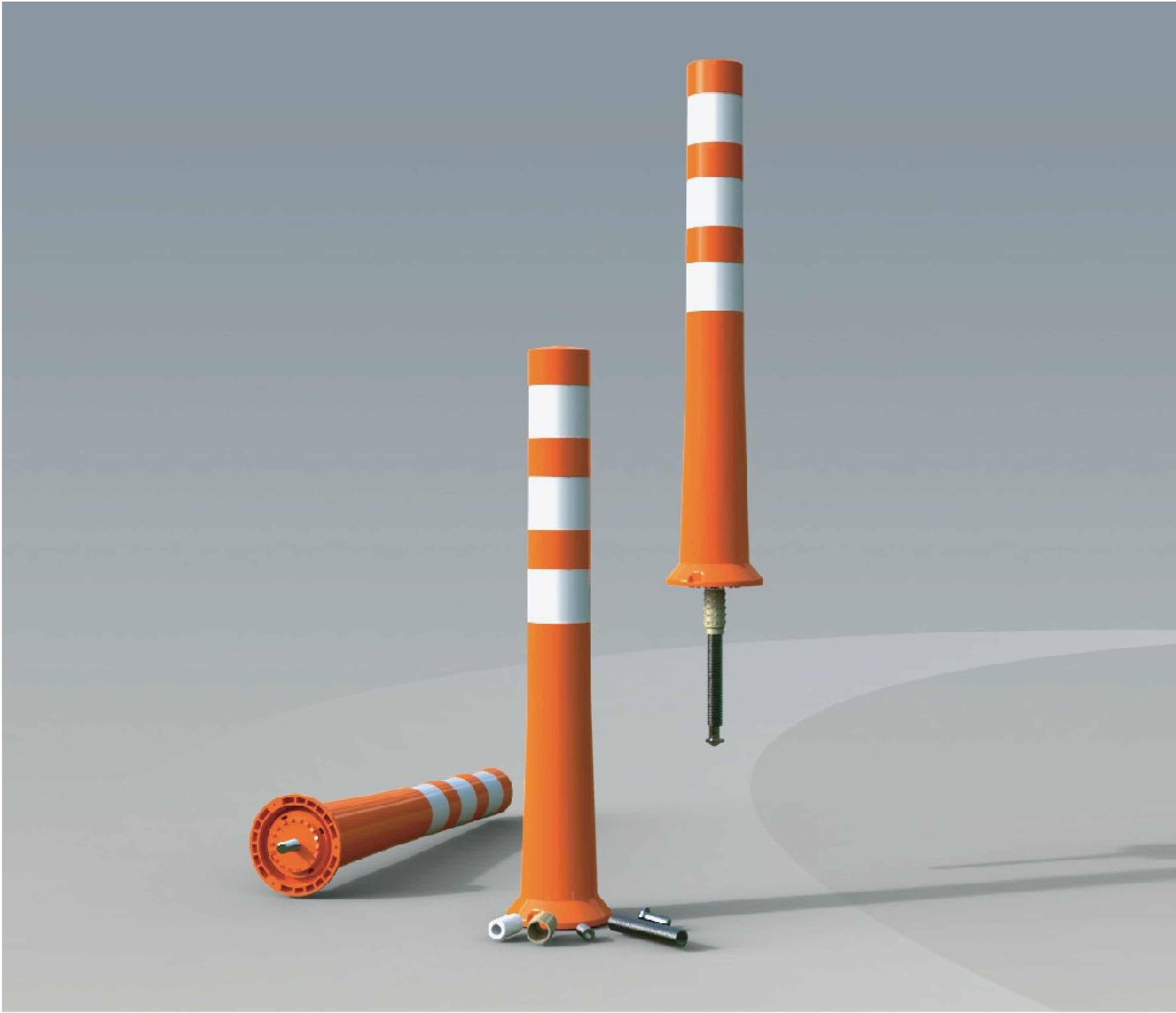
4. Fixing of the nut anchor

5. Installation of the Traffic Lane Guide

6. Finish

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Conceptual Diagram of the Developed System



