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Vegetation Barriers Around Headwalls of Edge Drains	*Click on link to open report.* Work Plan ☐ Construction ☐ Evaluation ☐ Final ☒	IM-2-094(016)240 8. Project No. IM-5-094(008)071 9. Project No. 10. Project No.

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14. Supplementary Notes

15. Abstract

Purpose and Need

The present practice to outlet drainage pipe is to place a 4" PVC outlet pipe approximately every 250 feet. This 4" PVC discharge pipe is capped with a headwall splash block, which often becomes blocked with debris to the point where it hinders the drainage system.

Objective

The objective of this experimental feature is to determine if constructing vegetation barriers around the headwalls of edge drain systems would help solve the problem of vegetation and debris from blocking the drain.

Scope

Construction of two types of head wall barriers on three projects across the state will provide performance data needed for a full evaluation. Three projects have been selected to receive the vegetation barriers. IM-8-029(025)053 Mile 58 to 59 , IM-2-094(016)240 Mile 243 to 244, and IM-5-094(008)071 Mile 76 to 77. The experimental feature will be evaluated and a report written annually with a final report after five years. The evaluation will include construction costs, construction problems, performance, advantages/disadvantages, and amount of vegetation and debris in each type of section.

Summary

The vegetation barriers were designed to include an 18-inch wide band of either aggregate or concrete around the headwall. Three projects were selected for the experimental barriers and each project will be briefly summarized. At this time, the concrete vegetation barriers are performing better than the aggregate vegetation barriers.

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The vegetation barriers look good after the fifth year of operation. Vegetation is growing out of the aggregate barriers in 20 out of 21. Some sediment is building up behind the screens in some headwalls. The biggest problem is the vegetation growing in the aggregate barriers. The vegetation growth in aggregate barriers covers 45 to 90 percent of the barrier. No mowing problems were encountered with the experimental vegetation barriers.

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With slow vegetation growth and heavy rains some soil has eroded from around a few drains. In many aggregate barriers, the aggregate is being move away from the headwall by passing mowers and other vehicles exposing the sides of the headwall. The vegetation growth in the aggregate barriers covers 15 to 80 percent of the barrier. Concrete barriers are performing excellent. Jamestown maintenance section reports no problems mowing over or around the barriers.

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All of the aggregate barriers have been switched over to concrete barriers due to safety concerns. Mowers could pick up rocks and cast them around. This could pose a hazard to the traveling public. Many of the barriers on this project are lower than the surrounding soil due to wet conditions at the time of construction, which did not allow equipment to landscape properly. The concrete barriers are aesthetically pleasing and are performing satisfactorily.

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