## **RESEARCH REPORT DOCUMENTATION PAGE**

MR 89-01       November 1999       NA       M-1-044(053)161         5 The and Sabilitie       C. Report Type       7. Monose Nov.         Evaluation of Epoxy-Resin Pavement Marking       C. Report Type       7. Monose Nov.         11. Autoroly Minoph Minoph Minoph Minoph Marking       Browshow       Report Type         12. Reforming Organization Name and Address       North Dakota DOT       Report Name and Address         NDDOT MER*       Materials and Research Division 300 Airport Road       North Dakota DOT         NDDOT THER*       Materials and Research Division 300 Airport Road       North Dakota DOT         NDBUT       Bismarck ND 58504-6005       Materials and Research Division 300 Airport Road       Bismarck ND 58504-6005         14. Supplementary Intext       Proceed Address       North Dakota DOT       Materials and Research Division 300 Airport Road         15. Advent       Materials and Research Division 300 Airport Road       Bismarck ND 58504-6005       North Dakota Department of Transportation needs a cost effective long-term pavement marking system that last longer than the available water based paints. <b>Delective</b> To compare the performance and cost-effectiveness of epoxy resin pavement marking material. <b>Scobe</b> In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-084(053)161, using material as described in Special Provision SP 70(97) dated July 17, 1998. The special provision ut	1. Report No.	2. Report Date	3. Contract No.		4. Project No.	
	MR 99-01	November 1999	N/A		IM-1-094(053)161	
Evaluation of Epoxy-Resin Pavement Marking       Like in the bage reput       In Project No.         Image: Construction in the bage reput       In Project No.       In Project No.         In Autoring/Principle Investigator(s) Torm Bold       In Project No.       In Project No.         In Autoring/Principle Investigator(s) Torm Bold       North Dakota DOT Materials and Research Division 300 Airport Road Bismarck ND 58504-6005       North Dakota DOT Materials and Research Division 300 Airport Road Bismarck ND 58504-6005         If Advanced       Bismarck ND 58504-6005       Distribution and Address         If Advanced       Devaluation of the pain system that lasts longer than the available water based paints.         Definition       Devaluation of the pain system that lasts longer than the available water based paints.         Definition       To compare the performance and cost-effectiveness of epoxy resin pavement marking material.         Scope       In order to achieve the objective, one test section was constructed in conjunction with Project IM-1094(053)161, using material as described in Special Provision SP 70(97) dated July 17, 1998. The special provision utilizes several different types of pavement marking systems. The types of marking material as described in special provision sP 70(97) dated July 17, 1998. The special provision utilizes avail afformation generalizes.         19. Out white pavement marking paint (median and outside edge lines and 1 mile of centerline).         19. Out white pavement marking paint (median and outside edge lines and 1 mile of centerline).      <	5. Title and Subtitle			6. Report Type	7. Project No.	
Work Plan	Evaluation of Epoxy-Resin Pavement Marking			Click on link to open report	8. Project No.	
Construction     C		5	Work Plan			
Valuation     Valuati					9. Project No.	
1 Autority/Principle Investigant(a)         1 Autority/Principle Investigant(a)         1 Autority/Principle Investigant(a)         12. Betoming Organization Name and Address         NDDOT THER       Anterials and Research Division 300 Airport Road         DBUT       Bismarck ND 58504-6005         URPT       Bismarck ND 58504-6005         URPT       Bismarck ND 58504-6005         OTHER       Bismarck ND 58504-6005         1 Autority/Prince       Bismarck ND 58504-6005         1 Autority       Bismarck ND 58504-6005         2 Autority       Bismarck ND 58504-6005         2 Autority       Bismarck ND 58504-6005         2 Autority       Bismarck ND 58504-6005					10. Project No.	