Outstanding Fixing Strength

Displays sufficient **Tensile Strength** by integrating the bolt for connection and the embedded-type nut, ensuring the traffic lane guides with outstanding **Durability**

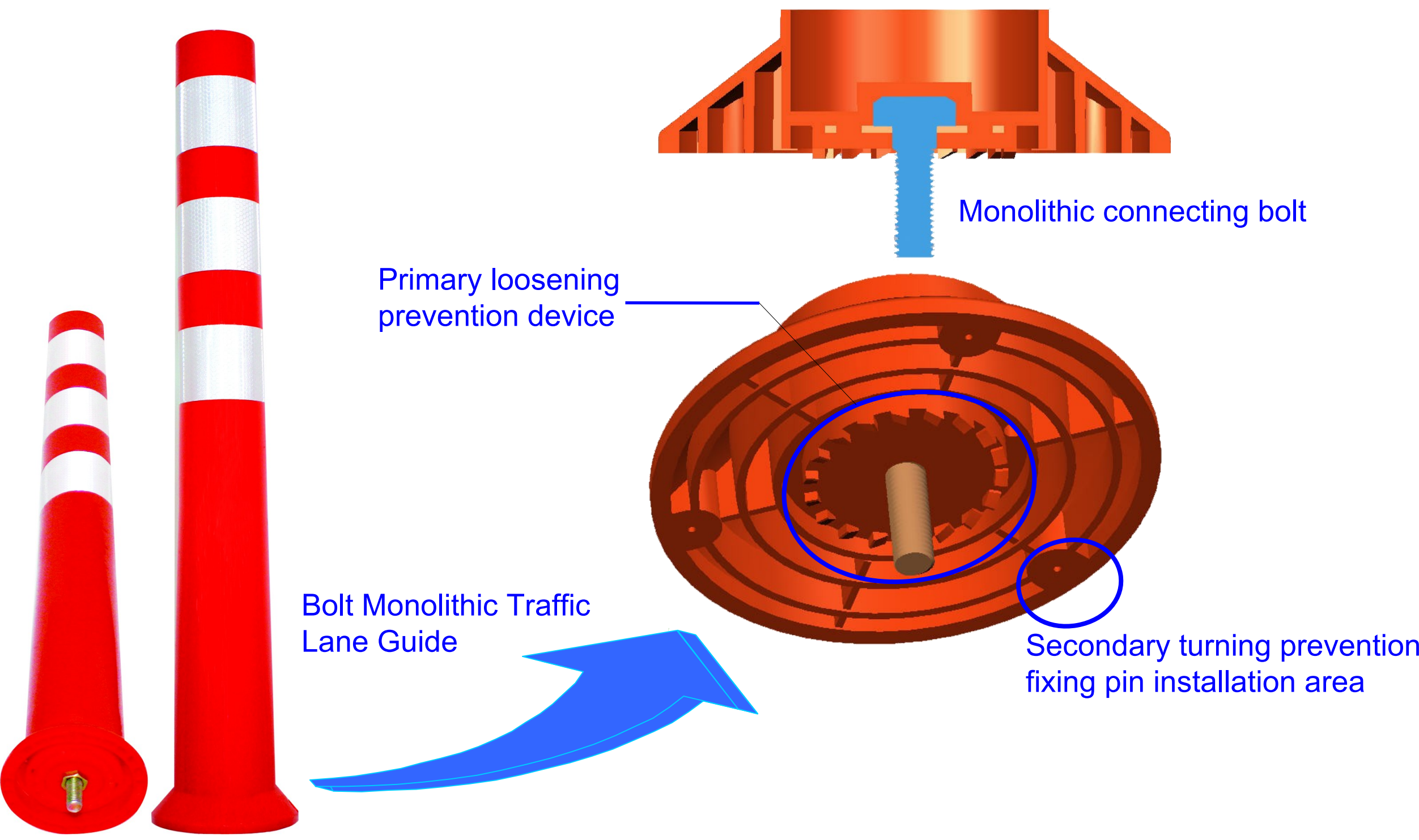
Easy Maintenance

Fixing and Breakup to the embedded-type nut anchor is **Easy** because of the monolithic joining bolt

