RESEARCH REPORT DOCUMENTATION PAGE

1. Report No.	2. Report Date	3. Contract No.	4. Project No.
ND 94-05	April 1997	N/A	IM-8-094(005)331

5. Title and Subtitle

Moisture Sensors in a Base and Subbase

6. Report Type

Click on link to open report

Work Plan ☐
Construction ☐
Evaluation ☒
Final ☐

7. Project No.

8. Project No.

9. Project No.

10. Project No.

11. Author(s)/Principle Investigator(s)

Jeff M. Richter

12. Performing Organization Name and Address

NDDOT M+R ☒
NDDOT OTHER* ☐
NDSU ☐
UND ☐
UGPTI ☐
OTHER* ☐
*see supplementary notes

North Dakota DOT
Materials and Research Division
300 Airport Road
Bismarck ND 58504-6005

13. Sponsoring Agency Name and Address

North Dakota DOT
Materials and Research Division
300 Airport Road
Bismarck ND 58504-6005

14. Supplementary Notes

15. Abstract

Purpose and Need

Historically, bases and subgrade that have high moisture contents reduce the overall life of the pavement structure leading to increased costs associated with increased maintenance. There is a need to determine if the moisture content in the base and subgrade can be reduced by using permeable base with edge drains.

Objective

The objective of this study is to determine the effectiveness of a permeable base in reducing the moisture levels in the base and subgrade.

Scope

The scope of this experimental project is to compare the moisture levels in the salvaged base beneath a permeable base, in a dense graded base, and in the subgrade. These sections are beneath a Portland Cement Concrete (PCC) pavement roadway surface. The project location is on Interstate 94 in the eastbound lane near Casselton, ND. The project will evaluate the moisture levels at the sensor locations. The project will be evaluate for a period of five-years on an annual basis.

Summary

These results are inconclusive at this time. It appears that at joint locations the drainable base is not effective or is only marginally effective in reducing the moisture content in the base material. It is however effective in reducing the moisture content of the subgrade at the joint locations.

The mid-panel locations appear to show that the dense graded base is more effective than the drainable base, however the moisture content in the subgrade shows the drainable base to be more effective**.**

The project was terminated due to a traffic accident which damaged one of the multiplexer enclosures.

16. Key Words

Base Subbase
Moisture Sensors
Permeable Base

17. Distribution Statement

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North Dakota Department of Transportation
Materials and Research Division:
300 Airport Road
Bismarck ND 58504-6005
Office: (701) 328-6900 Fax: (701) 328-0310

18. No. of Pages

29

19. File type/Size

Pdf / 1.0 MB