

MICHIGAN DEPARTMENT OF TRANSPORTATION
CONSTRUCTION FIELD SERVICES
COMPLETE LIST OF RESEARCH REPORTS
April 2012

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1	Research Activities of Michigan State Highway Department	J. W. Kushing	07-01-40	N/A
2	Field Study of Joint Sealer	J. W. Kushing	10-10-40	36 G-4 (2)
3	Michigan Test Road	J. W. Kushing	11-01-40	39 B-11 (2) 39 F-7 (2)
4	Investigational Concrete Pavement in Michigan	J. W. Kushing	1-22-40	39 F-7 (2)
5	Design of Load Transfer Joints in Concrete Pavements	J. W. Kushing W. O. Fremont	11-22-40	39 F-1
6	Changes in Characteristics of Slow-curing Asphaltic Oils	E. A. Finney T. Wolczynski	11-25-40	36 C-1
7	Activities of Research Division	J. W. Kushing	01-22-41	N/A
8	Summary Michigan Test Road	E. A. Finney	01-22-41	N/A
9	Value of Concrete Spreader in Concrete Pavement Construction	J. W. Kushing	01-28-41	39 B-11 (2) 39 F-7 (2)
10	Pavement Joints and Their Functions	J. W. Kushing	01-29-41	39 F-1
11	Concrete Durability Studies	E. A. Finney	02-18-41	39 B-11
12	Construction of Michigan Test Road	J. W. Kushing	02-14-41	39 B-11 (2) 39 F-7 (2)
13	Natural Conditions Affecting Performance of Soils	J. W. Kushing	03-4-41	N/A
14	Fundamental Principles and Factors Embodied in the Michigan Test Road	J. W. Kushing	04-01-41	39 B-11 (2) 39 F-7 (2)
15	A Report on Manufactured Stone Sand and Its Use in Concrete Mixtures	E. A. Finney	05-15-41	39 B-11 (6)
16	Report on Claims Presented by W. L. Thon Company Contractor Michigan Test Road	C. Mansfield	05-16-41	39 F-7 (2)
17	Proposed Specifications for a Slow-Curing Liquid Asphalt	J.W. Kushing E. A. Finney	06-15-41	36 C-1
18	Construction and Subsequent Studies of Concrete Durability Project Michigan Test Road	J. W. Kushing	07-28-41	39 B-11 (2)
19	The Library-Laboratory Research	J. W. Kushing	08-15-41	N/A
20	Movie of Michigan Test Road Pictures and Script	E. A. Finney	08-26-41	39 B-11 (2) 39 F-7 (2)
21	The Michigan Test Road	J. W. Kushing E. A. Finney	09-30-41	39 B-11 (2) 39 F-7 (2)
22	Research Activities of Michigan State Highway Department	J.W. Kushing	11-14-41	N/A

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
23	General Observations on Concrete Scaling	J. W. Kushing	12-05-41	39 B-11 (2)
24	Comments on Concrete Scaling Studies	J. W. Kushing	12-10-41	N/A
25	Effect of Various Axle Loadings on Highway Pavements	W. C. Fremont	02-01-42	39 F-7 (7)
26	Selected Bibliography on Airport Construction for National Defense	W. M. Cardone	02-01-42	42 G-21 (1)
27	Flight Strips - Design and Construction	E. A. Finney	03-10-42	42 G-21 (2)
28	Summary of Research Projects	E. A. Finney	04-02-42	N/A
29	Agrifil as a Mineral Filler for Bituminous Mixtures	E. A. Finney	04-01-42	42
30	Construction of Experimental Soil-Cement Stabilization Road Surface, Stockbridge.	E. A. Finney T. H. Thornburn	04-01-42	36 E-5 (2)
31	Curing of Concrete by Calcium Chloride Integral Mixed	E. A. Finney	04-01-42	39 B-11 (2) E
32	Grayling Cement and Bituminous Soil Stabilization Projects	E. A. Finney S. M. Cardone T. Wolczynski T. H. Thornburn	05-1-42	36 E-5 (1)
33	Progress Report on Membranous Curing Compound	E. A. Finney	05-15-42	42 B-14 (1)
34	Limestone Dust in Mortar	E. A. Finney	06-01-42	39 B-11 (1) D
35	Research Laboratory Report for Biennium 1940-1942	E. A. Finney	07-01-42	N/A
36	Progress Report on Cooperate Research Project Between Michigan State Highway Department and Michigan College of Mining and Technology, December, 1941-July, 1942	W. A. Karanen	07-19-42	39 B-11 (4)
37	Summary Activities of Research Laboratory Located at Michigan State College	E. A. Finney	08-01-42	N/A
38	Color Treatment of Concrete Pavements for Camouflage Purposes	E. A. Finney	07-07-42	38 B-10 (1)
39	Concrete Durability Study: Accelerated Scaling Studies on Concrete Pavement Surfaces	E. A. Finney	08-01-42	39 B-11
40	Progress Report on Reflectorized Sign Material Investigation	E. A. Finney	11-10-42	42 G-19 (1)
41	A Digest of the Michigan Test Road for American Concrete Institute	E. A. Finney	12-21-42	N/A
42	Discoloration Phenomenon in Beaded Reflectorized Highway Sign Materials	C. C. Rhodes	01-10-43	42 G-19 (2)
43	Research Activities, 1939 - 1943	E. A. Finney	05-01-43	N/A
44	Color in Concrete Pavements	E. A. Finney	05-18-43	42 B-10 (3)
45	Design of Concrete Resurfacing	E. A. Finney	05-21-43	43 F-8
46	Design Recommendations for Industrial Express Highway	E. O. Finney W. O. Fremont	06-25-43	43 F-9

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
47	Determination of Young's Modulus of Frozen and Thawed Concrete Specimens by Sonic Method	E. A. Finney C. C. Rhodes	08-03-43	39 B-11 (1) F
48	Michigan's Experiences in the Use of Air Entraining Materials for Concrete Pavement Construction	E. A. Finney	10-21-43	39 B-11 (7)
49	"Sealz" Joint Seal Study	E. A. Finney C. C. Rhodes	01-12-44	36 G-4(3)
50	Report on Condition Survey of Concrete Capping Projects in Michigan	E. A. Finney A. Matthews	03-10-44	44 F-10
51	The Research Laboratory	E. A. Finney	03-15-44	N/A
52	Compilation of Design and Construction Data for Concrete Pavements on the State Trunkline System	E. A. Finney	06-01-44	43 G-23
53	Para-Plastic Joint Sealing Compounds	E. A. Finney	06-02-44	36 G-4 (3)
54	Air-Entrained Concrete	E. A. Finney	06-08-44	39 B-11 (7)
55	Report on Research Laboratory	E. A. Finney	06-15-44	N/A
56	Study of Blowups on Bituminous-Capped Pavements	E. A. Finney	07-28-44	44 G-25
57	Study of Transit-Mixed Concrete in Relation to a Proposed Change in Batch Quantities on Construction Project 9-8, C3 Study No. 1	E. A. Finney	08-03-44	44 G-26
58	Study of Concrete Pavement Cracking on Project 49-7, C1	E. A. Finney	09-08-44	44 G-27
59	Preliminary Progress Report on Design Projects Michigan Test Road	E. A. Finney	10-02-44	39 F-7 (2)
60	Research Laboratory Report for Biennium 1942-1944	E. A. Finney	10-07-44	N/A
61	Microscopic Study of Scaled and Unscaled Concrete	E. A. Finney	11-01-44	39 B-11 (1B)
62	Recommendations for the Design of Concrete Pavement	E. A. Finney W.O. Fremont	11-20-44	39 F-7 (1)
63	Use of Vinsol Resin Cement in Concrete Bridge Structures	C. C. Rhodes	11-24-44	42 B-17
64	Pavement and Subgrade Moisture Michigan Test Road	C. C. Rhodes	12-05-44	39 F-7 (2K)
65	Hardening of Wood by Chemical Processes	C. C. Rhodes	12-09-44	44 G-24
66	Concerning Changes in Senate Bill No. 102 Relative to Motorbuses	E. A. Finney	02-21-45	39 F-7 (1)
67	Study of Subsoil Pressures Between Abutments At Grade Separation Structures, The Detroit Industrial Expressway Section 3	G. O. Kerhoff L. D. Childs	04-14-45	44 E-10
68	The Design of Concrete Pavements for Post War Construction	E. A. Finney	03-15-45	39 F-7 (1)
69	Determination of Benzene in Bituminous Materials	B. W. Pocock	04-01-45	36 C-1 (1)
70	Asphaltic Oil-Latex Joint-Sealing Compound	B. W. Pocock	04-02-45	36 G-4 (1)
71	Report on Research Laboratory, 1944-1945	E. A. Finney	07-10-45	N/A
72	A Model Study of Slab Action Concrete Pavements	L. D. Childs	07-16-45	44 F-11

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
73	Inspection of Concrete Pavements in the Province of Ontario, Canada	E. A. Finney	06-13-45	39 F-7 (6) C
74	The Application of Chloride Salts to Concrete Pavements for Ice Control	C. C. Rhodes	08-17-45	39 B-11 (5)
74A	The Application of Chloride Salts for Ice Control to Concrete Pavements Constructed Without the Use of Air-Entraining Agents	C. C. Rhodes	08-17-45	39 B-11 (5)
75	Factors to be Considered in the Use of Air-Entrained Concrete for Highway Construction	E. A. Finney C. C. Rhodes	09-14-45	39 B-11 (7)
76	Investigations of Anti-Freeze Preparations	B. W. Pocock	12-01-45	45 G-28
77	Investigations Kapco Membrane Curing Compounds	B. W. Pocock	12-01-45	45 G-28
78	The Muskegon Experimental Project after Seven Years in Service	E. A. Finney	12-10-45	36 B-2
79	Prevention of Scale on Concrete Pavement Surfaces by Air Entrainment	E. A. Finney	01-01-46	39 B-11 (7)
80	A Model Study of Slab Action in Concrete Pavements	L. D. Childs	01-08-46	44 F-11
81	Comments on Bituminous-Rubber Joint Sealing Compounds	B. W. Pocock	01-21-46	36 G-4 (6)
82	Condition Survey Grayling Soil Stabilization Experimental Project - 1946	S. M. Cardone	04-15-46	36 E-5 (1)
83	First Condition Survey of Hot-Poured Bituminous-Rubber Joint Seal Investigation on US-16, West of Lansing	E. A. Finney	05-15-46	36 G-4 (3) E
84	Investigation of Hinged Bar Mat	R. Fulton S. M. Cardone	06-03-46	46 G-32
85	Research Laboratory Report, 1945 - 1946	E. A. Finney	07-09-46	N/A
86	Investigation of Pen-Kote "500" Maintenance Paint	B. W. Pocock	07-23-46	46 G-31
87	The Preserving and Reconditioning of Concrete Bridges	C. C. Rhodes	09-30-46	45 B-18
88	Non-Skid Bituminous Surface Treatments Project M5-17, C2 and M89-5, C3	E. A. Finney	10-07-46	46 D-13 (4)
89	Cracked Versus Uncracked Asphaltic Materials	E. A. Finney C. C. Rhodes	10-16-46	36 C-1
89R	Cracked Versus Uncracked Asphaltic Materials	E. A. Finney C. C. Rhodes	10-16-46	36 C-1
90	A Study of Slab Action in Concrete Pavements	L. D. Childs	10-31-46	ENG. M-561 HDP. 44 F-11
91A	Investigation of Concrete Paving Forms	R. S. Fulton S. M. Cardone	04-4-47	46 G-30
92	Modern Highway Loadings in Relation to Pavements and Bridges	E. A. Finney	01-02-47	46 F-12
93	Gradation and Consolidation of Porous Backfill	R. Greenman	02-14-47	45 E-11 (2)
94	Resealing of Old Expansion Joints with Bituminous Rubber Compound In Relation to Highway Maintenance	B. W. Pocock W. Martin	03-14-47	36 G-4 (3)
95	Experience in the Use of Carbon Black as a Color Pigment in Concrete Pavement	C. C. Rhodes	03-19-47	43 B10 (2)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
96	Bituminous Fiber Board for Joints	E. A. Finney	05-02-47	47 G-34
97	Abnormal Cracking and Settlement of Pavement Slabs in the Willow Run and Detroit Industrial Expressway Systems	E. A. Finney	04-01-47	46 B-20
98	Compressed Wood for Expansion Joint Fillers	B. W. Pocock	05-28-47	36 G-4 (7) B
99	The Research Laboratory	E. A. Finney	07-15-47	N/A
100	Report on Research Laboratory, 1946 - 1947	E. A. Finney	07-01-47	N/A
101	"Sealz Melter" Heating Kettle for Rubber Joint Sealing Compound	E. A. Finney	09-03-47	36 G-4 (3) E
102	Liquid Chloride Application Study	E. A. Finney	09-17-47	47 G-37
103	Rubber Compound Heating Kettle, Chausse Model R-115	L. L. Peterson	09-18-47	36 G-4 (6)
104	Progress Report on Load Deflection Tests Dealing with Length and Size of Dowels	E. A. Finney W. O. Fremont	11-21-47	39 F-1 (1)
105	Cracking of Concrete Patches on Project 49-7, C1 US-2 North of St. Ignace	E. A. Finney	12-15-47	44 G-27
106	Progress Report on Study of Turf Growth on Soil Mixtures Available for Highway Shoulder Construction in Michigan	E. A. Finney J. Tyson	12-24-47	42 E-9
107	Consolidation of Porous Backfill	R. Greenman	01-23-48	45 E-11 (2)
108	Detroit Manufactured Brick for Catch Basins and Manholes	E. A. Finney	03-01-48	47 G-39
109	The Use and Treatment of Granular Backfill	R. Greenman	03-03-48	45 E-11 (2)
110	Deterioration and Restoration of Concrete Bridges on the State Trunkline System	E. A. Finney C. C. Rhodes	09-25-48	45 B-18 Report No. 2
111	Study of New American Decalcomania Reflective Material	C. C. Rhodes L. L. Peterson	03-26-48	42 G-19 (4)
112	More Durable Concrete by Air Entrainment	E. A. Finney	04-30-48	39 B-11 (7)
113	A Study of Fabrics for Membrane and Joint Waterproofing	L. L. Peterson	06-01-48	47 G-35
114	Effect of Foreign Material on Quality of Concrete on Project F 43-16, C2	E. A. Finney C. C. Rhodes	06-10-48	48 B-22
115	Operational Comparison of Premixed and M.S.H.D. Specification Materials for Reflectorized Centerlines	L. L. Peterson F. Ballew	08-25-48	47 G-36
116	Shoulder Construction Practice in Michigan	E. A. Finney	11-20-48	42-E-9
117	Investigation of Slippery Condition of Stone Sand Concrete Pavement	E. A. Finney	12-01-48	48 G-41
118	An Appraisal of the Membrane Method of Curing Concrete Pavements	C. C. Rhodes J. R. Evans	Not Listed	
119	An Improved Sonic Apparatus for Determining the Dynamic Module of Concrete Specimens	C. E. Goodell	01-20-49	39-B-11 (1G)
120	Michigan's Experiment in Snow and Ice Removal on Highways by Radiant Heat	E. A. Finney	01-15-49	36 G-3 (7) Report No. 1

