

## CASE STUDY

# RIVER ROAD EXPOSURE

Big Blue River in Indiana  
Submar Project 15048

**SUBMAR®**



**BEFORE**



**AFTER**

## EXISTING CONDITIONS

A 10-inch diameter natural gas pipeline crosses a tributary to Big Blue River in Indiana. A headcut -- an abrupt drop in the bed of the channel -- developed in a small drain that flows into Big Blue River and has exposed the pipeline for approximately 11 linear feet and left it suspended for approximately 12 linear feet. If left uncovered and unprotected, the pipeline risked further exposure and possible damage.

## SOLUTION

Submar armored the pipeline with a system of articulating concrete revetment mattresses, installed subgrade rock grade control and riprap, and placed erosion control blanket in order to protect the pipeline.

First, the project site was graded as necessary, with fill material covering the exposed section of the pipeline. A woven geotextile material was placed atop the grade, followed by the installation of the Submar mat system. The mats currently extend across the tributary from bank to bank. The edges of the mat system toe into excavated anchor trenches that are backfilled with either rock or onsite material.

On the downstream end of the mat system, a 3-foot deep by 10-foot long subgrade rock grade control was installed to prevent headcutting from progressing upstream, and riprap was placed on the banks to prevent erosion. Upon completion of the final grading, erosion control blanket was placed atop the grade.

**THE Exposed Pipeline Remediation Experts**

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