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| 5. Title and Subtitle Evaluation of Saw and Seal over the Overlaid Existing Concrete Joints | | 6. Report Type <i>Click on link to open report</i> Work Plan <input type="checkbox"/> Construction <input type="checkbox"/> Evaluation <input type="checkbox"/> Final <input checked="" type="checkbox"/> | 7. Project No. 8. Project No. 9. Project No. 10. Project No. |
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| 14. Supplementary Notes | | | |
| 15. Abstract <u>Purpose and Need</u> Asphalt overlays have a tendency to have reflective cracking on jointed concrete. These reflective cracks have to be repaired and maintained. Previous saw and seal test sections by others indicated that if good concrete exists with little cracking, the saw and seal joints will perform satisfactorily. Research on this method will be needed to determine if this methodology works. <u>Objective</u> The objective of this study is to evaluate what effect a sawed and sealed joint in asphalt has on controlling reflective cracking from an existing concrete joint. If effective, this method may be adopted by the North Dakota Department of Transportation (NDDOT) as an option to help solve the problem of reflective cracking. <u>Scope</u> The researched part of the project is located on Highway 2 reference point 227 and 228. In 1994 the NDDOT constructed a test section comprised of 54 sawed and sealed joints constructed over existing concrete joints. The sections were installed immediately after a four-inch hot bituminous asphalt pavement was applied over the surface of the existing concrete. The performance of the test section will be evaluated annually, by the NDDOT, for a period of five years. <u>Summary</u> The joints located in the saw and seal test section are in good condition. Approximately 59% of the joints are experiencing reflective cracking in the shoulders. Recent coring of the test section showed that controlled reflective cracking is occurring even where there is no indication of shoulder cracking present. Coring results also revealed early indications that the reflective cracking is converging with the overlying pre-sawed asphalt joints. A study lists the horizontal tolerance for pre-sawing joints in overlying asphalt pavement to be within plus or minus 1" from the underlying PCC joint. One sawed joint in the asphalt was 2" off horizontal from the underlying PCC joint but still the reflected crack converged with the sawed joint in the asphalt. There is no uncontrolled reflective transverse cracking occurring in the vicinity of the sawed and sealed joints. This study has shown that a sawed and sealed joint in an asphalt overlay over existing concrete can be effective in controlling reflective cracking. <u>Recommendations</u> The North Dakota Department of Transportation should consider using the saw and seal method when a jointed concrete pavement is overlaid with asphalt. The existing PCC must be in fair condition. The sealing will control the cracking and prevent water intrusion into the pavement section. This insures lower maintenance costs and provides a good riding pavement surface. | | | |
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