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
121	Field Tests of Reflectorized Traffic Stripes	L. L. Peterson	01-26-49	47 G-36
122	Concrete Curb Design	E. A. Finney	02-17-49	39 F-7 (10)
123	Application of White Membrane on Project F 74-42,C1, US-25 North of Port Sanilac	C. C. Rhodes	03-01-49	42 B-14 (2) Report No. 1
124	Relative Resistance to Thermal and Mechanical Shock of Various 26-A Modified Aggregates Used in Bituminous Concrete Resurfacing	B. W. Pocock	03-07-49	47 A-9
125	"Field Check of Design of Positive Type Shear Developers" (A Cooperative Project Between the Bridge Division and the Research Laboratory)	F. S. Weber L D. Childs	03-07-49	48 F-17
126	Spalling of Joints on Project 14-33, C1	E. A. Finney	03-04-49	48 F-18
127	An Investigation of Hydron Form Lining	R. S. Fulton	04-01-49	48 G-42
128	The Use of Nonshrinking Mortar for Anchoring Bolts in Concrete Members	R. S. Fulton	05-01-49	49 G-44
129	Longitudinal Cracking on Project F 17- 42, C2	E. A. Finney	05-06-49	47 F-16
130	Performance and Cost Information Relative to Michigan Experiment in Snow and Ice Removal by Radiant Heat	E. A. Finney	05-10-49	36 G-3 (7) Report No. 2
131	Air-Entraining Concrete on Bridge Project F B 2 of 3-8-1, C1 Plainwell, Michigan	E. A. Finney	05-16-49	42 B-13
132	The Michigan State Highway Research Laboratory, Its Facilities, Its Functions, and Activities	E. A. Finney	06-01-49	N/A
133	Rust Inhibition of Chloride Salts Used in Ice Control or Dust Palliation	C. C. Sisler L. L. Peterson	08-15-49	48 G-43 Report No. 1
134	Cold-Poured Asphalt-Rubber Joint Seal Experiment on M-43	B. Pocock W. Martin	08-24-49	36 G-4 (3G) Report No. 1
135	Placement of Dowels by the Flex-Plane Mechanical Dowel Bar Installer on Project M8-31,C1	E. A. Finney	09-12-49	49F-20
136	Load-Deflection Tests on Corrugated Multi-Plate Sections	G. M. Foster	11-01-49	49 F-19 Report No. 1
137	Michigan Test Road Design Project, Nine Year Progress Report	E. A. Finney C. C. Rhodes	11-01-49	39 F-7 (2)
138	Condition Study of Menominee Tourist Lodge	B. W. Pocock	11-07-49	49 G-48
139	Neoprene Premolded Joint Seal Installation	E. A. Finney	11-15-49	36 G-4 (3H)
140	Progress Report on Design Project Michigan Test Road	H. C. Coons	11-25-49	39 F-7 (2)
141	Study of Corrosion Inhibitors Added to De-icing Chemicals	C. C. Sisler	12-01-49	48 G-43
142	Photometric Tests for Reflective Materials	B. W. Rhodes	12-10-49	N/A
143	Skidding Accidents Occurring on Stone Sand Concrete Pavements, August 1948 to August 1949	E. A. Finney	12-13-49	48 G-41
144	Experience with Air-Entraining Concrete in New Jersey	C. C. Rhodes	12-02-49	39 B-11 (7)
145	Curing Concrete Pavements with Membranes	C. C. Rhodes	08-08-50	42 B-14 (2)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
146	Design and Construction of Joints in Concrete Pavement Surfaces	W. Van Breemen E. A. Finney	02-10-50	39 F-1
147	Treated Sawdust for Skid Control on Ivy Pavements	C. C. Rhodes	03-29-50	36 G-3 (8)
148	Experimental Installation of Hydron Form Lining on Bridge West of Ovid - B2 of 19-12-4, C2	R. S. Fulton C. C. Rhodes	03-27-50	48 G-42
149	Pavement Roughness Surveys	E. A. Finney L. D. Childs	04-11-50	47 F-15
150	Snow Fence Material Investigation	E. A. Finney	06-01-50	36 G-3 (10)
151	Load Deflection Tests on Corrugated Metal Sections	M. J. Huber L. D. Childs	06-06-50	N/A
152	Michigan's Experiment in Snow and Ice Removal on Highways by Radiant Heat - Performance and Cost Information for Winter Season 1949-1950	E. A. Finney	08-01-50	36 G-3 (7)
153	Evaluation of Bituminous Concrete Surfaces on Stabilized Gravel Base	E. A. Finney O. L. Stokstad	08-18-50	49D-15
154	Inspection of Marshall Creek Aggregate	C. C. Rhodes	10-30-50	47 A-7
155	Michigan's Experience in the Use of White-Pigmented Membrane Curing Compound	C. C. Rhodes	11-30-50	N/A
156	Investigational Concrete Pavement in Michigan Design Project - Michigan Test Road - 10 Year Progress Report	H. C. Coons	12-15-50	N/A
157	ASTM 1950 Cooperative Check Tests on Pavement Marking Paints	E. A. Finney B. W. Pocock	03-26-51	47 G-36 (2)
158	Study of 1950 Traffic Paint Operations	B. W. Pocock	03-15-51	47 G-36
159	Report on Maryland Road Test One-MD	E. A. Finney	03-01-51	N/A
160	Comparative Field Study of Different Traffic Paints and Striping Practice	B. W. Pocock	10-10-51	47G-36 (4-E)
161	Progress Report - Neoprene PreMolded Joint Seal Study	B. W. Pocock	06-20-51	36 G-4 (3H)
162	Stripping Tests on 18 Asphalt Cements	L. A. Fickes E. Airola	10-26-51	51 C-6
163	A Laboratory Study of Rubber-Asphalt Mixtures for Pavements	L. A. Fickes	10-25-51	46 D-14
164	Vibrated Concrete Pavement in Michigan	E. A. Finney	11-28-51	51 B-27
165	Michigan's Experiment in Snow and Ice Removal on Highways by Radiant Heat	E. A. Finney	12-14-51	36 G-3(7)
166	Michigan Test on Rolled Beam Bridge Using H20-S16 Loading	G. M. Foster L. D. Childs	12-51	47 F-14
167	A Discussion of the Principles of Glass Bead Reflectorization	C. C. Rhodes B. W. Pocock	12-27-51	47 G-36 (1)
168	American Steel and Wire Company Alternate 3 - By 12-in. Mesh for Concrete Pavements	E. A. Finney	01-11-52	52 G-60
169	Investigation of Slippery Conditions on US-2 Stone Sand Concrete Pavement (Supplement No. 3 to Report No. 117)	E. A. Finney	02-19-52	48 G-41

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
170	Wallace Stone Investigation, Part I Scaling on Main Street Bridges, Lansing UB-1 and UB-2 of 33-6-4	E. A. Finney	02-29-52	51 A-12 (1)
171	The 1951 Proposed AASHTO Policy on Motor Vehicle Operation	L. D. Childs	02-01-52	51 F-23
172	Revision of Present Specifications Covering Adjustment of Catch-Basin Covers to Proper Elevation, to Permit Welding as Alternate to Brazing	E. A. Finney B. W. Pocock	02-21-52	51-G-59
173	Manual for Reflectometer Operation and Maintenance	C. C. Rhodes B. W. Preston	02-28-52	42 B-14 (2)
174	Mid-winter Inspection of Paper Snow Fence Installations, 1951-1952	E. A. Finney W. C. Broughton	03-52	36 G-3 (10)
175	Concrete Pavement Joint Saw-Cutting and Sealing Experiment, US-27	B. W. Pocock Wm. Martin	04-09-52	51 F-21
176	Investigation of Klumpp Aggregates	C. C. Rhodes M. G. Brown	04-25-52	51 A-11
177	1951 ASTM Cooperative Traffic Paint Tests	C. C. Rhodes	06-20-52	47 G-36
178	Paper Snow Fence Installations, 1951-1952	W. C. Broughton	07-01-52	36 G-3 (10)
179	Lincoln Stone as a Material for Bituminous Concrete Resurfacing	E. A. Finney W. C. Broughton	07-03-52	51 A-14
180	Foundry Slag as an Abrasive for Icy Pavements	B. W. Pocock	08-01-52	52 G-63
181	Investigation of Prefabricated Plywood Wales for Concrete Column Construction	L. T. Gehler	08-04-52	52 G-62
182	France Stone as a Material for Bituminous Concrete Resurfacing	E. A. Finney	09-30-52	51 A-13
183	Failure of Expansion Joint Filler on John C. Lodge Expressway: Construction Project 82-127	E. A. Finney	09-30-52	36 G-4 (7e)
184	Results of Skidding Tests on Stone Sand Concrete Pavements, Projects 77-66, C1 and 71-24, C1	E. A. Finney	12-19-52	48 G-41
185	Joint Failures on Construction Project 63-37, C4, M-59 Between US-24 and Auburn Heights	E. A. Finney	12-24-52	39 F-7 (14)
186	Condition Survey of Bituminous Concrete Projects Containing Wallace Stone	E. A. Finney	12-02-52	51 A-12
187	1952 Performance Tests of Traffic Paints	E. A. Finney C. C. Rhodes	12-18-52	47 G-36
188	1952 Performance Tests of Traffic Paints	E. A. Finney	04-01-53	47 G-36 (5)
189	Analysis of Proposed Research Projects Involving Radioactive Isotopes	B. A. Pocock	02-11-53	52 G-61
189A	Analysis of Proposed Research Projects involving Work with Radioactive Isotopes	B. W. Pocock	05-15-53	52 G-61
190	Michigan Experiment in Snow and Ice Removal on Highways by Radiant Heat 1952 #5	E. A. Finney	03-02-53	36 G-3 (7)
191	Wallace Stone Investigation Part III Comparative Laboratory Study of Wallace Limestone with the National Crushed Stone Association	M. G. Brown E. A. Finney	06-01-53	51 A-12 (3)

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192	Michigan's Experiment in Snow and Ice Removal on Highways by Radiant Heat Report #6	E. A. Finney	07-07-53	36 G-3 (7)
193	Report on Experiment with HP-7 Admixture, US 23 - Rogers City - 71-24, C1	W. C. Broughton	08-20-53	42 B-15 (1)
194	Experimental Concrete Capping on Groesbeck Highway, Project F 50-7, C5 - F-421 (1)	W. C. Broughton	08-20-53	52 F-25
195	Evaluation of Aggregate Sources	M. G. Brown	09-03-53	47 A-7
196	Neoprene Premolded Joint Seal Installation, Project F 34-15, M-66	W. C. Broughton	09-15-53	36 G-4 (3h)
197	Experimental Contract Resealing of Joints and Cracks on US-16, Nunica to Fruitport Project Mc 70-28,C3	L. A. Fickes	10-09-53	53 G-68
197A	Experimental Patching of Broken Concrete at Expansion Joints - US-16, Nunica to Fruitport	L. A. Fickes	12-04-53	53 G-68
197B	A Condition Survey of Experimental Contract Resealing and Patching Project, US-16 Nunica to Fruitport	L. A. Fickes	02-24-54	53 G-68
198	Study of the Effectiveness of Hook Bolts for Use as Tie Bars for Longitudinal Joints	G. R. Cudney	11-03-53	39 F-1
199	Paper Snow Fence Installations 1952 - 1953	W. C. Broughton	12-15-53	36 G-3 (10)
200	A Study of the Rigidity of Various Dowel Bar Assemblies	L. T. Oehler G. R. Cudney R. D. Behr	12-18-53	39 F-1 (3)
201	Wallace Stone Investigation Part II, 1951 Condition Survey of Concrete Pavements and Bridges Containing Wallace Bayport Crushed Limestone Aggregates	R. S. Fulton M. G. Brown E. A. Finney	12-31-53	51 A-12 (2)
202	Cracking Experience of Concrete Pavements Containing Slag Coarse Aggregate - Results of 1953 Survey	E. A. Finney L. T. Oehler	12-31-53	46 B-20
203	Special Study of Tie Wires For Snow Fence Construction	G. R. Cudney	12-31-53	36 G-3 (10)
204	The Influence of Subsealing on Pavement Deflection At Two test Locations on US-24 & US-25	L. T. Oehler R. D. Behr	01-19-54	53 F-32
205	Evaluation of Metal Primers and Wood Sealers	B. W. Preston	02-08-54	53 G-66
206	Experimental Concrete Capping on Groesbeck; Joint Investigation Between Construction Division and Testing and Research Division with Approval of Bureau of Public Roads	N/A	04-16-54	52F-25
207	Condition Survey, US-2, Wakefield to Iron River, U.P.	Wm. Broughton E. Bessonon A. Smith	04-16-54	53 F-30
208	Concrete Spalling on Projects 7-20, C6 and 7-21, C2 on US-41 Upper Peninsula	E. A. Finney M. G. Brown	04-16-54	51 B-26
209	A Study of the Relative Effectiveness of Methods for End Stiffening of Corrugated Metal Culverts	G. Cudney	05-20-54	53 F-33
210	Neoprene Premolded Joint Seal Study Construction Project F 34-15, C4 on M-66 Progress Report No. 4	W. C. Broughton	07-01-54	36G-4 (3h)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
211	Tensile Strength Characteristics of Hook Bolts Furnished by Jones & McKnight, Inc.	E. A. Finney	07-07-54	54 F-35
212	Michigan's Experience in the Use of Pozzolite and HP-7 Admixtures for Concrete Pavement Construction	By Research Laboratory	07-30-54	39 B-11 (2) 39 B-8 42 B-15 (1) 42 B-15 (2)
213	Experiment with Vinsol Resin and HP-7 Admixtures Under Cold Weather Concreting Conditions	E. A. Finney	08-10-54	42 B-15(3)
214	New Impact Tester for Reflector Buttons	B. W. Preston	08-16-54	N/A
215	Experimental Capping Study, Construction Project F 33-54, C4 on US-127, Progress Report No. 1	Wm. Broughton	12-01-54	53 F-29
216	Application of Absorption Spectroscopy to Highway Testing and Research	C. Rhodes	10-22-54	N/A
217	Measuring Traffic Paint Abrasion with Beta Rays	W. Pocock	11-19-54	52 G-61
218	Experimental Resealing of Joints on M-83 Saginaw County, Projects 73-25, C3 & C4	L. A. Fickes	01-10-55	53 C-9
219	Vibration and Deflection of Rolled Beam and Plate Girder Type Bridges	G. Foster L. T. Oehler	01-10-55	53 C-9
220	Performance of Hot-Poured Rubber-Asphalt Joint Sealing Compounds	L. A. Fickes	05-19-55	53 G-71
221	Michigan's Experiment in Snow and Ice Removal on Highways by Radiant Heat, 1953-54 Winter Performance and Cost, Report No. 7	E. A. Finney	01-20-55	36 G-3 (7)
222	Survey of Skid Resistance of Michigan State Highway Surfaces - CONFIDENTIAL	E. A. Finney General Motors Proving Ground	12-31-54	54 G-74
223	A Study of Pavement Deflections on Faulted and Cracked Pavement Slabs on US-24A, South of Erie	L. T. Oehler	02-15-55	53 F-31
224	A Comparison of the Bond-Reducing Effectiveness of Cutback Asphalt with that of a Powdered Graphite Lubricant as Dowel Bar Coatings	G. R. Cudney	04-01-55	54 G-75
225	Second Condition Survey of Experimental Contract Resealing and Patching Project, US-16, Nunica to Fruitport, Project MC 70-28, C3	L. A. Fickes	03-31-55	53G-68
226	Experimental Cold-Applied Joint Seal Installation on US-31, Holland By-Pass Project FI 3-38, C2R; FI 70-46, C2R	L. A. Fickes	05-25-55	36 G-4 (8)
227	ASTM 1954 Cooperative Traffic Paint Tests	C. C. Rhodes B. W. Pocock	06-22-55	47- G-36
228	Experimental Resealing of Joints on M-83 Saginaw County, Projects 73-25, C3 & 4, First Condition Survey	L. A. Fickes	04-25-55	53 C-9
229	Investigation of the Influence of Soil Particles Passing the Number 200 Sieve (0.074 mm.) On the Stabilization of Gravel	R. J. Leonard	06-07-55	54E-14
230	Evaluation of the Lateral Stability of Posts for Deep Beam Guard Rail	G. R. Cudney	06-23-55	55 F-39
231	Study of Premolded Rubber Base Plate for Joints	L. A. Fickes	06-14-55	53 G-70
232	Static Load Deflection Tests on Various Types of Deep Beam Guard Rails	G. R. Cudney	07-07-55	54 F-36