1.       Autorophysimologia investigatoris; Tom Bold         12.       Peterming Organization Name and Address         NDDOT OTHER*       Materials and Research Division 300 Airport Road Bismarck ND 58504-6005         UND       Bismarck ND 58504-6005         URPTI       Bismarck ND 58504-6005         14.       Septementary notes         14.       Septementary notes						
12.01 Evolution       Charlent Division         12. Performing Organization Name and Address       North Dakota DOT         NDDOT OTHER       Materials and Research Division         300 Airport Road       300 Airport Road         Bismarck ND 58504-6005       Bismarck ND 58504-6005         OTHER*       Bismarck ND 58504-6005         UGPTI       Bismarck ND 58504-6005         OTHER*       Bismarck ND 58504-6005         14. Supplementary notes       Bismarck ND 58504-6005         14. Supplementary Notes       To compare the performance and cost-effective long-term pavement marking system that lasts longer than the available water based paints.         Objective       To compare the performance and cost-effectiveness of epoxy resin pavement marking material.         Scope       In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in special Provision SP70(97) dated July 17.1098. The special provision utilizes everal different types of pavement marking systems. The types of marking materials applich (median and outside edge lines, ramps, and gore areas).         14. How white pavement marking sports on this test section area area was ablad overally pavement surface. The test section is located as follows:         15. Materials applice in the test section area outside edge lines, ramps, and gore areas).         2. Four in the white pavement marking sports on the list edge socion a listed as follow:         3. T	11. Author(s)/Principle Investigator(s)					
NDDOT W-R         North Dakota DOT Materials and Research Division 300 Airport Road Bismarck ND 58504-6005         North Dakota DOT Materials and Research Division 300 Airport Road Bismarck ND 58504-6005           14. Supplementary notes         14. Supplementary Notes	10M BOID         12. Performing Organization Name and Address         13. Sponsoring Agency Name and Address					
NDDOT OTHER*       Materials and Research Division 300 Airport Road Bismarck ND 58504-6005       North Dakota DOT Materials and Research Division 300 Airport Road Bismarck ND 58504-6005         UGPT I GTHER*       Bismarck ND 58504-6005       Bismarck ND 58504-6005         14. Supplementary notes       Image: Supplementary notes         15. Astract       Purpose and Need         Water based paint pavement markings deteriorate quickly and are commonly remarked annually. The North Dakota Department of Transportation needs a cost effective long-term pavement marking system that lasts longer than the available water based paints. <b>Disctive</b> To compare the performance and cost-effectiveness of epoxy resin pavement marking material. <b>Scone</b> Image: Supplementary longer based paint pavement marking system that lasts longer than the available water based paints.         Unoter to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97)404 July 171 988. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows:         I. Waterbane pavement marking pain: (median and outside edge lines, ramps, and gore areas).         2. Four inch white pavement marking pain: (median and outside edge lines, ramps, and gore areas).         3. Type II Long Term Pavement Marking, epoxy-resin - white and yellow (median and outside edge lines and 1 mile of conterline). The pavement marking pave esofthate costof application.		North Dakota DC	т			
NDSU       300 Airport Road       Materials and Research Division         UND       300 Airport Road       Bismarck ND 58504-6005         OTHER:       Bismarck ND 58504-6005         See supplementary notes       Bismarck ND 58504-6005         14. Supplementary notes       See supplementary notes		Materials and Re	search Division	North Dakota DOT		
UND       Bismarck ND 58504-6005       Bismarck ND 58504-6005         UGPTI       Bismarck ND 58504-6005       Bismarck ND 58504-6005         14. Supplementary notes       Image: State of the state of t	NDSU	300 Airport Road		Iviaterials and Research Division		
UGPT I	UND 🗌	Bismarck ND 58504-6005 300 Airport Road			504 600F	
OTHER*		BISMARCK ND 583			004-6005	
14. Supplementary Notes 15. Abstract Purpose and Need 15. Abstract Water based paint pavement markings deteriorate quickly and are commonly remarked annually. The North Dakota Department of Transportation needs a cost effective long-term pavement marking system that lasts longer than the available water based paints. Discrite To compare the performance and cost-effectiveness of epoxy resin pavement marking material. Scope In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test scottion are listed as follows: Four ind white pavement marking paint- (median and outside edge lines, ramps, and gore areas). Four ind white pavement marking paint- (median and outside edge lines. The types of marking meterials applied to an alw asphalt overlay pavement surface. The test section is located on the westbound lane of 1-94 between reference point 162.360 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The markings were also evaluated for relative cost of application. Summary As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes has occurred in the time since construction. This may be attributed to the loss of glass baads as noted during the observation. There has been an improvement in the Retroreflectivity tests on the corterline types, as predicted by the EPOPLEX representative. LS60 (yellow) epoxy system, however the LS60 (while) epoxy system, however the LS60 (while) epoxy system, however the LS60 velow peox system is outperforming the UC-3565 (yellow) waterborne system.						