Reduced Construction Cost

Reduced Maintenance Cost because replacement can be done by simply connecting the bolts to the embedded-type nuts, even though you are **Not A Specialized Contractor**

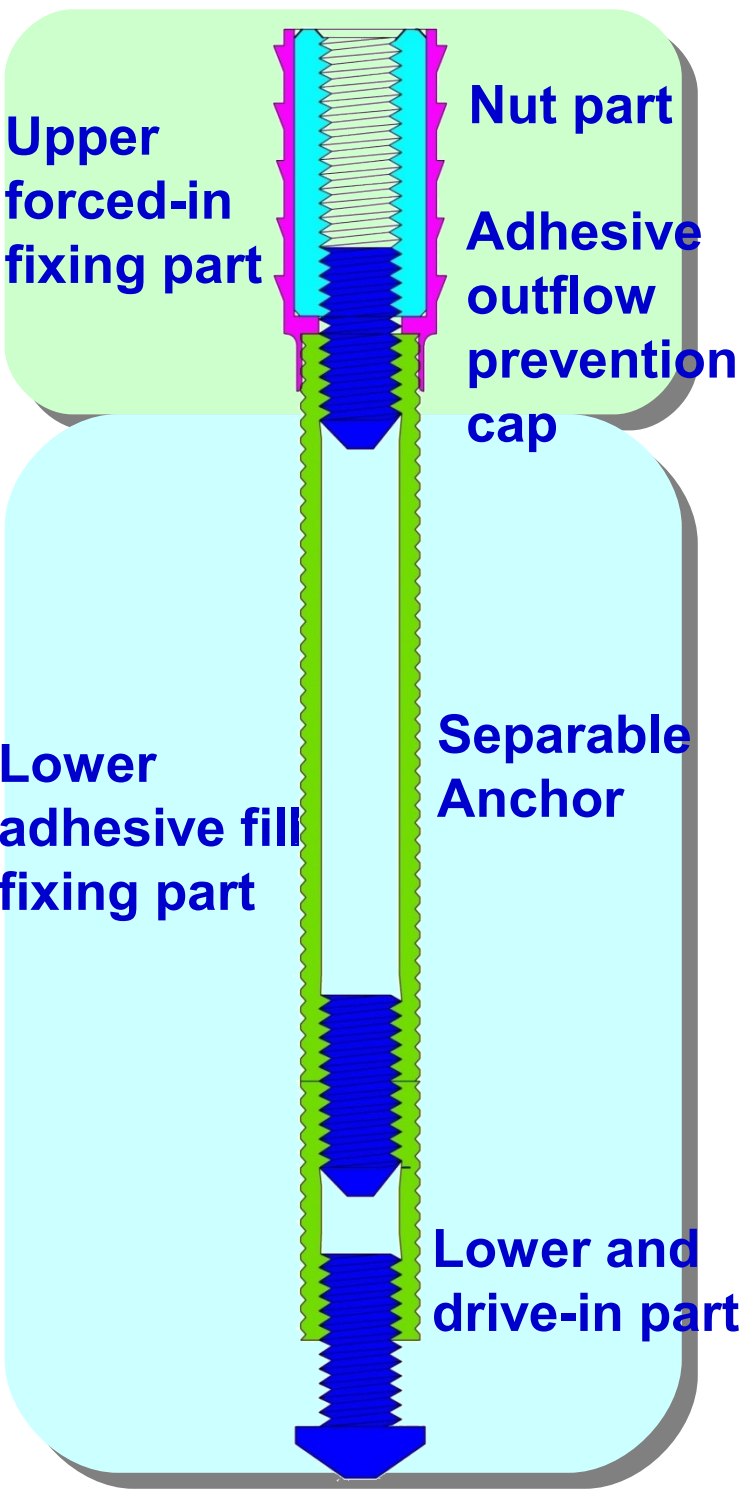
Details of lower part of the Traffic Lane Guide