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
233	Determination of the Modulus of Concrete Support, G, for the Design of Dowels in Transverse Pavement Joints	G. R. Cudney R. D. Behr	07-11-55	39 F-1
234	Investigation of Bichler Brothers Gravel	M. G. Brown	07-12-55	54 A-16
235	Report N/A			
236	A Comparison of Beaded Paint and Sheet Reflectorized Stop Signs (Red)	B. W. Preston	10-14-55	42 G-19 (9)
237	A Study of the Rigidity of the Union Steel Products Dowel Bar Joint Assembly	E. A. Finney	08-29-55	39- F-1 (3)
238	Experimental Installation of Styrofoam and Corrugated Paper Board to Form a Contraction Joint Groove Prior to Sawing	L. A. Fickes	09-19-55	51 F-21 (1)
239	Experimental Resealing of Joints on M-83 Saginaw County Projects 73-25, C3 & C4, Second Condition Survey	L. A. Fickes	10-12-55	53 C-9
239a	Investigation of Blow-up on M-47 Construction Project 73-46, C4 South of St. Charles	E. A. Finney	10-01-55	39 F-7 (14)
240	Procuring Traffic Paint on the Basis of Performance Tests	C. C. Rhodes	11-25-55	47 G-36 (7)
241	1954 Performance Tests on Traffic Paints	C. C. Rhodes	11-01-55	47 G-36 (7)
242	Abstracts from Michigan's Studies of Slipperiness of Concrete Pavements Constructed with Stone Sand as the Fine Aggregate	E. A. Finney	10-20-55	48 G-41
243	Michigan State Highway Department Photometric Test for Reflective Materials	B. W. Preston	12-27-55	51 G-54
244	The Structural Characteristics of Two Overhead Sign Supports (a 100 Foot Steel Tubular Beam and a 100 Foot Aluminum Truss)	G. R. Cudney L. T. Oehler	12-15-55	54 G-73
245	Traffic Paints and Their Use in Pavement Marking	C. C. Rhodes	12-13-55	47 G-36
246	Michigan's Experiment in Snow and Ice Removal on Highways by Radiant Heat, Eighth Progress Report	E. A. Finney	01-12-56	36 G-3 (7)
247	Performance Tests on Experimental Black Traffic Paints, First Progress Report	A. J. Permoda W. Martin	10-01-56	47-G-36 (8a)
248	Performance of Hot-Pour Rubber-Asphalt Joint Sealing Compounds in 50-ft. Spaced Joints	L. A. Fickes	02-16-56	53 G-71 (1)
249	Data Summaries on Nuclear Methods Reported on Soils	B. W. Pocock	12-28-55	N/A
250	A Comparison of a Vinyl Coating System With a Red Lead - Brown Lead - Aluminum Coating System for Bridges	B.W. Preston	01-23-56	53 G-66
251	Measurement of the Linear Coefficient of Thermal Expansion of Pavement Marking Paint and a Mathematical Consideration of the Phenomenon of Paint Peeling	W. Sommerman	01-20-56	53 H-3 (2)
252	Application of A Beta-Ray Backscatter Thickness Gage to Traffic Paint Wear Studies	B. W. Pocock	01-20-56	52 H-3 (1b)
253	Supplemental Progress Report on Experimental Slag Bituminous Concrete Project (M82-42, C2 & C3)	P. Milliman	02-06-56	55 D-22
254	Performance of Hot-Pour and Cold - Applied Joint Seal Materials, US-127 Relocation South of Jackson	L. A. Fickes	02-20-56	53 G-71 (2)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
255	Road Surface Friction From the Standpoint of Automotive and Highway Engineers	P. C. Skeels K. A. Stonex E. A. Finney	02-13-56	54 G-74
256	A Theory for Evaluating the Destructive Tendency of Heavy Axle Loads on a Concrete Pavement	L. T. Oehler R. D. Behr	03-30-56	47 F-13 (3)
257	Third Condition Survey of Experimental Contract Resealing and patching, US-16, Nunica to Fruitport	L. A. Fickes	04-16-56	N/A
258	The Experimental Determination of the Stress Distribution Along a Dowel at a Transverse Joint in a Concrete Pavement	P. Milliman R. D. Behr	05-01-56	54 F-38
259	Rigidity Tests on LaClede Dowel Bar Joint Assembly	L. T. Oehler	06-05-56	39 F-1(3)
260	Protective Coatings for Structural Steel	A. J. Permoda W. Martin	07-10-56	49 G-50
261	An Analysis of Certain Mathematical Assumptions Underlying the Design and Operation of Gamma-Ray Surface Density Gages	B. W. Pocock	07-17-56	55 H-4 (a)
262	Flame Photometric Determination of Sodium, Potassium, Magnesium and Iron Oxides in Portland Cements	P. Biefeld	07-18-56	56 B-37
263	Metcoseal: A Protective Coating for Structural Steel	A. J. Permoda W. Martin	08-23-56	49 G-50 (1)
264	Investigation of Bridge Deck Deterioration: 81-1-13 on US-23 Over the Huron River	L. T. Oehler M. G. Brown	09-18-56	56 B-36
265	Load Deflection and Tensile Tests on Standard Type Steel Beam Guard Rail	G. R. Cudney	10-05-56	54 F-36
266	Cracking of Slag Aggregate Concrete on Gratiot Avenue, Detroit	E. A. Finney	10-22-56	46 B-20
267	1956 Performance Tests on White and Yellow Traffic Paint, First Progress Report	A. J. Permoda Wm. Martin M. H. Janson	10-22-56	47 G-36 (9)
268	A Field Study of Joint and Crack Resealing Methods and Materials	L. A. Fickes C. C. Rhodes	11-01-56	53 G-68
269	1956 Traffic Paint Striping on US-25, Gratiot Avenue, Detroit	A. J. Permoda	11-01-56	47 G-36 (9c)
270	1955 Performance Tests on White and Yellow Traffic Paint	A. J. Permoda Wm. Martin	11-02-56	47 G-36 (8)
271	A Comparative Study of the Drop-In and Overlay Methods of Reflectoring Traffic Paints	C. C. Rhodes	11-21-56	47 G-36 (7a)
272	Vibration Susceptibilities of Various Highway Bridge Types	L. O. Oehler	01-31-57	55 F-40
273	Investigation of Perma-line Thermoplastic Pavement Marking Material	A. J. Permoda	02-04-57	50 G-52 (1)
274	Color Patterns for Flagmen's Vests	C. C. Rhodes M. H. Janson D. F. Simmons R. D. Cook	02-18-57	56 G-52 (1)
275	Subgrade Embankment Soil: AASHTO Road Test	L. W. Smith	03-01-57	55 F-45

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
276	A Study of the Rigidity of American Steel and Wire Co. Contraction Joint Assembly	G. R. Cudney L. T. Oehler	03-07-57	39 F-1 (3)
277	ASTM 1956 Cooperative Traffic Paint Tests	A. J. Permoda Wm. Martin	03-15-57	47 G-36
278	Michigan's Experiment in Snow and Ice Removal by Radiant Heat, Ninth (Final) Progress Report	E. A. Finney	04-05-57	36 G-3 (7)
279	Aluminum Right-of-Way Fence	E. A. Finney C. C. Rhodes	07-16-57	57 G-85
280	Rusting of Steel Beam Guard Rail on Ford and Lodge Expressways	A. J. Permoda	08-05-57	49 G-50 (4)
281	1956 Performance Tests on White and Yellow Traffic Paint, Second Progress Report	A. J. Permoda Wm. Martin M. H. Janson	10-22-57	47 G36 (9)
282	1957 Performance Tests on White and Yellow Traffic Paint, First Progress Report	A. J. Permoda Wm. Martin M. H. Janson	11-06-57	47 G-36 (10)
283	Michigan's Skid Testing Program	M. G. Brown E. A. Finney	01-02-58	54 G-74
284	Determination of Sodium, Potassium, Magnesium, and Iron Oxides in Portland Cement by Flame Photometry	P. F. Biefeld C. C. Rhodes	03-03-58	56 B-37
285	Characteristics and Quantitative Estimation of Waxy Materials in Membrane Curing Compounds	M. H. Janson	03-25-58	57 G-83
286	1956 Performance Tests on Free-Flowing Glass Beads	A. J. Permoda Wm. Martin M. H. Janson	03-26-58	47 G-36 (9b)
287	Rigidity Tests on Union Steel Products Co. Dowel Bar Joint Assembly (Type L.)	L. T. Oehler	04-18-58	39 F-1 (3)
288	Study of Premolded Bituminous Base Plate for Joints	L. A. Fickes	04-07-58	49 G-51
289	Rigidity Tests on Universal Form Clamp Co. Dowel Bar Joint Assembly (Type M)	L. T. Oehler	05-08-58	39 F-1(3)
290	Investigation of Use of Berylex as an Admixture in Concrete	M. G. Brown	04-14-58	54 B-29
291	Power-Glo Additive for Automobile Use	A. J. Permoda M. H. Janson	04-17-58	58 G-88
292	Reflectance Tests for Concrete Curing Materials	C. C. Rhodes M. H. Janson M. G. Brown	05/00/58	57 B-40
293	The Structural Characteristics of a Plastic Fiberglass Overhead Sign Support Structure	G. R. Cudney	06-15-58	54 G-73
294	Michigan's Skid Testing Equipment	M. G. Brown Paul Milliman Gale Otto	09-12-58	54 G-74
295	Relative Skid Resistance of Pavement Surfaces Based on Michigan's Experience	E. A. Finney M. G. Brown	08-00-58	54 G-74

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
296	Progress Report on Study of Dynamic Load Aspects of Truck Size and Weight	E. A. Finney	11-00-58	55 F-42
297	Operating Manual for Soil Density and Moisture Measurements by Nuclear Methods	B.W. Pocock L. W. Smith W. H. Schwartzje	09-00-58	55 H-4
298	1957 Performance Tests on White and Yellow Traffic Paint	A. J. Permoda Wm. Martin M. H. Janson	11-00-58	47 G-36(10)
299	1957 Traffic Paint Performance Test: Oakland Avenue, Detroit	A. J. Permoda Wm. Martin M. H. Janson	11-00-58	47 G-36 (10)
299A	1957 Traffic Paint Performance Test: Oakland Avenue, Detroit	A. J. Permoda Wm. Martin M. H. Janson	11-00-58	47 G-36 (10)
300	Determination of Cement Content of Pavement Concrete: Construction Project F 62031, C2U, C3R	C. C. Rhodes M. H. Janson W. L. Frederick S. W. Ruis	11-00-58	58 B-44
301	1958 Performance Tests on White and Yellow Traffic Paints	A. J. Permoda Wm. Martin M. H. Janson	12-00-58	47 G-36 (11)
302	Final Report—Design Project, Michigan Test Road	E. A. Finney L. T. Oehler	01-00-59	39 F-7 (2)
303	Comparison of Stability of Three Types of Steel Fence Post	S.L. DeLeeuw G. R. Cudney	01-00-59	58 F-48
304	Field Evaluation of Concrete Curing Materials	M. G. Brown	01-00-59	58 B-43
305	Spectrophotometric Identification of Membrane Curing Compounds	M. H. Janson	02-02-59	57-G-83
306	Performance of a 20-Year-Old Section of US 27: Marshall to the Eaton County Line (13072)	R. C. Mainfort O. L. Lindy	03-00-59	54 F-37
307	A Device for Applying SR-4 Strain Gages to Interior Surfaces of Hollow, Pavement Load-Transfer Dowel Bars	P. Milliman	12-00-59	54 F-38
308	Operating Manual for Soil Density and Moisture Measurements by Nuclear Methods	B. W. Pocock L. W. Smith W. H. Schwartzje	03-00-59	55 H-4
309	Rock Salt Anti-Caking Agent Investigation	W. Frederick	03-10-59	59 G-97
310	An Evaluation of the Serviceability of Calcium Chloride Bags	R. C. Mainfort	03-00-59	59 G-96
311	The Michigan Combination Density-Moisture Gage for Soils	B. W. Pocock L. W. Smith W. H. Schwartzje R. E. Hanna	03-59	55 H-4, 56 H-5

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
312	Catatherm Thermoplastic Striping	A. J. Permoda Wm. Martin M. H. Janson	04-59	47 G-36 (10a)
312A	Up to Date Summary of Durability of Catatherm Thermoplastic Striping Under Departmental Evaluation	A. J. Permoda	07-06-61	47 G-36(10a)
313	Testing of Aluminum Alloy Deep Beam Guard Rail	G. R. Cudney R. E. Hooper	05-59	54 F-36
314	An Experimental Continuously Reinforced Concrete Pavement in Michigan	G. R. Cudney	12-59	57 F-46
315	Pull-Out Tests on Four Types of Expansion Sleeve Tie Bar Devices	R. E. Hooper G. R. Cudney	09-59	59 F-52
316	The Michigan Nuclear Combination Density-Moisture Surface Gage	B. W. Pocock L. W. Smith W. H. Schwartje R. E. Hanna	09-59	55 H-4
317	Highway Research Program This Report Not Released	E. A. Finney W. D. Bennett	09-59	
318	1958 Performance Tests on White and Yellow Traffic Paints	A. J. Permoda Wm. Martin M. H. Janson	10-59	47 G-36 (11)
319	1959 Road Test on 1,000 Gallons of 3M Centerlite Prebeaded White Traffic Paint	A. J. Permoda	12-59	47 G-36 (12b)
320	Summary Report on Methods of Glass Bead Reflectorization of Traffic Paints	A. J. Permoda	12-59	47 G-36
321	Latex Modified Mortar in the Restoration of Bridge Structures	S. M. Cardone M. G. Brown A. A. Hill	12-59	57 B-39
322	The Michigan Test Road Durability Project	C. C. Rhodes E. A. Finney	01-60	39 B-11(2)
323	No Publication			
324	1959 Summaries of Pavement Roughness	Onto L. Lindy Paul Milliman	03-61	47 F-15
325	Roughness Measurements of Bridge Decks and Approaches	R. E. Hooper L. T. Oehler	03-60	59 F-51
326	Contract Signing, Interstate 94 (US 12), 5 mi East from Paw Paw; BI 80024, C2RN & C5RN; I 94-2(5)-60	A. J. Permoda	04-07-60	60 G-100
326A	Contract Signing, Interstate 94 (US 12), 5 mi East from Paw Paw; BI 80024, C2RN & C5RN; I 94-2(5)-60	M. H. Janson	05-25-60	60 G-100
327	Transverse Joint Problems	E. A. Finney	04-60	39 F-7(14)
328	Comparative Tests of Beaded Paint and Sheet Materials for Sign Reflectorization	C. C. Rhodes A. J. Permoda M. H. Janson	05-60	51 G-54(1)
329	Design Considerations for Steel Reinforcement in Continuously Reinforced Pavement	G. R. Cudney	04-60	57 F-46