<ul> <li>14. Supplementary Notes</li> <li>15. Abstract</li> <li>Purpose and Need</li> <li>Water based paint pavement markings deteriorate quickly and are commonly remarked annually. The North Dakota Department of Transportation needs a cost effective long-term pavement marking system that lasts longer than the available water based paints.</li> <li>Objective</li> <li>To compare the performance and cost-effectiveness of epoxy resin pavement marking material.</li> <li>Scone</li> <li>In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows: <ol> <li>For inclusion SP 70(79) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows: </li> <li>Four inclusion SP 70(79) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking patient (median and outside edge lines, ramps, and gore areas).</li> <li>Four inclusion was constructed on a new asphalt overlay pavement surface. The test section is located on the westbound lane of J-94 between reference point 162.360 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The markings were also evaluated for relative cost of application.</li> </ol> Summary As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes, as predicted by the EPOPLEX representative. Based on12m geometry Retroreflectivity tests, the UC-1511(white) waterborne system. In Retroreflectivity of the LS60 velow test stripes, as predicted by the EPOPLEX representative. Bas</li></ul>	see supplementary notes					
<ul> <li>15. Abstract</li> <li>Purpose and Need</li> <li>Water based paint pavement markings deteriorate quickly and are commonly remarked annually. The North Dakota Department of Transportation needs a cost effective long-term pavement marking system that lasts longer than the available water based paints.</li> <li>Objective</li> <li>To compare the performance and cost-effectiveness of epoxy resin pavement marking material.</li> <li>Scone</li> <li>In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows:</li> <li>Waterborne pavement marking paint (median and outside edge lines, ramps, and gore areas).</li> <li>Four ind white pavement Marking, epoxy-resin - white and yellow (median and outside edge lines. The types colon is located on the west contard on a new asphalt overlay pavement surface. The test section is located on a new asphalt overlay pavement surface. The test section is located on a new asphalt overlay pavement surface. The test section is located on the westbound lane of I-94 between reference point 162.360 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The markings were also evaluated for relative cost of application.</li> <li>Somment</li> <li>As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes has occurred in the test scolo splication. This may be attributed to the loss of glass beads as noted during the observation. There has been an improvement in the Retroreflectivity tests, the UC-1511(white) waterborne system.</li> <li>So (ellow) epoxy system is outperforming the IUC-3565 (yellow) waterborne system.</li> <li>Retroreflectivity tests on the centerline tape stri</li></ul>	14. Supplementary Notes					
16. Abstract     Purpose and Need     Support the sevene of the sevene sevene sevene of the sevene sevene of the sevene sevene of the sev						
<ul> <li>15. Asbrack</li> <li>Purpose and Need</li> <li>Water based paint pavement markings deteriorate quickly and are commonly remarked annually. The North Dakota Department of Transportation needs a cost effective long-term pavement marking system that lasts longer than the available water based paints.</li> <li><b>Objective</b> To compare the performance and cost-effectiveness of epoxy resin pavement marking material. <b>Scone</b> In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows: 1. Waterborne pavement marking tape (centerline). 3. Type II Long Term Pavement Marking, epoxy-resin - white and yellow (median and outside edge lines, ramps, and gore areas). 3. Type II Long Term Pavement Marking, epoxy-resin - white and yellow (median and outside edge lines and 1 mile of centerline). The pavement marking test section are use asphalt overlay pavement surface. The test section is located on the westbound lane of 1-94 between reference point 162.306 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The marking swere also evaluated for relative cost of application. <b>Summary</b> As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 (white) epoxy system, however the LS60 (yellow) epoxy system is outperforming the UC-3585 (yellow) waterborne system. 12m Retroreflectivity tests, on the centerline tape starping and LS60 epoxy striping indicate that the Retroreflectivity of the centerline tape is as much as you subjected to similar environmental and physical abuse.</li></ul>						