Spec. of Anchors according to the Road Pavement Types

			TYPE 1															
			TYPE 2															
			TYPE 3															
	<table><tr><th rowspan="2">Classification</th><th rowspan="2">Usage</th><th colspan="2">Size (mm)</th></tr><tr><th>External Diameter</th><th>Length</th></tr><tr><td>TYPE 1</td><td>For 200mm Asphalt Pavement</td><td rowspan="3">Bolt : M16 Drilling : Φ30</td><td>260</td></tr><tr><td>TYPE 2</td><td>For 150mm Asphalt Pavement</td><td>210</td></tr><tr><td>TYPE 3</td><td>For concrete pavement and installation of structures</td><td>125</td></tr></table>			Classification	Usage	Size (mm)		External Diameter	Length	TYPE 1	For 200mm Asphalt Pavement	Bolt : M16 Drilling : Φ30	260	TYPE 2	For 150mm Asphalt Pavement	210	TYPE 3	For concrete pavement and installation of structures
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Embedded-Type Nut Anchor



Displays sufficient fixing strength by the upper friction-fixing part as soon as installation

Displays additional fixing strength by the filling part of adhesive

Able to use semi-permanently due to sufficient embedded depth

Able to utilize to other road facilities aside from the Traffic Lane Guide

Workability can be improved compared with the existing system because only 1 anchor hole is required for 1 Traffic Lane Guide

Characteristic of the developed System

New construction

Displays sufficient fixing strength during the initial installation with embedded-type nut

Improves workability according to reduced anchor holes and marking work due to reduced number of the embedded anchor according to display of sufficient fixing strength