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
330	Design Considerations for Reinforcement and Joint Spacing for Pavements with Small-Radius Curves	G. R. Cudney	05-60	39 F-7
331	Experimental Concrete Capping on Groesbeck Highway: Project F50-7, C5. Third Progress Report	O. L. Lindy	05-60	52 F-25
332	Deterioration of Concrete Highways and Bridges Containing Big Cut Pit Aggregates	O. L. Lindy M. G. Brown	06-60	59 A-19
333	No Publication			
334	Study of Premolded Rubber and Polyvinyl Chloride Base Plate for Joints	D. F. Simmons C. C. Rhodes	06-03-60	53 G-70
335	Cement Content of Pavement Concrete: US 12 South of Paw Paw; BI 80024, C2RN	C. C. Rhodes M. G. Brown	06-60	59 B-48
336	Flasher Brightness at Selected Intersections	M. H. Janson G. M. Smith	06-60	59 B-48
337	Roughness Evaluation of Railroad Crossings in Battle Creek	R. Hooper	07-06-60	60 F-56
338	Granco Steel Guard Rail Post (6-1/2 x 3-1/2 x 8.64 "S" Section)	G. R. Cudney	07-08-60	55 F-39
339	Quantity and Distribution of Calcium Chloride Within Stock-Piles of Treated Aggregate	R. C. Mainfort F. Copple	08-60	59 E-19
340	1959 Traffic Paint Performance Tests: Cooperative Tests with City of Detroit	A. J. Permoda	08-60	47 G-36(12a)
341	Inspection of Fiberglass Reinforced Plastic Overhead Sign Support Structure	G. R. Cudney	08-31-60	54 G-73
342	Lateral Stability of Posts for Deep Beam Guard Rail: Second Progress Report	G. R. Cudney	09-60	55 F-39
343	Performance of Metallic and Non-Metallic Base Plates of Joints	O. L. Lindy L. T. Oehler	09-8-60	53 G-70
344	An Evaluation of Hinged Wire Mesh Reinforcement for Concrete Pavement	R. Hooper	09-60	60 F-55
345	Storage and Handling Properties of a Synthetically Granulated Salt	R. C. Mainfort J. D. Shackelford	09-60	59 G-98
346	Water Leakage on a Prestressed Concrete Bridge (B9 of 38-1-14 Dettman Road over US 12, Jackson)	O. Lindy L. T. Oehler	11-60	58 F-49(2)
347	Comparison of Clear and White Polyethylene Sheets for Concrete Curing	R. H. Merrill M. G. Brown	10-05-60	55 B-30
348	1959 Performance Tests on White And Yellow Traffic Paints	A. J. Permoda M. H. Janson Wm. Martin	10-60	47 G-36(12)
349	Performance of Non-Metallic Base Plates, Fourth Progress Report	L. T. Oehler O. L. Lindy	11-01-60	53 G-70
350	Investigation of Three Spalled Joints, Norton-Glade Expressway, Muskegon, US-16 (Project 61-47.C7)	L. T. Oehler O. L. Lindy	02-61	39 F-7(14)
351	Durability of Bridge Concrete: I 75-US-23 Over the Flint River (B1 of 25-7-3)	L. T. Oehler M. G. Brown	03-61	59 B-47
352	Lightning Damage to Concrete Pavement: US-10 Bypass, Midland (Project 56044, C9)	O. L. Lindy J. R. Darlington	03-61	60 B-52

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
353	Experimental Concrete Capping: US-127 South of Holt (Project F 33-54, C4) Second Progress Report	O. L. Lindy	04-61	53 F-29
354	Investigation of Thorite Filling and Patching Compound for Sealing Core Holes In Box Type Prestressed Beams	M. G. Brown	12-30-60	60 B-53
355	Longitudinal Cracking on I 75 - US-23, Genesee County	O. L. Lindy	05-25-61	39 F-7(14)
356	Cracking of Slag Aggregate concrete on Gratiot Avenue, Detroit (Project 50-27, C4)	L. T. Oehler	03-07-61	50-27, C4
357	Summary of Pavement Skid Test Data on the State Trunkline System	M. G. Brown	03-15-61	54 G-74
358	Field and Laboratory Evaluation of the Michigan Nuclear Gage	R. C. Mainfort J. H. DeFoe	08-61	59 E-21
359	Investigation of Three Spalled Joints on US-131 South of Grand Rapids (Construction Projects F 41-88, C1RO and M 41-88)	O. L. Lindy	06-26-61	39 F-7 (14)
360	Strength Comparison of Steel Sign Posts	H. C. Brunke	06-61	58 F-48
361	Protective Coatings for Structural Steel, Second Progress Report	A. J. Permoda R. L. Snider	09-61	49 G-50
362	Summary Report on Skid-Correction Program for High-Accident Intersections	R. H. Merrill A. Phillipich	07-61	54 G-74
363	Performance of a Fiberglass Reinforced Plastic Experimental Overhead Sign Support Structure	G. R. Cudney	09-61	54 G-73
364	Preventive Measures for Obtaining Scale-Free Concrete Bridge Structures	E. A. Finney	12-61	39 B-11
365	Continuously Reinforced Bituminous Resurfacing, Detroit Industrial Expressway (I-94), West of Ypsilanti	O. L. Lindy	01-62	54 D-20 (3)
366	1960 Summary of Pavement Roughness	O. L. Lindy P. Milliman	11-61	47 F-15
367	Aggregate Source and Popout Frequency, I-94 from Marshall to Jackson	O. L. Lindy	11-61	39 F-7 (14)
368	Michigan's Test Road for Transverse Joints, I-96 from Meridian Road to Wallace Road	L. T. Oehler	11-61	60 F-58
369	1960 Performance Tests on White and Yellow Traffic Paints	A. J. Permoda R. L. Snider M. H. Janson	11-61	47 G-36(13)
370	A Symposium on the Michigan Nuclear Gage for Soils (NOT RELEASED FOR PUBLICATION)	B. W. Pocock R. E. Hanna W. H. Schwartzje C. A. Zapata	10-62	55 H- 4
371	Performance Testing of a 60-Foot, Open Web Section, Box Truss Aluminum Overhead Sign Support Structure	G. R. Cudney	03-62	54 G-73
372	Failure of Stressed Concrete Bridge Deck Beams (X01 of 11016), I-94 over NYCRR	G. R. Cudney	02-62	61 B-54
373	Machine Finishing of Bridge B01 of 11016: I 94 over the St. Joseph River	G. R. Cudney	03-62	60 F-57
374	Cracks in Retaining Wall on James Couzens Extension of Lodge Expressway	G. R. Cudney	02-23-62	61 F-63

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
375	Comparison of Stone Dust and Natural Soil Particles as Used for the Fines Fraction of Aggregate Base Course Mixtures, First Progress Report	R. C. Mainfort E. C. Novak	03-62	61-23
376	Lenz's Proprietary Paints for Creosoted Wood Posts and for Structural Steel	A. J. Permoda	03-20-62	49 G-50 (2)
377	Influence of the Minus 200 Fraction on Engineering Properties of Soil and Gravel	R. C. Mainfort J. M. Portigo	05-62	54 E-14
378	Inspection of Mixer Efficiencies at Central Concrete Mixing Plants by Means of Gamma Rays	B. W. Pocock W. H. Schwartz C. A. Zapata R. E. Hanna	02-63	R-61 H-7
379	Propane-Fueled Warning Lights	M. H. Janson G. M. Smith	04-10-62	61 NM-60
380	Rustake Glare-Proof Fencing	B. W. Pocock	04-09-62	61 NM-58
381R	Evaluation of Armor Speed Finish and Gun-Tex as Protective Coatings for Concrete Structures	C. C. Rhodes B. W. Pocock	04-11-63	R-58 B-45 NM-10
382	Woven Asbestos Sheet Packing for Bridge Post Pads	L. T. Oehler H. C. Brunke	04-16-62	62 NM-67
383	Analysis of Test Cores from S04 of 82062, Scotten Avenue over US-12 (Michigan Avenue) Detroit	A. J. Permoda M. G. Brown	04-26-62	61 B-59
384	Condition and Roughness Surveys on I 75 - US-233 Zilwaukee North to Kawkawlin	L. T. Oehler O. L. Lindy	05-18-62	39 F-7(14)
385	Investigation of Low Test Strength on Concrete from Project EBI 17034, C1UN	M. G. Brown	05-22-62	61 B-60
386	Reinforced Polyethylene Sheeting for Curing Concrete (Griffolyn Co. Films)	A. J. Permoda	06-06-62	55 B-30
387	Evaluation of Initial Striping on Concrete Pavements, 1960 Tests	A. J. Permoda	06-25-62	60 NM-23
388	Effects of Erroneous Admixture in Bridge Deck Concrete: S06 of 23152B (I-96 at Millett Road)	M. G. Brown	06-22-62	R62 B-63
389	Quantity and Distribution of Chloride in Aggregate as Placed in the Stockpile and on the Road	E. C. Novak, Jr R. C. Mainfort	07-62	R-59 E-19
390	Effects of Axle Loads as Applied by Rubber-Tired Earth-Moving Equipment to Rigid and Flexible Pavement and Bridges (See 1964 Bound Reports)	F. Copple		R-61 F-61
391	Evaluation of a Hinged Wire Mesh Reinforcement for Concrete Pavements	H. C. Brunke	10-62	R-60 F-55
392	Comparison of Sodium Chloride and a 3:1 Mixture of Sodium Chloride and Calcium Chloride as Used for Highway Ice Control	J. H. DeFoe R. C. Mainfort	08-62	R-61 G-110
393	Aluminum Chain Link Fencing	C. C. Rhodes	06-30-62	57 G-85
394	Houghton-Hancock Lift Bridge Deck Leakage (B01 of 31012)	M. G. Brown	08-08-62	R-62 B-66
395	Summaries of Michigan Pavement Roughness 1961 Test Program	P. M. Schafer L. F. Holbrook	12-62	R-47 F-15
396R	Aggregate Source and Popout Frequency, I-94 from Stevensville to Marshall	O. L. Lindy J. W. Sparbel	02-63	R-39 F-7 (14)
397	Failures of Continuously Reinforced Pavement, I-96, Portland Road to M-66	J. E. Simonsen	12-62	R-57 F-46

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
398	Premolded Rubber and Polyvinyl Chloride Base Plates	E. A. Finney	10-15-62	R-53 G-70
399	1961 Performance Tests of White and Yellow Traffic Paints	A. J. Permoda R. L. Snider M. H. Janson	11-62	R-47 G-36(14)
400	Preservative Treatments for Timber Piling, First Progress Report	B. W. Pocock	11-62	R-61 NM-38 R-61 NM-47
401	"Compriband" Preformed Urethane Joint Sealer	A. J. Permoda D. F. Simmons	11-13-62	R-62 NM-62
402	Curb and Median Joint Sealing to Correct Deck Leakage: Houghton-Hancock Life Bridge (B01 of 31012)	R. H. Merrill	11-06-62	R-62 B-66
403	Strength Comparison of Steel Sign Posts	H. C. Brunke	12-62	R-58 F-48
404	Laboratory and Field Study of Right-of-Way Fence Wire Splices	H. C. Brunke	01-29-63	Unclassified Project No. R-9
405	Placement of Steel: I-75 North of St. Ignace (Project No. BI 49025E, C18)	C. J. Arnold	12-03-62	39 F-7
406	Chemical Analysis of Cover Plate Material from Bridges S09 and S10 of 82022 (I-94 over Ecorse Road)	C. J. Arnold	12-26-62	R-62 F-67
407	Trenching for Expansion Joints	C. J. Arnold	12-20-62	R-39 F-7 (14)
408R	Condition of the Stockbridge Soil-Cement Project after 21 Years of Service (Construction Project M 33-50, C1)	R. C. Mainfort	01-63	R-36 E-5 (2)
409	Repair of Continuously Reinforced Pavement I-96 Portland Road to M-66	J. E. Simonsen	01-63	R-57 F-46
410	1962 Observations on Condition of Experimental Poz-O-Pac Construction (Construction Projects BU 56044, C3UN and C4UN)	R. C. Mainfort	01-63	R-59 E-18
411	Defective Concrete in Bridge Deck Pour: I-94 over US-131 Southwest of Kalamazoo (BI S07 of 39024B, C1)	M. G. brown W. L. Frederick	01-63	R-62 B-68
412	Development of a Rapid Field Method for Determining Optimum Moisture and Maximum Density of Soils	R. C. Mainfort J. H. DeFoe	02-63	R-61 E-24
413	Air Pollutants from Gypsum Plants at the I-96 Grand River Bridge (B03 of 41029E, C1)	M. H. Janson A. J. Permoda	02-22-63	R-62 G-112(1)
414R	Practical Bridge Loading Limitations in Relation to Current Commercial Vehicle Types and Bridge Design Practice (This Report not Released)	L. T. Oehler P. G. Gray	05/63	R-55 F-45
415R	Experimental Shoulder Stabilization: US-23 North of Alpena (MN 04032, C6) First Progress Report (This Report not Released)	E. C. Novak, Jr. R. C. Mainfort	5/63	R-62 E-25
416	Lime Treatment of Ontonagon Clay: I-75 at Pine River (Construction Project BI 49025G, C22RN)	R. C. Mainfort E. C. Novak, Jr.	03-63	R-58 E-17
417R	Form Insulation for Bridge Concrete	C. A. Zapata G. A. Otto	12-63	R-58 G-89
418	Skid Test Results at High-Accident Intersections: Districts 1 through 10, 1962 Test Program	M. G. Brown	04-63	R-54 G-74
419	Corrosion of Painted Steel Right-of-Way Posts	B. W. Pocock O. L. Lindy	04-63	R-61 NM-34
420	Progress Report on 1962 Traffic Paint Performance Tests	A. J. Permoda	04-17-63	R47 G-36(15)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
421	Profilometer Measurement of Bridge Roughness, First Progress Report	C. J. Arnold C. D. Church	05-63	R-61 F-65
422	Right-of-Way Fence Sagging Investigation	B. W. Pocock	05-01-63	R-63 G-126
423	Soil-Aggregate Cushions for Prevention of Reflection Cracking of Resurfaced Pavements, First Progress Report	F. Copple	05-63	R-62 F-70
424	Repair of Continuously Reinforced Experimental Pavement: I-96 from Portland Road to M-66	J. E. Simonsen	05-06-63	R-57 F-46
425	Terminal Report on Performance of Experimental Concrete Pavement Containing HP 7 Admixture: US-23A in Rogers City (Project F 71-24, C1)	O. L. Lindy	06-13-63	R-42 B-14(1)
426	Insulation Between Steel and Aluminum for Extruded Traffic Sign Mountings	B. W. Pocock C. A. Zapata	06-13-63	R-42 B-15(1)
427R	Transverse Cracking of New Concrete Pavement: M-37 from Ballards to Casnovia (Projects BF 41033D, C7U & C8/R; BF 41033E, C9U & C10R; BF 61171A, C1U)	O. L. Lindy	12-63	R-39 F-7(14)
428	Construction of Michigan's Experimental Transverse Joint Project, I-96 from Meridian Road to Wallace Road (Projects EBI 33084, C5 and C7; EBI 33085, C1)	J. E. Simonsen	01-64	R-60 F-58
429	Barrett Urethane Rigid Foam Joint Filler	A. J. Permoda	05-23-63	R-62 NM-72
430	Profilometer Measurement of Bridge Roughness, Second Progress Report	C. D. Church	06-63	R-61 F-65
431	Summaries of Michigan Pavement Roughness, 1962 Test Program	P. M. Schafer	10-63	R-47 F-15
432	Reflectorized Delineator Posts (Mid-States Steel and Wire Company)	M. H. Janson P. J. Chamberlain	10-63	R-47 F-15
433	Rusting of Cadmium-Plated Bolt Assemblies on Bridge Railings	P. G. Gray	09-04-63	R-63 G-130
434	Investigation of Defective Concrete in Bridge Deck Pour: B01 of 63081D, C6 (Southbound I-696 over the Rough River)	M. G. Brown	08-20-63	R-63 B-71
435	Evaluation of Preformed Rubber Sealer on M-46 West of Alma (Construction Project F29-23 C2)	A. J. Permoda	09-11-63	R-36 G-4(3b)
436	Hydraulic Oil for Use in the Houghton-Hancock Bridge	D. F. Simmons	09-04-63	R-62 G-120
437	Permalastic "J-Seal PX-1424" Two-Component Joint Sealant	A. J. Permoda	09-04-63	R-63 NM-94
438	Preservative Treatments for Timber Piling, Second Progress Report	B. W. Pocock	09-13-63	R-61 NM-38 R-61 NM-47
439	Progress Report on Salt Stabilized Sections of M-46 (Howard City to Newaygo), 1963 Surveys and Testing	R. C. Mainfort	10-09-63	R-57 E-15
440	Progress Report on Witcogard Rustproofers for Guard Rails	A. J. Permoda	10-07-63	R-63 NM-90
441	Concrete Durability on Bridge Deck Widening: I-94, Edsel Ford Expressway Structure over Dequindre Yards (EBBI X01 of 82024B, C5)	M. G. Brown	10-18-63	R-63 B-70
442	Investigation of Deck Cracking; I-96 EB over the Grand River in Grand Rapids (B02 of 41027A, C2)	G. R. Cudney M. G. Brown	10-18-63	R-63 B-70
443	Profilometer Measurement of Bride Roughness, Third Progress Report	C. D. Church	11-63	R-61 F-65