The provision SP 70(97) dated July 17, 1998. The special provision utilizes several different types of pavement marking system that lasts longer than the available water based paints. <b>Objective</b> In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17, 1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows:         1.       Waterbore pavement marking paint- (median and outside edge lines, ramps, and gore areas).         2.       Four inch white pavement marking paint- (median and outside edge lines, ramps, and gore areas).         3.       Type II Long Term Pavement Marking, epoy-resin - white and yellow (median and outside edge lines and 1 mile of centerline).         The pavement marking test section was constructed on a new asphalt overlay pavement surface. The test section is located on the westbound lane of I-94 between reference point 162.360 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The markings were also evaluated for relative cost of application. <b>Summary</b> As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 (white) epoxy system, however the LS60 (yellow) epoxy system is outperforming the UC-3685 (yellow) waterborne system.         U2m Retroreflectivity tests on the centerline tape striping and LS60 epoxy striping indicate that the Retroreflectivity of the centerline tape is as much as worting systems. Neither of thesees	15. Abstract					
<ul> <li>Water based paint pavement markings deteriorate quickly and are commonly remarked annually. The North Dakota Department of Transportation needs a cost effective long-term pavement marking system that lasts longer than the available water based paints.</li> <li><b>Disective</b> To compare the performance and cost-effectiveness of epoxy resin pavement marking material. <b>Second</b> In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows: 1. Waterborne pavement marking paint- (median and outside edge lines, ramps, and gore areas). 2. Four inch white pavement marking, epoxy-resin - white and yellow (median and outside edge lines and 1 mile of centerline). The pavement marking test section are asphalt overlay pavement surface. The test section is located on the westbound lane of 1-94 between reference point 162.360 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The markings were also evaluated for relative cost of application. <b>Summary</b> As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes has occurred in the use store of the LS60 yellow test stripes, as predicted by the EPOPLEX representative. Based on 2m geometry Retroreflectivity tests, the UC-1511(white) waterborne system is outperforming the LS60 (white) epoxy system, however the LS60 (yellow) exporting the US385 (yellow) waterborne system is outperforming the LS60 (white) epoxy system, however the LS60 (yellow) exporting the US385 (yellow) waterborne system is outperforming the construction of the centerline tape striping and LS60 epoxy striping indicate that the Retroref</li></ul>	Fulpose and Need					
<b>Objective</b> To compare the performance and cost-effectiveness of epoxy resin pavement marking material. <b>Social Social</b> In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows: 1. Vetorome pavement marking paint- (median and outside edge lines, ramps, and gore areas). 2. Four inch white pavement marking test (centerline). The pavement marking test section was constructed on a new asphalt overlay pavement surface. The test section is located on the westbound lane of 1-94 between reference point 162.360 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The sarkings were also evaluated for relative cost of application. <b>Summany</b> As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes has occurred in the section feture stripes, as predicted by the EPOPLEX representative. Based on12m geometry Retroreflectivity tests, the UC-1511 (white) waterborne system is outperforming the LS60 (white) epoxy system, however the LS60 (pellow) epoxy system is outperforming the UC-3585 (yellow) waterborne system. Settines greater than that of the LS60 system. Neither of these marking systems was constructed as ground-in sections; therefore both will be subjected to similar environmental and physical abuse.	Water based paint pavement markings deteriorate quickly and are commonly remarked annually. The North Dakota Department of Transportation needs a cost effective long-term pavement marking system that lasts longer than the available water based paints.					