Reduces manpower cost expenses following improvement of workability

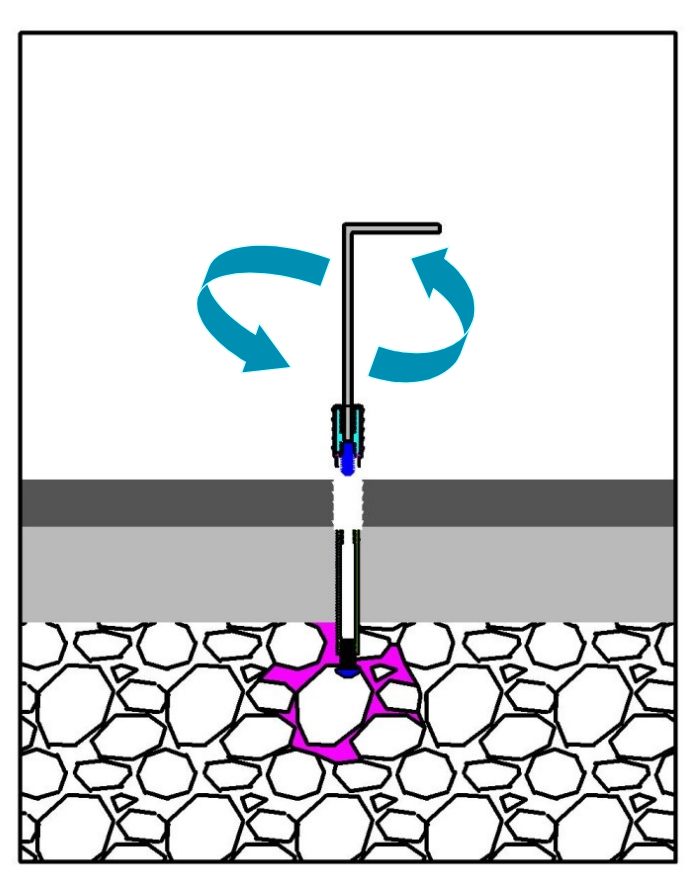
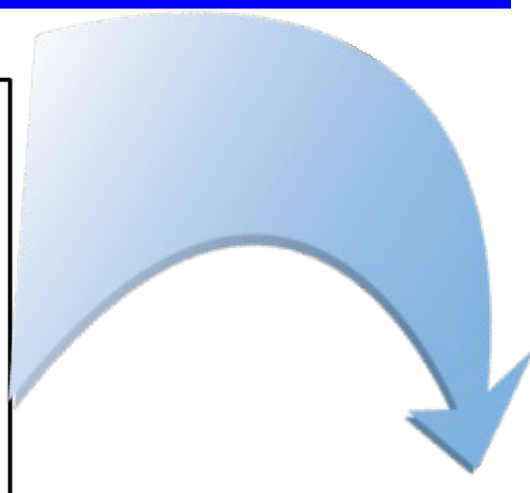
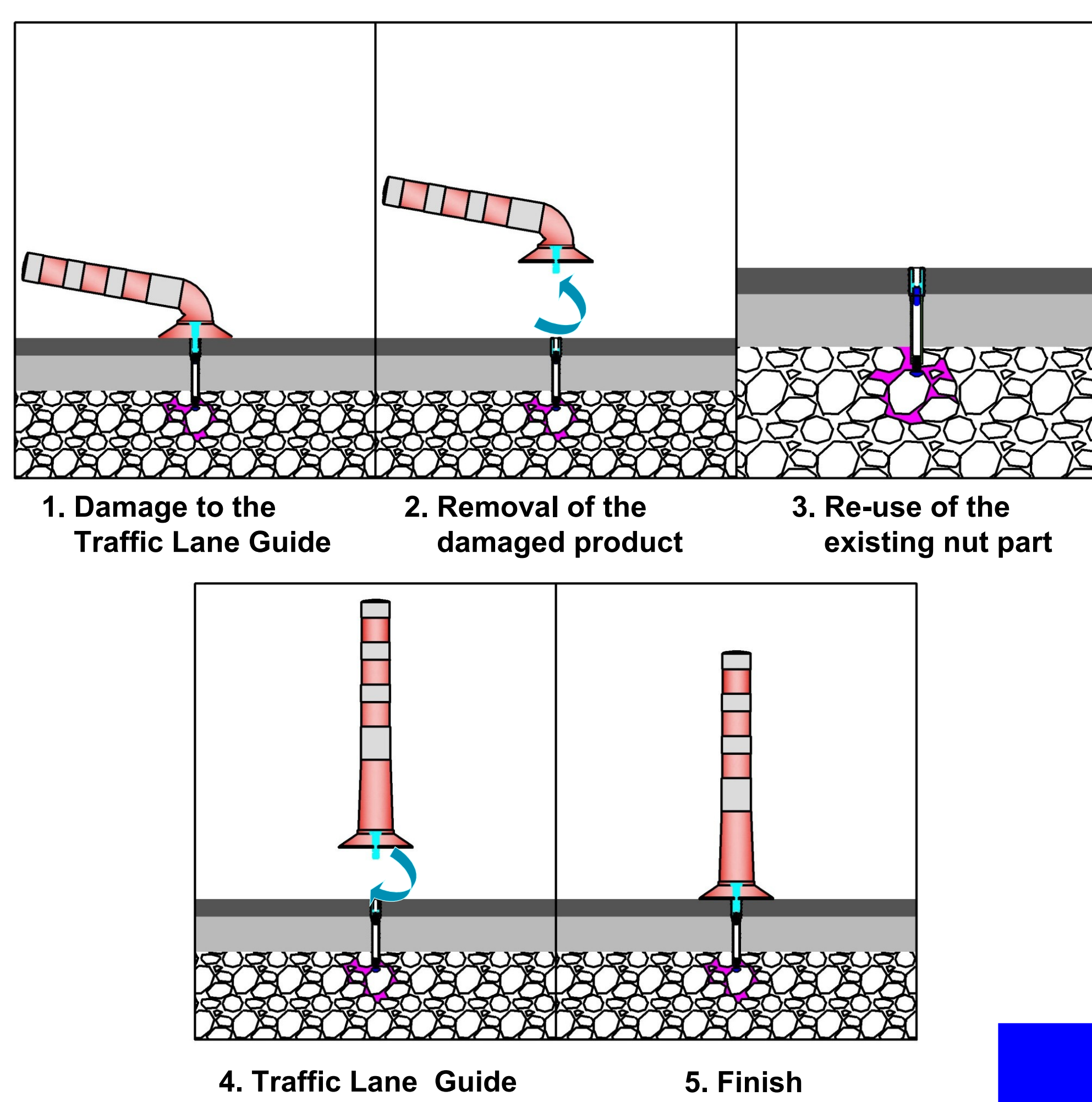
Maintenance