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
444	1962 Performance Tests of White and Yellow Traffic Paint (Including Cooperative Tests in Detroit and Wayne County)	A. J. Permoda R. L. Snider M. H. Janson	11-63	R-47 G-36(15) and (15a)
445	Polymer Plastic Marker Posts (Handley Industries, Inc.)	A. J. Permoda	12-09-63	R-63 NM-87
446	Application and First Inspection of Epoxy Sealers Between Concrete and Bituminous Wearing Surface of Approach Deck Spans of International Bridge at Sault Ste. Marie (B01 of 17034, C3)	A. J. Permoda R. H. Merrill	12-23-63	R-59 F-53(2)
447	Summary of Bituminous Concrete Skid Test Data Relative to Materials	M. G. Brown	01-24-64	R-54 G-74
448	Failure and Repair of Experimental Continuously Reinforced Concrete Pavement: I-96 Portland Road to M-66	J. E. Simonsen	03-64	R-57 F-46
449	Progress Report on "Tedlar" DuPont Polyvinyl Fluoride Film, Pre-Finished Metals, Inc.	A. J. Permoda	02-10-64	R-63 NM-100
450	Profilometer Measurement of Bridge Roughness, Fourth Progress Report	C. D. Church	02-64	R-61 F-65
451	Lime Treatment of a Detroit Silty Clay; M-39, Southfield Expressway at Oakwood Blvd., Dearborn (Project U 82192B, C21)	E. C. Novak, Jr R. C. Mainfort	04-64	R-58 E-17
452	Progress Report on the Experimental Transverse Joint Project I-96 from Meridian Road to Wallace Road	L. T. Oehler	02-24-64	R-60 F-58
453	Fasson Reflective Sheeting (Fasson Products Co.)	M. H. Janson	03-13-64	R-63 NM-109
454	Decayed Dimension Guard Rail Posts near Farmington	W. L. Frederick	03-20-64	R-63 G-131
455	Installation and First Inspection of Experimental Joint Sealants on I-496 (Construction Projects I 33045D, C1, S12 and S14 of 33045D) I 496-7(4) 146	A. J. Permoda	04-03-64	R-51 G-56, R-62 NM-62, R-62 NM-66, R-63 NM-85
456	Failure of I-94 Joint Sealants: Mt. Clemens to Marysville	M. G. Brown D. F. Simmons	04-64	R-64 G-133
457	Progress Report on 1963 Traffic Paint Performance Tests	A. J. Permoda	04-09-64	R-47 G-36(16)
458	Scaling of Concrete Bridge Decks Constructed with Stay-In Place Forms	R. H. Merrill J. E. Simonsen	04-64	R-62 B-61
459	Michigan's Experiment in Using "Unitubes" to Form Transverse Joints (Construction Project EBI 33084, C7)	J. E. Simonsen L. T. Oehler	04-64	R-62 B-61
460	Fifth Progress Report on Special Painting of Steel Bridge Girders Under Project Bridges and Bridge Railings—Construction and Maintenance	A. J. Permoda	05-25-64	R-49 G-50(4)
461	Skid Test Results at High-Accident Intersections: Districts 1 through 10—1963 Test Program	P. M. Schafer C. D. Church	05-64	R-54 G-74
462	Investigation of Snow Fence Post Breakage	J. T. Ellis C. J. Arnold	06-64	R-63 G-132
463	Use of Silicone Admixture in Bridge Deck Concrete: Scotten Avenue Over US-12 (Michigan Avenue), Detroit (MB S04 of 82062C, C3)	M. G. Brown R. H. Merrill	06-64	R-50 B-49(3) R-61 B-58

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
464	Smoke and Corrosive Industrial Refuse Investigation: I-75 High Level Bridge over the Rouge River, Detroit (Construction Project B01 of 82194G)	M. H. Janson W. L. Frederick M. G. Brown C. C. Rhodes	07-64	R-62 G-112
465	Pavement Evaluation of I-94 Control Section 82021; Detroit Industrial Expressway from Rawsonville Road (Washtenaw-Wayne County Line) to Hannan Road	F. Copple	07-64	R-39 F-7 (14)
466	Application and Performance of Epoxy Sealants on Bridge Deck and Walks: Houghton-Hancock Lift Bridge (B01 of 31012)	A. J. Permoda R. H. Merrill	08-64	R-62 B-66
467	Preservative Treatments for Timber Piling: Two-Year Inspection, Third Progress Report	B. W. Pocock W. W. Miller	08-64	R-61 NM-38 R-61 NM-47
468	Contract Resealing of Transverse Joints: Sealing and Performance of 1963 Maintenance Projects	D. F. Simmons J. E. Simonsen	09-64	R-36 G-4(12)
469	Profilometer Measurement of Bridge Roughness, Fifth Progress Report	C. D. Church	09-64	R-61 F-65
470	Soil-Aggregate Cushions for Prevention of Reflection Cracking of Resurfaced Pavements, Second Progress Report	F. Copple	09-64	R-62 F-70
471	Evaluation of Telespar Tubing for Use as Highway Sign Supports	J. E. Simonsen	09-64	R-63 NM-111
472	Second Annual Inspection of Epoxy Sealer Between the Concrete and Bituminous Wearing Surface of the Approach Deck Spans of the International Bridge at Sault Ste Marie (B01 of 17034)	A. J. Permoda	09-11-64	R058 F-53(2)
473	Early Scaling of Concrete Pavement: US-41 Marquette Bypass (Construction Project U 52042E, C8)	M. G. Brown R. H. Merrill	11-64	R-64 B-75
474	Galvanized (Zinc Alloy) Steel Base Plates for Joints	O. L. Lindy	09-22-64	R-63 NM-98
475	Experimental Use of Goodyear "Pliopave L-170" Latex Additive in Single Seal of Existing Sealed Shoulders on I-96 near Ionia (Construction Project Group MR-4 SC-5A, Control Section 34044)	D. F. Simmons	09-22-64	R-64 G-136
476	Application and First Inspection of "Epoxeal" Penetrating Sealer on Lansing Area Bridge Decks	R. H. Merrill F. J. Bashore	09-22-64	R-64 G-136
477	Test Application and First Inspection of Koppers Concrete Sealer on Northbound I-496 over GTW RR (X06 of 33045)	F. J. Bashore R. H. Merrill	09-22-64	63 NM-92
478	Alleged Damage to Dwelling of A.T. Schmidt, Vassar, Michigan	C. J. Arnold	10-08-64	64 F-79
479	Summary of Laboratory Evaluation of "Silexore" Protective Coatings for Concrete	M. G. Brown	10-19-64	R-63 NM-101
480	1963 Performance Tests of White and Yellow Traffic Paint: (Including Cooperative Tests in Detroit and Wayne County)	A. J. Permoda R. L. Snider M. H. Janson	11-64	R-47 G-36(16) and (16a)
481	Thermoplastic Pavement Marking on W. P. Chrysler Freeway (Projects BI 82111C, C24; BI 82251C, C34)	A. J. Permoda	11-09-64	R-47 G-36(17a)
482	Field Installation and Inspection of Polymer Plastic Marker Posts	F. J. Bashore	10-23-64	R-63 NM-87
483	Paint Peeling Off Pressure-Treated Wood Posts	A. J. Permoda	10-28-64	R-62 G-114

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
484	Performance of Extruded Neoprene Joint Sealer: I-96 from Waverly Road to M-99 (Construction Project EBACI 33083A C1)	C. C. Rhodes J. E. Simonsen D. F. Simmons	11-64	R-62 G-116
485R	Evaluation of Hook Bolts for Longitudinal Bulkhead Construction Joints	J. E. Simonsen P. Milliman	01-65	R-58 F-50
486	Repair of Rubber Pad Railroad Crossing (NYC RR Crossing US 23 South of Dundee)	J. E. Simonsen	01-65	R-58 F-50
487	Construction and Sealing of Transverse Contraction Joints Containing Acme Load Transfer Assemblies	J. E. Simonsen	12-16-64	R-39 F-1(3)
488	Study of Defective Concrete in Structures on US-2 West of Watersmeet (B02, B03, B04 of 27023B)	R. H. Merrill	12-09-64	R-64 B-77
489	Progress Report on Evaluation and Application Study of General Motors Corporation Rapid Travel Profilometer	L. T. Oehler P. Milliman	12-64	R-62 F-73 Control Section No. 86548
490	Determination of Air Content in Hardened Concrete by Gamma-Ray Transmission	B. W. Pocock W. W. Miller	09-67	62 H-8
491	Progress Report on Salt Stabilized Sections of M-46 (Howard City to Newaygo): 1964 Surveys and Testing	R. C. Mainfort	01-14-65	R-57 E-15
492	Profilometer Measurement of Bridge Roughness, Sixth Progress Report	C. D. Church	02-65	R-61 F-65
493	Performance of Hot-Poured and Cold-Applied Joint Sealers	C. C. Rhodes L. T. Oehler	02-65	R-62 G-116
494	Further Development and Evaluation of The Michigan Nuclear Gage	R. C. Mainfort J. H. DeFoe	04-65	R-61 E-22
495	Field Evaluation of the Ohmart Nuclear Weighing System	F. Copple	03-65	R-64 E-32
496R	Evaluation of Two-Component, Cold-Pour Joint Sealing in I-75 Rest Areas: Construction Projects I 25032C, C7; BI 73171C, C19; I 09034C, C10 Federal Designations I-75-2(89), I-75-2(90), I-75-2(91)	D. F. Simmons	03-65	R-62 G-138
497R	Studies of Corrosion Resistance of Dowel Bars	A. J. Permoda O. L. Lindy	05-65	52 G-64
498	Automatic Weighing of Vehicles in Motion and Collection of Traffic Data by Electronic Methods: Report on Interim Experimental Program Designated "Post Part A"	P. Milliman	02-65	52 F-26
499	Anti-Glare Fence Specifications	B. W. Pocock	02-24-65	61 NM-58
500	Operating Manual for the Michigan Nuclear Soil Density-Moisture Gage	J. H. DeFoe	03-65	61 E-22
501	Proprietary Surface Conversion Treatments for Aluminum	A. J. Permoda	03-04-65	64 G-137
502	Snap-In Reflector Buttons	L. T. Oehler	03-19-65	65 N-132
503	Blink-A-Lite "Caution" Sign	M. H. Janson	03-19-65	64 NM-121
504	Effect on Bridges of Proposed Changes in Permissible Truck Loads	L. T. Oehler	03-65	55 F-45

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
505	Experimental Installation of Chrome-Alloy-Steel Dowels: I-196 from the Grand River to Fuller Avenue, Grand Rapids, Federal Designation I 196-5(47) 72	J. E. Simonsen	04-65	63 F-75
506	Progress Report on 1964 Traffic Paint Performance Tests	A. J. Permoda	04-16-65	47 G-36(17)
507	Test Rod Skidometer Data for the 1964 Test Year	P. M. Schafer	04-65	54 G-74
508	Protective Coatings for Structural Steel, Third Progress Report	A. J. Permoda R. L. Snider	07-65	49 G-50
509	Sampling and Analysis of Artesian Water in Caisson No. 4 on Fisher Expressway (I 75) Crossing Rouge River in Detroit (B01 of 82194G, C1)	M. G. Brown	04-15-65	62 G-112
510	Survey of Substructures on Edsel Ford Freeway	O. L. Lindy	05-14-65	63 B-69(4)
511	Rust Dissolver and Manganese-Phospholene No. 7	A. J. Permoda	04-14-65	65 NM-133
512	Laboratory Test Results on Safe-Ray Glass Beads (High Intensity) for Pavement Marking	A. J. Permoda	04-16-65	47 G-36(18b)
513	Performance of Aggregate from the Clarence Sweet Pit (No.3-65) in I-196 Pavement North of South Haven	E. A. Finney	05-13-65	64 A-23
514	Plastic "Men Working " Sign	M. H. Janson	04-20-65	64 NM-127
515	Plastic Signal Lenses	M. H. Janson	04-21-65	54 G-73(4)
516	Inspection of Projects Containing Selected Big Cut Pit Aggregate	F. Copple	04-27-65	59 A-19
517	Dynamic Aspects of Vehicle Size and Weight	E. A. Finney	05-65	55 F-42
518	Evaluation of "Ethaforam" Proposed Joint Sealer	M. G. Brown	05-17-65	64 NM-126
519	Evaluation of "EpoXiment" Admixture for Mortar or Concrete	R. H. Merrill	05-17-65	64 NM-117
520R	Survey of I-94 Bridge Crossing Clinton River Cutoff Canal (B01 of 50111)	F. Copple	06-25-65	65 B-78
521	Skid Proofing Treatments at South Cedar Street (US-127) Intersections with Holmes Road and Baker Street in Lansing	R. H. Merrill	06-01-65	54 G-74
522	Structural Evaluation of Steel Snow Fence Posts	H. C. Brunke	06-01-65	65 F-83
523	Pavement Evaluation of I-94 Control Section 82022: Detroit Industrial Expressway from Ozga Road to US-24 Telegraph Road	F. Copple	06-65	39 F-7(14)
524	Sixth Progress Report on Special Painting of Steel Bridge Girders under Project: Bridges and Bridge Railings, Construction and Maintenance	A. J. Permoda	06-23-65	49 G-50(4)
525	Failures of Two-Component, Cold-Pour Joint Sealant in New Pavement Construction	F. J. Bashore	06-21-65	62 G-116
526	Summaries of Michigan Pavement Roughness: 1963-64 Test Program	P. M. Schafer	06-65	47 F-15
527R	Field Evaluation of Styrofoam as Insulation Against Frost Effects in Flexible Pavement Foundation Components	E. C. Novak, Jr. R. C. Mainfort	10-65	64 E-31
528	Met-Fiber Joint-Forming Material	L. T. Oehler	06-22-65	63 NM-102