To compare the performance and cost-effectiveness of epoxy resin pavement marking material.  Scope  In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision tillizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows:	<u>Objective</u>					
<ul> <li>Scope</li> <li>In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows: <ol> <li>Waterborne pavement marking paint- (median and outside edge lines, ramps, and gore areas).</li> <li>Four inch white pavement marking tape (centerline).</li> <li>Type II Long Term Pavement Marking, epoxy-resin - white and yellow (median and outside edge lines and 1 mile of centerline).</li> <li>The pavement marking test section are constructed on a new asphalt overlay pavement surface. The test section is located on the westbound lane of I-94 between reference point 162.360 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The markings were also evaluated for relative cost of application.</li> </ol> </li> <li>Summary</li> <li>As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes has occurred in the time since construction. This may be attributed to the loss of glass beads as noted during the observation. There has been an improvement in the Section yeas on pays ystem is outperforming the UC-3585 (yellow) waterborne system is outperforming the LS60 (white) epoxy system, however the LS60 (yellow) epoxy system is outperforming the UC-3585 (yellow) waterborne system.</li> <li>Materborneflectivity of the LS60 system. Neither of these marking systems was constructed as ground-in sections; therefore both will be subjected to similar environmental and physical abuse.</li> </ul>	To compare the performance and cost-effectiveness of epoxy resin pavement marking material.					
<ul> <li>In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows: <ol> <li>Waterborne pavement marking paint- (median and outside edge lines, ramps, and gore areas).</li> <li>Four inch white pavement marking tape (centerline).</li> </ol> </li> <li>Type II Long Term Pavement Marking, epoxy-resin - white and yellow (median and outside edge lines and 1 mile of centerline). The pavement marking test section was constructed on a new asphalt overlay pavement surface. The test section is located on the westbound lane of I-94 between reference point 162.360 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The markings were also evaluated for relative cost of application.</li> </ul> Summary As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes has occurred in the time since construction. This may be attributed to the loss of glass beads as noted during the observation. There has been an improvement in the Retroreflectivity of the LS60 yellow test stripes, as predicted by the EPOPLEX representative. Based on12m geometry Retroreflectivity tests, the UC-1511(white) waterborne system. 12m Retroreflectivity tests on the centerline tape striping and LS60 epoxy striping indicate that the Retroreflectivity of the centerline tape is as much as two times greater than that of the LS60 system. Neither of these marking systems was constructed as ground-in sections; therefore both will be subjected to similar environmental and physical abuse.	Scope					
Summary As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes has occurred in the time since construction. This may be attributed to the loss of glass beads as noted during the observation. There has been an improvement in the Retroreflectivity of the LS60 yellow test stripes, as predicted by the EPOPLEX representative. Based on12m geometry Retroreflectivity tests, the UC-1511(white) waterborne system is outperforming the LS60 (white) epoxy system, however the LS60 (yellow) epoxy system is outperforming the UC-3585 (yellow) waterborne system. Tam Retroreflectivity tests on the centerline tape striping and LS60 epoxy striping indicate that the Retroreflectivity of the centerline tape is as much as two times greater than that of the LS60 system. Neither of these marking systems was constructed as ground-in sections; therefore both will be subjected to similar environmental and physical abuse.	In order to achieve the objective, one test section was constructed in conjunction with Project IM-1-094(053)161, using material as described in Special Provision SP 70(97) dated July 17,1998. The special provision utilizes several different types of pavement marking systems. The types of marking materials applied in this test section are listed as follows: 1. Waterborne pavement marking paint- (median and outside edge lines, ramps, and gore areas). 2. Four inch white pavement marking tape (centerline). 3. Type II Long Term Pavement Marking, epoxy-resin - white and yellow (median and outside edge lines and 1 mile of centerline). The pavement marking test section was constructed on a new asphalt overlay pavement surface. The test section is located on the westbound lane of I-94 between reference point 162.360 and 182.874. The markings were evaluated for appearance, resistance to wear, and retroreflectivity. The markings were also evaluated for relative cost of application.					
