

Rehabilitation of Bridge 3-146

Main Street (US 13 Business) over Bridgeville Branch

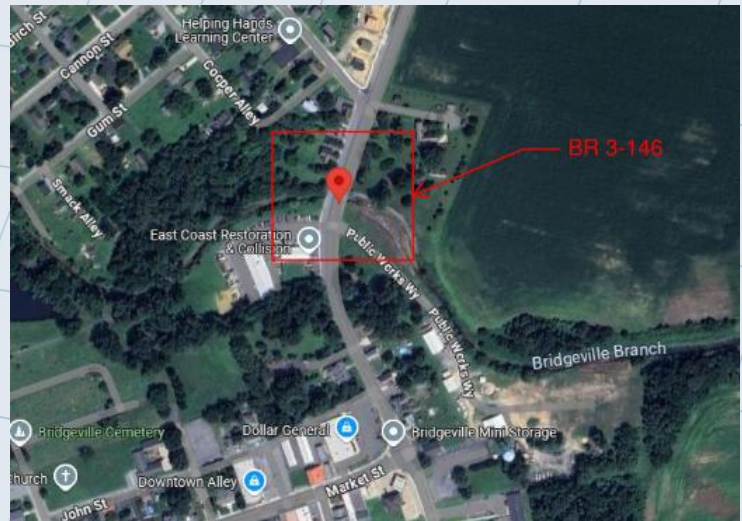
(DeDOT Contract T202407902)



Setting the Scene:

Bridge 3-146 is owned and maintained by DeDOT and lies in Bridgeville spanning the Bridgeville Branch. The existing structure consists of a culvert originally built in 1934. The culvert was extended in 1962 to carry two lanes of traffic along with shoulders.

BR 3-146 is 18 feet long and carries both directions of Main Street. This bridge carries an annual average of 4,354 vehicles per day, 7 percent of which are trucks.



Location of Bridge 3-146

Why is the bridge being worked on?

This culvert carries the water flow for the Bridgeville Branch towards the Nanticoke River to the east, covering a drainage basin of over 7 square miles. The water flow picks up sediments of various types and will etch into the concrete walls, creating abrasions on the surfaces of the interior culvert walls. Additionally, the water flow carrying sediments is striking the toe floor of the culvert and eroding the culvert itself. These erosive forces have exposed the culverts footers (known as scour) and cause a condition known as abrasion which is where the concrete and aggregate inside of it begin to wash away with the water flows.

The bridge substructure, the part of the bridge that carries the weight of the bridge and everything passing on the bridge, was rated as “Fair” condition. A “Fair” condition rating is defined by Federal standard as “all primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.” While the bridge is currently safe, unremedied scour and abrasion could destabilize the bridge’s foundation and force the Department to implement weight restrictions on the structure.



North elevation view of the culvert



Scour exposing the culvert footer. Note the deep abrasion in the culvert footer as shown by the ruler probing it.

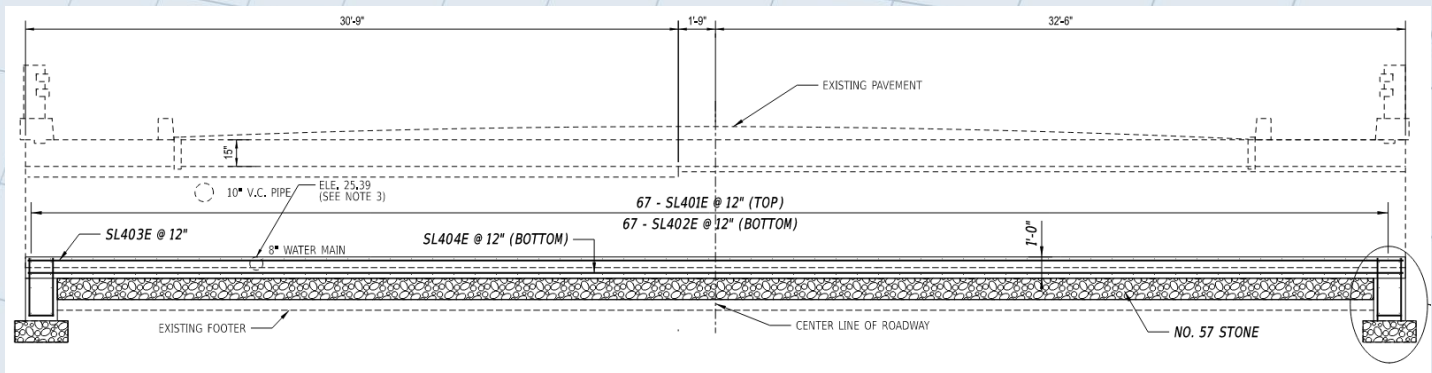
See reverse side for additional information

<https://www.deldot.gov/projects/>



What are the planned repairs for this bridge?

DeIDOT plans to extend the lifespan of this vital bridge by constructing a concrete floor through the culvert. The existing abrasion in the footer of the culvert will be encapsulated and protected by the new culvert floor. This floor will remediate the scour issue below the bridge and protect the structure against scour for years to come. New toe walls at each end of the floor will withstand the force of the water and sediments striking the face of the culvert. Lastly, the floor will secure a water main pipe that is currently partly buried in the culvert floor. By placing the reconstructed floor that embeds the water main, the water main will be protected from the effects of water erosion that could damage or rupture the water main itself.



Drawings of the planned repairs: installing steel reinforced floor to the culvert. Dashed lines indicate existing items. Solid lines identify new items.

How will this impact my travel along Main Street / US 13 Business?

This project will be conducted in the stream bed by installing a pump that will carry steam-diverted water through pipes mounted on the wall of the culvert itself. This will create a dry work area where concrete can be poured over the steel rebar reinforcements and allowed to cure to the needed strength.

There are no detours needed for the duration of this construction work. The shoulders for the bridge will be closed for most of the duration of the project. Occasional lane closures will be needed for the placement and removal of some equipment. The work duration is anticipated to be 6 weeks and will begin in the Summer/Fall of 2026.

Who can I contact with more questions, and how?

Any questions, comments or concerns should be directed to DeIDOT Community Relations at 302-760-2080 or you may contact us by e-mail at dotpublic@delaware.gov. Please include the project name or contract number when contacting us to expedite our response to any inquiry.