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
529	Use of a Silicone Admixture in Bridge Deck Concrete: Coe Road over US-27, North of Alma (MB S01 of 37013C, C13)	R. H. Merrill C. A. Zapata	09-65	60 B-49 61 B-58 63 G-123
530	Inspection of Neoprene Preformed Sealant Failures in Battle Creek Projects (I 13033D, C8 and U 13121E, C2, C3)	F. J. Bashore	07-01-65	62 G-116(1) & (2)
531	Evaluation of "Rhap-Trol" Herbicide Spray System	M. H. Janson	06-30-65	65 NM-141
532	Progress Report on Test Applications of 3M's "Instant Set" Paint Striping	A. J. Permoda	07-06-65	65 NM-138
533	Inspection of Pavement Joint Blowup on US-131 North of Grand Rapids (Construction Project 41-90, C4)	F. Copple	07-06-65	39 F-7(14)
534	(Adjus-To-Grade" Manhole Casting (National Utility Products Co.)	C. J. Arnold	06-29-65	65 NM-143
535	Experimental Shoulder Stabilization on US-23 North of Alpena (MN 04032, C6)	R. C. Mainfort	07-09-65	62 E-25
536	Joint Failures on Eastbound I-94, Parma to Jackson (Construction Project 38-48, C9)	J. E. Simonsen	07-22-65	39 F-7(14)
537	Mercury Vapor "Super Lumen" Lights (Jewel Electric Products Inc.)	M. H. Janson	07-23-65	63 NM-110
538	Damping Bridge Vibration During Construction Widening	G. R. Cudney	07-26-65	65 F-84
539	Pavement Evaluation of I-94 Control Sections 81041, 81062, and 81063: Detroit Industrial Expressway from Carpenter Road to Rawsonville Road (Washtenaw-Wayne County Line)	F. Copple	06-65	39 F-7(14)
540	Aluminum Delineator Posts (Reynolds Metals Co.)	H. C. Brunke	08-05-65	65 NM-145
541	US-127 Blowup South of Jackson (Construction Project 38-7, C5)	J. E. Simonsen	09-03-65	39 F-7(14)
542	Profilometer Measurement of Bridge Roughness, Seventh Progress Report	C. D. Church	11-65	61 F-65
543	Evaluation of Expansion-Contraction Joint Construction Methods: M-153 North of Ypsilanti (Construction Project F 81121A, C2)	J. E. Simonsen	09-65	60 F-58(1) 59 NM-8
544	Depth of Nuclear Gage Influence in Subbase Testing	R. C. Mainfort	08-25-65	61 E-22
545	Joint Blowup, I-94 East of US-127 Bypass, Jackson County	F. Copple	09-27-65	39 F-7(14)
546	Testing of "Coherex" Emulsified Oil	R. C. Mainfort	09-24-65	65 NM-149
547	Preservative Treatments for Timber Piling: Three Year Inspection, Fourth Progress Report	B. W. Pocock W. W. Miller	09-65	61 NM-38 61 NM-47
548	Fifth Progress Report on Salt Stabilized Sections of M-46 (Howard City to Newaygo): 1965 Surveys and Testing	R. C. Mainfort	9-24-65	57 E-15
549	Lasers—Theory, Technology, and Applications: Report on a University of Michigan Special Summer Short Course (May 10-21, 1965)	W. L. Frederick	10-65	63 G-124
550	Highway Quality Control Program This Report was Withdrawn in January 1966 Prior to Final Publication	B. W. Pocock C. A. Zapata L. F. Holbrook		63 G-123
551	X-Ray Technology and Highway Research: Report on an Equipment Symposium: Chicago, June 7-11, 1965	J. T. Ellis	10-65	63 G-124

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
552	Testing of "Chempact" and "Road Packer"	R. C. Mainfort J. T. Ellis	10-06-65	47 E-12
553	SS-22 Soil Stabilizer	R. C. Mainfort	10-05-65	65 NM-151
554	Pavement Characteristics at Scales--1965 Truck Weight Study	F. Copple	10-12-65	65 F-86
555	Inspection of Pavement Joints on US-127, Hillsdale County	F. Copple	03-01-66	39 F-7(14)
556	"Niteliner" Striping Application on Edsel Ford Freeway (I-94)	A. J. Permoda	10-18-65	47 G-36 (18a)
557	Grade Separation Carrying Eight Mile Rd over the Couzens Expressway (I-696)	A. J. Permoda W. L. Frederick	10-18-65	62 G-122
558	Investigation of Limestone Coarse Aggregate from the Waterville, Ohio, Quarry of the France Stone Company	C. D. Church G. R. Cudney	11-65	64 A-22
559	1964 Performance Tests on White and Yellow Traffic Paints, Including Cooperative Tests in Detroit and Wayne County	A. J. Permoda R. L. Snider M. H. Hanson	11-65	47 G-36(17) & (17a)
560	Progress Report on Thermoplastic Pavement Markings on W. P. Chrysler Freeway (Projects BI 82111C, C24; BI 82251C,C34)	A. J. Permoda	11-08-65	47 G-36 (17a)
561R	Prestressed Concrete Beam Construction Practice	C. J. Arnold	03-66	62 F-72
562R	Machine Finishing of I-96 Bridges over the Grand River (B01 and B02 of 2315A)	H. C. Brunke	12-65	62 F-68
563	Performance of Joint Sealants Used in 1964-65 Michigan Construction	J. E. Simonsen F. J. Bashore	12-65	62 G-116
564	Second Annual Inspection of Bridge Decks Sealed with "EpoXeal" and "Concrete Sealer"	R. H. Merrill	12-30-65	63 NM-83 63 NM-92
565	Comparison of Fiber Board and Plywood for Use in Roadside Sign Panels	J. E. Simonsen	02-66	65 NM-142
566R	Slab Faulting Measurements at Blowup Repairs on I-94 near Jackson	E. A. Finney	02-11-66	39 F-7(14)
567	1965 Failure and Repair of Continuously Reinforced Experimental Pavement: I-96 from Portland Road to M-66	J. E. Simonsen	02-04-66	57 F-46
568	Development of a Neutron Gage for Determination of Mixing Efficiency of Central Mix Concrete Plants	P. Milliman	12-66	61 H-7
569	Corrosion Performance of Aluminum Culverts, First Progress Report	J. T. Ellis J. E. Simonsen	03-66	60 NM-26
570	Summaries of Michigan Pavement Roughness: 1965 Test Program	P. T. Luce	06-66	47 F-15
571R	Evaluation of Stamp Sand as a Substitute for sand Subbase	R. C. Mainfort E. C. Novak, Jr.	06-20-66	54 E-14
572	Highway Quality Control Program: Statistical Parameters	L. T. Oehler C. A. Zapata	06-66	63 G-123
573	Accident Damage to Aluminum and Steel Guard Rails	J. E. Simonsen	03-28-66	54 F-36
574	ASTM A 242 Corrosion Resistant Steel (Mayari-R) Panels in Field Exposure Tests on Eight Mile Road Structure in Detroit	A. J. Permoda	04-15-66	62 G-122

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
575	Special Cores from Deck and Beams of M-21 Structure 3.7 Miles West of Ada (X01 of 41043)	M. G. Brown	04-01-66	63 B-69
576	Final Report on Test Applications of 3M's "Instant Set" Paint Striping	A. J. Permoda	04-15	65 NM-138
577	First Progress Report on 1965 Traffic Paint Performance Tests	A. J. Permoda	04-15-66	47 G-36(18)
578	Evaluation of a Rubber Pad Railroad Crossing	J. E. Simonsen	04-66	64 G-134
579	Epoxy and Cement-Type Compounds for Grouting	C. J. Arnold M. G. Brown	04-66	65 F-85
580	Review of the Department's Experience with Vinyl Type Coatings for Bridge Structural Steel	A. J. Permoda	04-25-66	49 G-50
581	Sign Brightness in Relation to Legibility	T. M. Allen G. M. Smith M. H. Janson F. N. Dyer	08-66	62 G-118
582	An Appraisal of Transverse Joint Base Plates	E. A. Finney	06-66	39 F-7 (14)
583	Acceptance of Pavement on the Basis of Modulus of Rupture Tests (7-day, 5.5 Cement Factor, 9-in. Pavement)	C. D. Church	06-67	63 G-123
584	Fracture-Plane Deterioration of Concrete Bridge Decks: Bridge S05 of 63022, Wixom Road over I-96	G. R. Cudney	05-66	61 B-58
585	Summaries of Michigan Pavement Skid Resistance: 1965 Test Program	P. M. Schafer	06-66	54 G-74
586	Application for Instrumental Methods for Evaluating Highway Materials: First Progress Report—Determination of Amount of "Plastiment A" Retarder in Hardened Cement	W. L. Frederick J. T. Ellis	11-66	63 G-124
587	Economic Considerations in the Use of Corrosion-Resistant A 242 Structural Steel for Bridge Structures	L. T. Oehler	06-66	62 G-122
588R	Design Considerations for Continuously Reinforced Concrete Pavement: Proposed I-696, Lahser Road to Eleven Mile Road. Report Withdrawn. See Research Report Number R-609	F. Copple		R-61 F-64 (1)
589R	Design Considerations for Continuously Reinforced Concrete Pavement: Proposed I-275, Buhl Road to Schoolcraft Road. Report Withdrawn. See Research Report Number R-609	F. Copple		R-61 F-64 (1)
590R	Design Considerations for Continuously Reinforced concrete Pavement: Proposed I-96, Haggerty Road to Ambassador Bridge Report Withdrawn. See Research Report Number R-609	F. Copple		R-61 F-64 (1)
591	Corrosion-Resistant Dowel Bars	E. A. Finney A. J. Permoda	08-66	52 G-64
592	Compaction Control of a Major Construction Project With the Michigan Nuclear Gage: US-127 Relocation, Holt Road to I-96 (F 33035B, C1 BI 33084A, C21)	J. H. Defoe R. C. Mainfort	11-66	61 E-22
593	Photometric Test for Reflective Materials	M. H. Janson G. M. Smith	07-66	51 G-54
594	Presstite Tape for Protection of New Joints Before Sealing	F. Copple	08-03-66	66 NM-156

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
595	"Fiberglas" Reinforced Plastic Rods	G. R. Cudney	08-08-66	66 NM-155
596R	Degradation of Base Course Aggregates	E. C. Novak, Jr. R. C. Mainfort	09-66	64 E-30

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
597	Statistical Inspection Plans for Conformance of Prefomed Joint Sealants: A Preliminary Discussion This Report Number was Assigned to a Draft Text for Administrative Review. Final Text was Published under a Later Report Number	C. D. Church		63 G-123
598	Base Course Stabilization with Asphalt Emulsion: US-131 South of Cadillac (Construction Project F 83031A, C6)	E. C. Novak, Jr. R.C. Mainfort	09-66	66 E-35
599R	Soil-Aggregate Cushions for Prevention of Reflection Cracking of Resurfaced Pavements, Third Progress Report	F. Copple	10-66	62 F-70
600	Evaluation of the Speedy Moisture Tester	E. C. Novak, Jr. L. D. Searcy	10-66	62 E-26
601	Break-Away-Sign Supports	C. J. Arnold	09-19-66	54 G-73
602	First Progress Report on Evaluation of Experimental Paint Coatings for Bridge Steel on S01 of 33031, S02 of 33032, S07 of 38131	A. J. Permoda	11-02-66	49 G-50(4) & (5)
603	BRIDGE Strain Histories and Effects on Steel Bridge Stringers: Discussion of a Highway Planning and Research Project "Effect of Loadings on Bridge Life" Conducted in Cooperation with the U. S. Department of Commerce-Bureau of Public Roads Not Released for Publication, Subject To Review and Approval by the U.S. Bureau of Public Roads	L. T. Oehler G. R. Cudney	10-66	62 F-71
604	Investigation of Retarder in Bridge Deck Concrete, B04 of 82053A, C39 (US-24 over Upper Branch of Rouge River, Detroit)	M. G. Brown	10-10-66	66 B-80
605	"Surface Modified 1M" Metal coatings (Dow Chemical Company	A. J. Permoda	09-12-66	66 NM-157
606	"Fiberglas" Reinforced Plastic Rods	J. E. Simonsen	09-14-66	66 NM-155
607	Deck Rippling on the I-75 Rouge River Bridge (B01 of 82194G, C7), Second Progress Report	L. T. Oehler G. R. Cudney	10-66	66 F-88
608	Deck Rippling on Various Michigan Bridges, Third Progress Report	C. J. Arnold	10-66	66 F-88
609	Procedure for Design of Continuously Reinforced Concrete Pavements	F. Copple	10-66	61 F-64(1)
610	Impact Tests of Breakaway Light Poles	J. E. Simonsen F. DeRose	10-66	65 G-140
611	1965 Performance Tests on White and Yellow Traffic Paints (Including Cooperative Tests in Detroit and Wayne County)	A. J. Permoda G. C. Sigsby M. H. Janson	11-66	47 G-36(18) & (18a)
612	Michigan's Experience with Nuclear Gages for Measuring Soil Compaction	R. C. Mainfort	11-66	61 E-22

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
613	Flashing Arrow-Bar Traffic Control Signs: A Report of Comparison Testing	F. Copple P. Milliman	11-66	66 G-145
614	Testing of Waste Lime from Bay City	R. C. Mainfort	11-17-66	58 E-17
615	Michigan's System for Weighing, Dimensioning, and Classifying Vehicles in Motion	P. Milliman	11-66	52 F-26
616	Artesian Flow of Sulfide Water: I-75 over US-25 (I 82191J, C25)	M. G. Brown	12-08-66	66 G-150
617	"Parlon" Based Curing and Sealing Compound, First Progress Report	H. L. Patterson	12-07-66	63 NM-96
618	Field Test Applications of "Speed Crete" Patching Mixtures	M. G. Brown	12-09-66	65 NM-140
619	Field Tests of Epoxy Grout and Expansion Anchors: Supplement to Research Report No. R-579	C. J. Arnold M. G. Brown	01-67	65 F-85 (1)
620	Safety and Economic Considerations in Use of Corrosion-Resistant Steel for Bridge Structures	L. T. Oehler A. J. Permoda	01-67	62 G-122
621	Investigation of Concrete Overruns on I-69 Two-Span Continuous-Type Bridges: Pearl Beach Road Over I-69 (S11 of 12033A)	E. L. Marvin	02-67	66 F-89
622	Investigation of Pavement Damage Caused by Gasoline Truck Fire on Northbound US-23 near Fenton (Construction Project 25031, C2)	H. L. Patterson	01-30-67	66 B-83
623	Investigation of Concrete Pavement Cracking on the Southbound I-75 Fisher Freeway (Sta. 987+00 to 990+00, Construction Project BI 82194E, C4)	H. L. Patterson	02-20-67	66 B-81
624	Stabilization of Granular Base Materials with Rock Salt	R. L. Greenman R. C. Mainfort	03-67	57 E-15
625	Performance of Joint Sealants Used in 1964, 1965, and 1966 Michigan Construction	F. J. Bashore	03-67	62 G-116
626	"Confilm" Spray-On Film for Control of Evaporation From Fresh Concrete	E. A. Finney	04-20-67	67 NM-166
627	Failure of Center-Mount Delineators: A Summary of Research Laboratory Observations	M. H. Janson	05-67	51 G-54(4)
628	First Progress Report on 1966 Traffic Paint Performance Tests	A. J. Permoda	03-30-67	47 G-36(19)
629	Driving Performance of Aluminum Delineator Posts	E. A. Finney	03-30-67	65 NM-145
630	Laboratory Testing of Bituminous Base Course Samples: I 75 North of Wolverine (Construction Project EBI 16093), C3RN	R. C. Mainfort E. C. Novak	03-31-67	67 E-40
631	Summaries of Michigan Pavement Skid Resistance: 1966 Test Program	P. M. Schafer	04-67	54 G-74
632	Summaries of Michigan Pavement Roughness: 1966 Test Program	P. T. Luce	04-67	47F-15
633	Method of Test and Equipment for Measurement of Pavement Skid Resistance	No Author Listed	04-67	54 G-74
634	Final Report on Michigan Experimental Transverse Joint Project	J. E. Simonsen	09-67	60 F-58
635	Demonstration of Schmidt Post Driver	L. T. Oehler	04-28-67	65 NM-145