Saves construction cost and time by re-use of the embedded-type nuts

Maintenance / repair work can be done by the non-specialists aside from the specialized contractors

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Maintenance (1) – Repair work following damage of the facility



Securing variability of the road facilities utilizing the embedded-type nuts

Maintenance (2) – Repair following damage of the facility

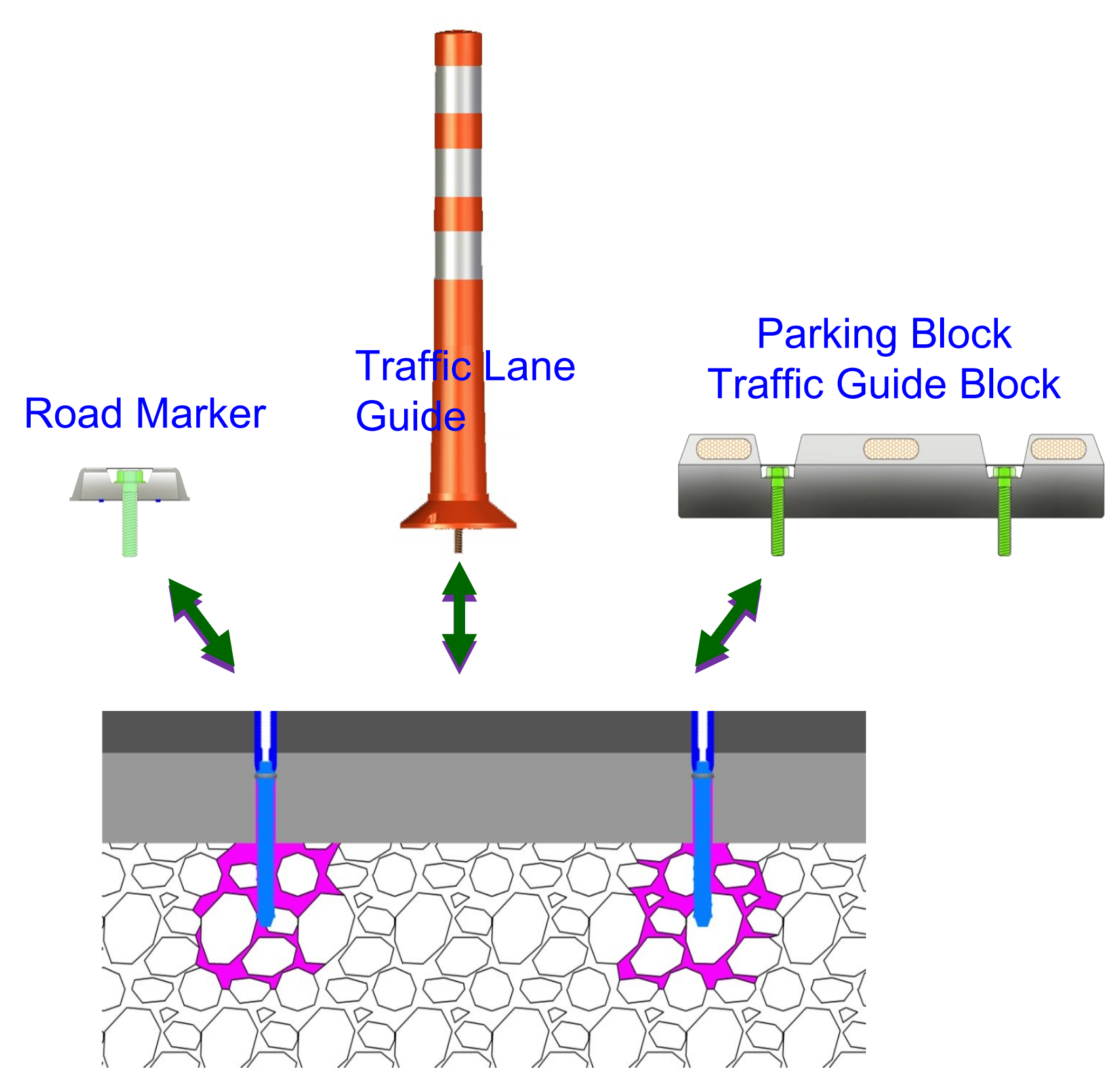
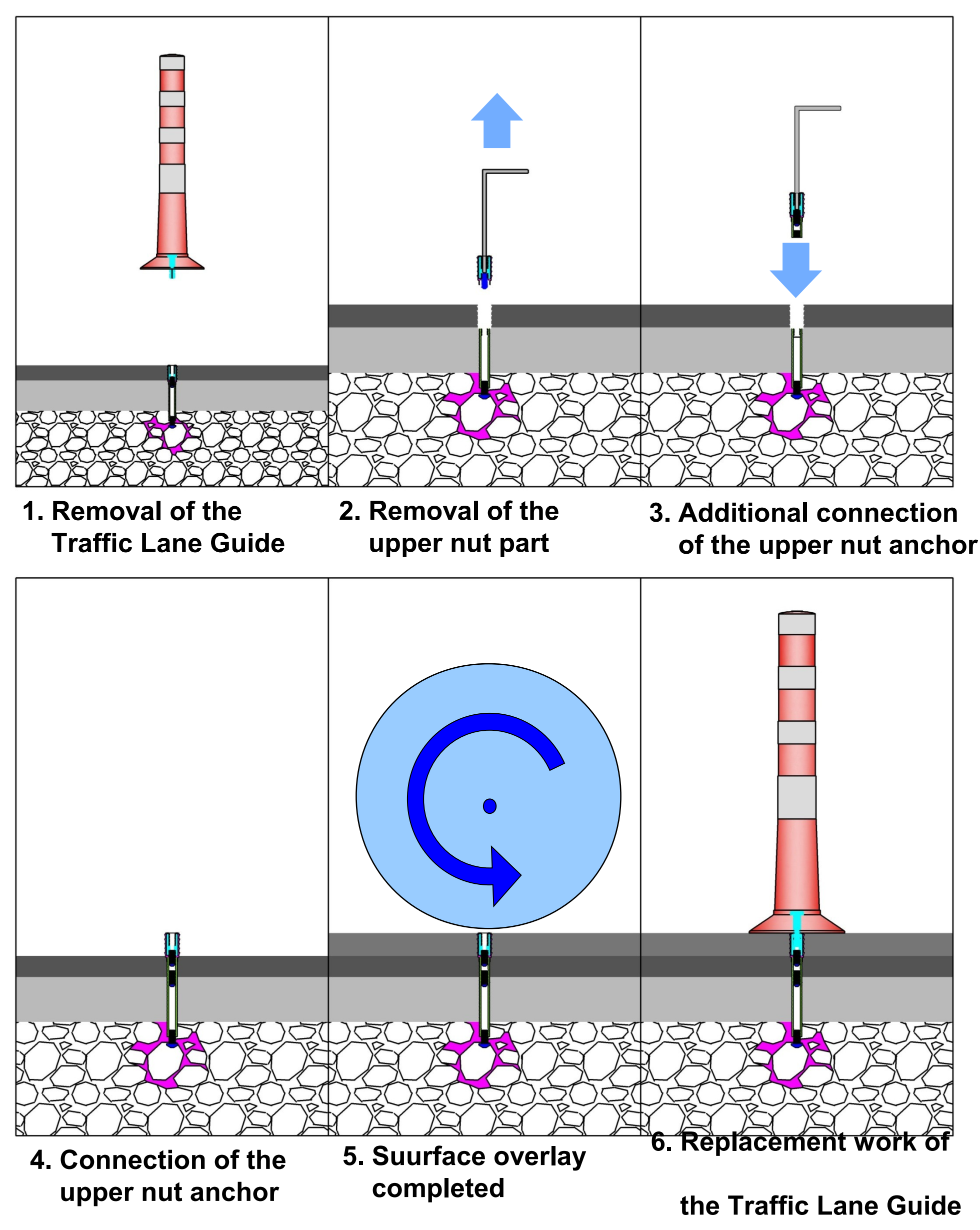


Image view after installation



Maintenance (3) – Removal of the nut anchor due to re-paving of the road