As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes has occurred in the time since construction. This may be attributed to the loss of glass beads as noted during the observation. There has been an improvement in the Retroreflectivity of the LS60 yellow test stripes, as predicted by the EPOPLEX representative. Based on12m geometry Retroreflectivity tests, the UC-1511(white) waterborne system is outperforming the LS60 (white) epoxy system, however the LS60 (yellow) epoxy system is outperforming the UC-3585 (yellow) waterborne system. 12m Retroreflectivity tests on the centerline tape striping and LS60 epoxy striping indicate that the Retroreflectivity of the centerline tape is as much as two times greater than that of the LS60 system. Neither of these marking systems was constructed as ground-in sections; therefore both will be subjected to similar environmental and physical abuse.	Summary					
As of this report, all of the paint systems are performing well, however a reduction in Retroreflectivity of the LS60 white test stripes has occurred in the time since construction. This may be attributed to the loss of glass beads as noted during the observation. There has been an improvement in the Retroreflectivity of the LS60 yellow test stripes, as predicted by the EPOPLEX representative. Based on12m geometry Retroreflectivity tests, the UC-1511(white) waterborne system is outperforming the LS60 (white) epoxy system, however the LS60 (yellow) epoxy system is outperforming the UC-3585 (yellow) waterborne system. 12m Retroreflectivity tests on the centerline tape striping and LS60 epoxy striping indicate that the Retroreflectivity of the centerline tape is as much as two times greater than that of the LS60 system. Neither of these marking systems was constructed as ground-in sections; therefore both will be subjected to similar environmental and physical abuse.						
	the time since construction. This may be attributed to the loss of glass beads as noted during the observation. There has been an improvement in the Retroreflectivity of the LS60 yellow test stripes, as predicted by the EPOPLEX representative. Based on12m geometry Retroreflectivity tests, the UC-1511(white) waterborne system is outperforming the LS60 (white) epoxy system, however the LS60 (yellow) epoxy system is outperforming the UC-3585 (yellow) waterborne system. 12m Retroreflectivity tests on the centerline tape striping and LS60 epoxy striping indicate that the Retroreflectivity of the centerline tape is as much as two times greater than that of the LS60 system. Neither of these marking systems was constructed as ground-in sections; therefore both will be subjected to similar environmental and physical abuse.					
Recommendations						
Since the EPOPLEX LS60 material failed to meet the specifications outlined in SP 70(97), it is recommended that further observation of this project be discontinued. The detailed information included in this report may be utilized for comparative purposes when evaluating future projects.						
16. Key Words 17. Distribution Statement 18. No. of Pages	16. Key Words	17. Distribution Statement			18. No. of Pages	
No restrictions. This document is available to the public from:		No restrictions. The	nis document is avail	able to the public from:	64	
North Dakota Department of Transportation		North Dakota Department of Transportation			is. The type/Size	
Materials and Research Division: Pdf / 2.2 MB		Materials and Research Division: Pdf / 2.2 MB			Pdf / 2.2 MB	
Bismarck ND 58504-6005		300 AIIPOIT KOAD Bismarck ND 58504-6005				
Office: (701) 328-6900 Fax: (701) 328-0310		Office: (701) 3	<u>28-6900</u> Fa	ax: (701) 328-0310		