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
636	Low Compressive Strength of Concrete Pavement Cores from the Eastbound I 75-Fisher Freeway (Sta. 1101+07 to 1101+70, construction Project BI 82194H, C21, Part1)	H. L. Patterson	05-03-67	66 B-82
637R	Effectiveness of Sawed-Sealed Longitudinal Joints Between Bituminous Shoulders and Rigid Pavement in Reducing Longitudinal Shoulder Cracking: First Progress Report	C. A. Zapata	08-67	66 E-37
638	The Effects of Loadings on Bridge Life	G. R. Cudney	01-68	62 F-71
639	Mercury Vapor "Super Lumen" Lights (Jewel Electric Products Inc.)	M. H. Janson	06-02-67	63 NM-110
640	Static Field Tests of Kwik-Bolt and Phillips Stud-Type Concrete Anchors	C. J. Arnold	06-67	66 NM-161
641	Application of Instrumental Methods for Evaluating Highway Materials: Second Progress Report; Detection and Determination of Ground, Cured Scrap Rubber in Hot-Poured Joint Sealers	W. L. Frederick R. J. Matel	12-67	63 G-124
642	Effect of De-Icing Chemicals on Air-Entrained Concrete at Early Ages	P. T. Luce	07-67	57 B-41
643	Damaged Impellers for Storm Water Pumps	C. J. Arnold	07-06-67	67 G-155
644	Report on Witcogard Rustproofer for Guard Rails	L. T. Oehler	07-18-67	63 NM-90
645	Fast Drying Traffic Paints	L. T. Oehler		47 G-36 (20a)
646	Inspection Report of Field Applications of "Speed Crete" Patching Mixtures	M. G. Brown	08-04-67	65 NM-140
647	Field Evaluation of Six-Volt and Twelve-Volt Flashers	G. M. Smith M. H. Janson	08-67	62 G-117
648	Use of a Concrete Sealant on the High Level Bridge, I-75, Detroit (B01 of 82194G)	H. L. Patterson	08-04-67	63 NM-96
649	Michigan Investigation of Soil Aggregate Cushions and Reinforced Asphaltic Concrete for Preventing or Reducing Reflection Cracking of Resurfaced Pavements	F. Copple L. T. Oehler	01-68	54 D-20 (3) & 62 F-70
650	Research Laboratory Division Operations	L. T. Oehler	07-67	
651	Investigation of Foreign Material Embedded in the Continuously Reinforced Concrete Pavement of the Seaway Freeway (I 75) Construction Project I82194A	L. T. Oehler	08-30-67	61 F-64 (1)
652	Investigation of Rigid Fuse Plates for Use on Breakaway Signs: Progress Report	E. L. Marvin	11-67	65 G-140
653	Progress Report on "Terbec C-7" Soil Stabilizer	R. C. Mainfort	09-67	67 E-41
654	Extrusion of Neoprene Seals from Expansion Joints in Concrete Pavement	F. J. Bashore	09-67	62 G-116
655	U.S. Rubber "Uniroyal" Advertising Sign, I-94, Detroit	G. M. Smith	10-67	54 G-73
655A	U.S. Rubber "UNIROYAL" Advertising Sign, I-94, Detroit An addendum to Research Report No. R-655	L. T. Oehler	6-19-68	54 G-73

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
656	1966 Performance Tests on White and Yellow Traffic Paints (Including Cooperative Tests in Detroit and Wayne County)	A. J. Permoda A. R. Gabel M. H. Janson	10-67	47 G-36(19) &(19a)
657R	Investigation of Concrete Pavement Cores from the Northbound I 75 Freeway	H. L. Patterson	12-67	67 B-85
658	Development of a One-Point Cone Test for Determining Maximum Density of Granular Materials	R. C. Mainfort	12-67	66 E-34
659	The Effect of Shearing Deformations on Pull-Out Resistance of Steel Dowels Embedded in Concrete	E. L. Marvin	12-67	39 F-1(9)
660	Comments on the Systems and Procedures Section Report Concerning Combining the Testing Laboratory and the Research Laboratory	L. T. Oehler	12-67	
661	Seventh Progress Report on Special Test Painting on M-78 Bridge Structural Steel	L. T. Oehler	12-67	49 G-50(4)
662	"Parlon" Based Curing and Sealing Compounds, Second Progress Report	H. L. Patterson	03-68	63 NM-96
663	Evaluation of "Penepriime" as a Stabilizing Agent for Aggregate Shoulders	R. C. Mainfort J. H. DeFoe	01-68	64 E-33
664	A Progress Report on the Evaluation and Application Study of General Motors Rapid Travel Road Profilometer	J. R. Darlington P. Milliman	01-68	62 F-73
665	3M High-Intensity Reflective Sheeting Delineator Failure	L. T. Oehler	02-68	54 G-73
666	Application of Instrumental Methods for Evaluating Highway Materials - Third Progress Report: Pyrolysis Gas Chromatography	J. T. Ellis W. L. Frederick	08-68	63 G-124
667	Repair of Plastic Shrinkage Cracks in the Deck of the Nine Mile Road Bridge Over I-75	H. L. Patterson	03-68	59 F-53(3)
668	Procedures for Repairing Continuously Reinforced Concrete Pavements	J. E. Simonsen	03-68	57 F-46 61 F-64 61 F-64(1)
669	Final Progress Report on Polymer Plastic Marker Posts	F. J. Bashore	12-19-67	63 NM-87
670	Performance of Joint Sealants Used in 1964 Through 1967 Michigan Construction, Third Annual Report	F. J. Bashore	04-68	62 G-116
671	Study of Frost Action in Class AA Shoulders Near Pontiac	E. C. Novak, Jr.	04-68	63 E-27
672	Final Report on Test Applications of 3-M's "Green Lite or Liquid Instant Set" Paint Striping	L. T. Oehler	05-01-68	65 NM-138(1)
673	Investigation of Low Flexural Strengths on Project U 17032-005	H. L. Patterson	05-05-68	67 B-86
674	Summaries of Michigan Pavement Skid Resistance - 1967 Test Program	P. M. Schafer	07-68	54 G-74
675	Summaries of Michigan Pavement Roughness - 1967 Test Program	R. L. Felter P. T. Luce	05-68	47 F-15
676	Second Inspection Report of Field Application of "Speed Crete" Patching Mixtures	M. G. Brown	06-19-68	65 NM-140
677	The Effect of Slab Warpage on Stresses at Contraction Joints	E. L. Marvin	08-68	39 F-1(8)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
678	Report on Experimental Raised Traffic Markers on I-75 in Detroit	A. J. Permoda	07-01-68	67 G-159
679	Corrosion Performance of Aluminum Culverts, Second Progress Report	J. T. Ellis	12-68	60 NM-26
680	Pavement Damage Related to Tire Studs	F. Copple		65 F-82
681	Evaluation of "Protecto + " Styrene-Foam Concrete Cylinder Molds	H. L. Patterson	09-09-68	676 NM-188
682	Latex-Cement Coating for Metal (Dow Co. SM-200)	A. J. Permoda	09-09-68	66 NM-157
683	Evaluation of Sawed-Sealed Longitudinal Joints Between Bituminous Shoulders and Rigid Pavement as a Means of Reducing Longitudinal Shoulder Cracking	C. A. Zapata	09-68	66 E-37
684	Feasibility of Portland Cement Concrete Shoulder Construction	L. T. Oehler	10-04-68	68 F-101
685	Stabilization of Base Course Aggregates with Rock Salt	R. C. Mainfort	01-69	57 E-15
686	Expansion Joint Spalling on I-75	L. T. Oehler	10-25-68	39 F-7(14)
687	Protection of Substructure Concrete from Staining by A 588 Type Steel During Construction	A. J. Permoda	10-28-68	67 G-158
688	Anchorage Resistance of Standard Hook-Bolts	M. A. Chiunti	11-18-68	54 F-35
689	Evaluation of Octopus Safety Marker Model No. OC-5-30-64	G. M. Smith	11-04-68	68 NM-198
690	Pull-Out Tests on RS-9 Expansion Anchors	L. T. Oehler	12-27-68	59 F-52
691	Evaluation of Electrostatic Spray Equipment in Painting Highway Steel	L. T. Oehler	01-20-69	66 NM-162
692	Methods For Evaluating Deterioration of In-Service Reflective Sheeting Signs	M. H. Janson G. M. Smith	04-69	68 G-160
693	Joint Spalling on State Project BI 49025G, C22, Mackinac County on I-85 from Junction with M-134 Northerly 6.9 Miles	L. T. Oehler	08-26-68	39 F-7(14)
693 ?	Joint Repairs on M 59 near Howell	L. T. Oehler	02-07-69	39 F-7(14)
694	Hot Mix Component-Recordation Evaluation	C. D. Church	03-69	68-C-12
695	Evaluation of Experimental Signs	M. H. Janson	03-69	68 G-166
696	Protective Coatings for Highway Metals: Fourth Progress Report: Protective Coatings for Structural Steel	A. J. Permoda A. R. Gabel	04-69	49 G-50(5)
697	Summaries of Michigan Pavement Roughness; 1968 Test Program	R. L. Felter	05-69	47 F-15
698	Progress Report on Evaluation of a Rubber Pad Railroad Crossing	J. E. Simonsen	04-69	64 G-134
699	Application of Thermoanalytical Techniques to Highway Materials	L. T. Oehler	06-26-69	69 G-169
700	Pavement Cracking on I-75 in Hamtramck	R. L. Felter	05-02-69	39 F-7(14)
701	Permafused Vinyl Coated Chain Link Fence	J. L. McKenna F. J. Bashore	06-03-69	69 NM-228

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
702	Survey of Substructures on Edsel Ford Freeway	R. L. Felter	05-19-69	63 B-69(4)
703	Continuously Reinforced Concrete Pavement: Welded Bar Mat Reinforcement	J. E. Simonsen	06-69	61 F-64(1)
704	Summaries of Michigan Pavement Skid Resistance; 1968 Test Program	Physical Research Unit	08-69	54 G-74
705	Reflective Sheeting Deterioration on Plywood	M. H. Janson	06-69	69 G-170
706	Third Progress Report on Thermoplastic Pavement Markings on W. P. Chrysler Freeway	A. J. Permoda	06-25-69	47 G-36(17a)
707	Investigation of Alleged Residential Vibration Damage	C. J. Arnold	06-69	69 F-106
708	Proposed Highway Research Laboratory	L. T. Oehler	07-69	Not Listed
709	Evaluation of Styrofoam as Insulation Against Frost Action in a Flexible Pavement Foundation	E. C. Novak, Jr. R. C. Mainfort	08-69	64 E-31
710	Evaluation of Lane Tie Bolts for Slip-Form Paving	L. T. Oehler	07-01-69	69 F-109
711	Performance of Michigan's Postwar Concrete Pavement	L. T. Oehler L. F. Holbrook	06-69	39 F-7(15)
712	Polyethylene Center Strip	J. E. Simonsen	07-17-69	68 NM-221
713	"Alert Reflective Liquid" (Cataphote Corp.)	A. R. Gabel	08-04-69	67 NM-172
714	Research Laboratory Operations	L. T. Oehler	01-69	
715	Evaluation of Five Commercial Fast-Setting Hydraulic Patching Mortars	H. L. Patterson	10-69	65 NM-140 65 NM-148 67 NM-170 67 NM-173 67 NM-180
716	Protection of Substructure Concrete from A588 Steel Staining by Use of an Aluminum-Pigmented Coating	L. T. Oehler	08-69	67 G-158
717	Corrosion-Resistant Guardrail	L. T. Oehler	09-11-69	60 G-102 62 G-113 62 G-122
718	Joint Load Transfer Test Road to Evaluate Acme Load Transfer Assemblies, Plastic Coated Dowels, and End-of-Pour Construction Joint Assemblies	L. T. Oehler	10-23-69	67 F-95 68 F-104
719	Prediction of Subjective Response to Road Roughness Using the General Motors-Michigan Department of State Highways Rapid Travel Profilometer	L. F. Holbrook	07-70	67 F-92
720	1968 Performance Tests on White and Yellow Traffic Paints (Including Cooperative Tests in Detroit and Wayne County)	A. J. Permoda A. R. Gabel M. H. Janson	11-69	47 G-36(21) & (21a)
721	Summary of Highway Department Concern in Connection with the Use of Tire Studs	L. T. Oehler	12-69	65 F-82
722	Aluminum-Coated (Hot Dipped) Bolts for Bridge Railing Posts	A. J. Permoda	11-26-69	60 NM-27, (60 G-102)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
723	Determination of Cement Content of Hardened Slag Concrete	W. J. Frederick J. T. Ellis V. J. Troms R. J. Matel	07-70	67 B-84
724	Propane Warning Lights	M. H. Janson	12-12-69	69 TI-4
725	Investigation of Pavement Damage by Gasoline Truck Fires to M-20, (Control Section 56023), City of Midland and US-27 (Control Section 37017, C4), South of Mt. Pleasant	H. L. Patterson	01-70	69 TI-2
726	Performance of Latex-Modified Mortar on Concrete Bridge Decks	L. T. Oehler	01-15-70	57 B-39
727	Application of Instrumental Methods for Evaluating Highway Materials, Fourth Progress Report: Gas Chromatography (II)	J. T. Ellis W. L. Fredrick	07-70	63 G-12
728	A Coordinated Highway Data System for Michigan, (Development of Computer-Based Storage and Retrieval System for State Highway Road & Bridge Construction Data)	C. D. Church	09-70	65 G-139(2)
729	Urethane Foam Insulation of Bridge Concrete	C. A. Zapata F. J. Bashore W. E. Casey	02-70	69 TI-5
730	Use of Silicone Admixture in Bridge Deck Concrete	H. L. Patterson	04-70	60 B-49(3)
731	Evaluation and Application Study of the General Motors Corporation Rapid Travel Profilometer	J. R. Darlington	10-70	62 F-73
732	Spun-Concrete Light Poles, I-96 and I-296 Kent County	F. Copple	03-70	70 TI-7
733	Studded Tire Survey, Winter 1970	F. Copple	03-70	65 F-82
734	Evaluation of Paczyme as a Soil Stabilizing Agent	R. C. Mainfort	04-16-70	69 NM-244
735	Development of Nuclear Methods for Quality Control of Highway Embankment Construction	R. C. Mainfort	09-70	61 E-22
736	"Liquid Greed Lite" 3M's Instant Setting Traffic Paint	L. T. Oehler	04-09-70	69 NM-242
737	Construction of Joint Load Transfer Test Road to Evaluate Acme Load Transfer Assemblies, Plastic Coated Dowels and End-of-Pour Construction Joint Assemblies	J. E. Simonsen	04-70	67 F-95 & 68 F-104
738	Summaries of Michigan Pavement Roughness, 1969 Test Program	Michigan State Highway Comm	05-70	47 F-15
739	Evaluation of Open Hearth Slag as a Highway Base Material	J. T. Defoe	05-70	68 E-43
740	ASTM A 588 Steel in M-102 Structure over I-696 in Detroit	L. T. Oehler	05-11-70	62 G-122
741	An Evaluation of "Effective and Dependable" Reflectorization for Registration Plates	Michigan State Highway Comm	05-70	69 G-172
742	"Bisymmetric Glass Beads" for Pavement Marking from the 3M Company	A. J. Permoda	05-15-70	69 NM-243
743	Pavement Joint Spacing in Portland Cement Concrete Pavements	L. T. Oehler	06-02-70	39 F-7(14)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
744	Application of Instrumental Methods for Evaluating Highway Materials, Use of Infrared Spectrophotometry in Acceptance Testing Membrane Curing Compounds for Concrete	W. L. Frederick	06-71	63 G-124
745	Evaluation of Nuclear Method for Asphalt Testing	J. H. DeFoe A. P. Chritz	07-70	68 D-26
746	Evaluation of Aggregate Sources of Glacial Origin	Norman E. Wingard	05-71	63 A-21
747	Michigan Department of State Highways Equipment for Measuring Pavement Skid Resistance	Michigan State Highway Comm	02-71	54 G-74
748	Summaries of Michigan Pavement Skid Resistance, 1969 Test Program	Michigan State Highway Comm	08-70	54 G-74
749	Evaluation of a Quasi-Elastic Modulus of Granular Base Material	I. AlNouri	09-70	68 E-42
750	Michigan's Experience with Neoprene Compression Seal	L. T. Oehler F. J. Bashore	09-70	62 G-116
751	Application of Instrumental Methods for Evaluating Highway Materials, Infrared Spectra of Epoxy Resins See 1971 Report Volume	W. L. Frederick		63 G-124
752	Paint Peeling on Pressure-Treated Posts: Tests Correction by Substituting DuPont "Lucite" Latex for MDSH No. 6B White Paint	A. R. Gabel	10-08-70	62 G-114
753	The Effect of Fines (P-200) on Bituminous Base Mixtures	I. AlNouri	02-71	70 TI-17
754	Evaluation of Hardy Salt for Ice Control Purposes	R. C. Mainfort	11-10-70	69 G-171
755	Proposed Highway Testing Laboratory and Research Laboratory	Michigan State Highway Comm	11-70	
756	Textured Concrete Pavement Surfaces	F. Copple	11-70	70 F-114
757	Plastic Beads for Traffic Paint from Dow Chemical Company	A. J. Permoda	11-23-70	68 NM-206
758	Theoretical Analysis of a Flexible Pavement Model	E. L. Marvin	08-71	67 F-93
759	Determination of Concrete Strength in the Arch Ribs of Bridge B01 of 22011 (M-95 over Menominee River)	H. L. Patterson	02-71	70 TI-12
760	1970 Performance Tests of "Fast-Dry" White Traffic Paints plus Comparative Paints	A. J. Permoda	02-18-71	47 G-36(23a)
761	Summaries of Michigan Pavement Roughness, 1970 Test Program	Michigan State Highway Comm	01-71	47 F-15
762	Progress Report, Concrete Pavement Joint Repair with Pre-Cast Slabs	J. E. Simonsen	04-71	68 F-102
763	Concrete capping Study Final Report, Groesbeck Highway (Project F 50-7, C5) US 127 (project f 33-54, C2)	C. A. Zapata	03-71	52 F-25; 53 F-29
764	Low Density Polyethylene Foam for Pressure Relief Joints	F. J. Bashore	01-01-71	69 NM-230
765	Design Recommendation for Continuous Reinforced Pavements in Michigan	L. T. Oehler	03-71	61 F-64(2)
766	Second Annual Studded Tire Survey, Winter 1970-71	F. Copple	04-71	65 F-82

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
767	Strain and Deflection Measurements on an Experimental Orthotropic Bridge	C. J. Arnold	05-71	67 G-157
768	Alleged Damage to the Residence of H. C. Dewitt Due to Traffic Induced Vibrations	C. J. Arnold L. E. DeFrain	06-71	70 F-119
769	Further Evaluation of Open Hearth Slag as a Highway Base Material	R. C. Mainfort J. H. DeFoe	07-71	68 E-43
770	Extent of Gasoline Fire Damage to B02 or 63031, US-24 and US-10 Over the Franklin River in Bingham Farms	H. L. Patterson	07-09-71	71 TI-30
771	Report on Ten-Year Service of Experimental Continuously Reinforced Concrete Pavement in Michigan	J. E. Simonsen G. R. Cudney	02-72	57 F-46
772	Bridge Deck Cracking Investigation on the Three Continuous Spans of B01 of 73101 E (I 675/Saginaw River)	H. L. Patterson E. L. Marvin	07-71	71 TI-31
773	Alleged damage to the Residence of S. D. Fralick Due to Traffic Induced Vibrations	C. J. Arnold I. AlNouri	07-71	70 F-120
774	Determination of Extent of Fire Damage to Span 7 of X03 of 25042 (Ramp B over GT&W RR and I-75 - M-78 Interchange Southwest of Flint)	H. L. Patterson	08-02-71	71 TI-28
775	A Survey of Vehicles Using Studded, Smooth, or Snow Tires in Michigan	F. Copple	07-71	69 G-173
776	Summaries of Michigan Pavement Skid Resistance, 1970 Test Program	Michigan State Highway Comm	08-71	54 G-74
777	Pull-Out Testing of McCormick Precoated Dowel Bars	C. J. Arnold	08-02-71	71 TI-35
778	Epoxy Mortar Surfacing on the Creyts Road Bridge Over I-496, Lansing (S05 of 23081A): A Report on the First and Second Annual Field Inspections	H. L. Patterson	08-04-71	67 G-157
779	Highway Quality Control Program	C. D. Church F. Copple C. A. Zapata	08-71	71 TI-26
780	Experimental Shoring to Reduce Vibration During Bridge Deck Widening	C. J. Arnold	08-12-71	65 F-84
781	Permeability Characteristics of Various Subbase Materials	E. C. Novak	08-71	71 TI-26
782	Pull-Out Tests of Adiprene-Coated Dowel Bars	C. J. Arnold	08-10-71	71 TI-32
783	Determination and Improvement of Relevant Pavement Skid Coefficients	F. Copple	08-71	69 G-173
784	Ambient Air Quality Analyses for the Proposed I 696 Corridor	W. L. Frederick J. T. Ellis	08-71	71 TI-53
785	Photometric Test for Reflex Reflective Materials	M. H. Janson G. M. Smith	05-72	51 G-54
786	Traffic Noise Factors Related to the Proposed MSU Cross Campus Route	P. Milliman L. E. DeFrain	09-71	71 TI-62
787	Air Quality Analyses for the Proposed MSU Cross Campus M-43	M. H. Janson W. L. Frederick	09-71	71 TI-63
788	Evaluation of Polyethylene Strip for Forming Centerline Joint, Final Report	J. E. Simonsen	10-71	68 NM-221
789	Survey of Pavement Joint Conditions	L. T. Oehler	10-71	39 F-7(14)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
790R	Recommendations Concerning Concrete Pavement Design and Maintenance	Michigan State Highway Comm	11-71	39 F-7(14)
791	Studded Tires: Their Effect on Highways and Vehicle Safety in Michigan	F. Copple	11-71	65 F-82
792	Performance Evaluation of Mixed-in-Place Bituminous Stabilized Shoulder Gravel	F. Copple A. P. Chritz	11-71	69 F-111
793	Noise Impact on Community Building and Pleasant Ridge Recreation Area Due to Proposed I-696 Extension	M. N. Clyde	11-06-71	71 TI-74
794	Installation of Traffic Loop Detectors	M. N. Clyde	11-09-71	71 TI-33
795	Analyses of Stream Water Along US-131 Relocation in Kent and Montcalm Counties, A Progress Report	W. L. Frederick M. H. Janson	11-71	71 G-179
796	Study of Delayed Set in Bridge Deck Pour (S05 of 63103)	M. G. Brown	12-01-71	71 TI-57
797	Experimental Vehicle Traffic Control Signals: A Final Report	M. N. Clyde		71-TI-39
798	1971 Performance Tests of "Fast-Dry" White Pavement Marking Paints	A. J. Permoda	12-27-71	47 G-36 (24a)
799	Evaluation of "Poxicon" Fly Ash Concrete Admixture, Interim Report	H. L. Patterson	12-71	71 NM-284
800	Environmental Geologic Study of the Proposed US-127 Alternate Routes	R. W. Noyce T. A. Herbert	01-72	71 TI-46
801	Pull-Out Tests of Scotchkote-Coated Dowel Bars	J. D. Culp	02-04-72	70 NM-280
802	Developing Composition Specifications for Traffic Paints: Regular-Dry Type	A. J. Permoda A. R. Gabel	02-72	70 G-175
803	"Elastizell" as an Insulator for Highway Bases	R. C. Mainfort	02-07-72	71 TI-76
804	Construction Report on Concrete Pavement Joint Repair with Pre-Cast Slabs	J. E. Simonsen	02-72	68 F-102
805	A Method of Determining Subbase Drainability	E. C.. Novak, Jr.	04-72	66 E-38
806	Environmental Geologic Study of the Proposed US 131 Corridor	F. J. Chenier	03-72	71 TI-47
807	Expansion Anchors for Use as Lane Ties	M. A. Chiunti	03-72	71 TI-43
808	Snow Plow Damage of "Transflex" Bridge Seals	L. T. Oehler	03-09-72	62 G-116(3)
809	Skid Testing of Seal Coats	L. T. Oehler	03-09-72	54 G-74
810	Environmental Geologic Study of the Proposed I 69 Alternate Routes	F. G. Belobraidich	04-72	71 TI-48
811	Study of Aggregate Mix Requirements (After submitting the initial draft of this report, it was decided to expand the project. A new report will be submitted at a later date.)	M. G. Brown		71 C-13
812	Evaluation of Manhole Step (Giant Step No. 170), Construction Products Corp.	L. T. Oehler	04-10-72	72 NM-311
813	Evaluation of Thermoplastic Pavement Markings Applied in the Lansing Area in 1968 and 1969	A. J. Permoda A. R. Gabel	04-72	47 G-36 (21a) and (22a)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
814	Statewide Determination of Highway Loadings and Conversion to 18-Kip Single Axle Load Equivalence	F. Copple	03-73	63 F-74
815	Hydroplaning on Highways	F. Copple	05-72	54 G-74
816	Effect of Temperature on the Elastic Response of Asphalt Treated Base Materials	I. AlNouri	06-72	68 E-42
817	Field Evaluation of Acid-Treated Open Hearth Slag Base Course (I-75 Dearborn Street Interchange)	J. H. DeFoe R. C. Mainfort	06-72	68 E-43
818	Cyclac Plastic for Non-Reflectorized Signs	J. T. Ellis	03-73	68 NM-203
819	Kralastic Plastic for Non-Reflectorized Signs	J. T. Ellis	03-73	68 NM-220
820	The Environmental Geology of Proposed I-69	G. R. Foster	07-72	71 TI-48
821	Development of Louvered Signs to Reduce Wind Load	Michigan State Highway Comm	01-73	66 G-153
822	Demonstration of Vermeer Slaw (I-75 Genesee County)	L. T. Oehler	06-21-72	68 F-102
823	Federal and State Air Quality Environmental Protection Requirements and Some Alternative Plans to Meet Them	M. H. Janson W. L. Frederick	07-72	71 G-182
824	Corrugated Metal Pipe Culvert Disintegration, I-75 Mackinac County	J. T. Ellis	07-14-72	72 TI-106
825	Expansion Anchors for Lane Ties	C. J. Arnold	07-72	71 Ti-43
826	Investigation of Traffic-Induced Vibration at McDade Inc., Real Estate Office in Dearborn	C. J. Arnold	08-72	72 TI-108
827	Investigation of Low and Erratic Concrete Pavement Core Compressive Strength	H. L. Patterson M. G. Brown	02-73	72 TI-94
828	Pollution of Michigan Urban Atmospheres by Highway Generated Noise	Michigan State Highway Comm	09-72	68 G-162
829	Alleged Damage to the Residence of G. McAvon Due to Traffic Induced Vibrations	I. AlNouri C. J. Arnold	09-72	72 TI-82
830	Air Quality Section for the Final Environmental Impact Statement for Proposed I-696	Michigan State Highway Comm	02-73	71 TI-53
831	Summaries of Michigan Pavement Skid Resistance, 1971 Test Program	Michigan State Highway Comm	09-72	54 G-74
832	Environmental Geologic Impact Statement	F. G. Belobraidich	09-72	71 TI-64
833	Cambridge Green Subdivision Noise Impact Study	M. N. Clyde	09-21-72	72 TI-109
834	The Effects of Pavement Drainage Gratings on Bicycle Control for Narrow-Tired Bicycles	L. T. Oehler	10-04-72	72 TI-101
835	Glacial Aggregate Evaluation in Kalamazoo County and Vicinity Michigan	B. P. Shah	05-74	63 A-21(1)
836	Evaluation of Catch Basin Grates	C. J. Arnold L. T. Oehler	10-72	72 TI-101

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
837	Frost Insulating Properties of Asphalt-Treated Based	R. C. Mainfort E. C. Novak, Jr.	10-72	69 E-45
838	Joint Repair by Epoxy Injection	J. E. Simonsen	11-72	71 TI-81
839	Laboratory Evaluation of Type 190 Preformed Neoprene Joint Seal and Lubricant Adhesives in Skewed Bridge Joints	F. J. Bashore	11-72	72 TI-88
840	Air Quality Environmental Impact Statement for Proposed I-275 from I-94 to M-153	Michigan State Highway Comm	11-72	72 TI-112
841	Further Noise Predictions for I-696 EIS	L. T. Oehler	12-28-72	71 TI-40
842	Experimental Concrete Pavement Ramps Construction Report	C. J. Arnold M. A. Chiunti	01-73	70 F-113
843	Semicircular Galvanized Steel Underdrain Pipe ("Full Flo Subdrain")	J. D. Culp	01-05-73	72 NM-345
844	Experimental concrete and Bituminous Shoulder Construction Report	C. J. Arnold M. A. Chiunti	01-73	68 F-101
845	Galvanized Steel Reinforced Concrete Bridge Decks	C. J. Arnold	01-73	68 F-103
846	1972 Performance Tests of "Fast-Dry" White and Yellow Pavement Marking Paints	A. J. Permoda	01-10-73	47 G-36
847	Testing and Evaluation of Corrugated Polyethylene Plastic Drainage Tubing	J. D. Culp	01-73	71 NM-301
848	Corrosion of Aluminum Posts for Bridge Railings	C. J. Arnold M. A. Chiunti	02-73	72 TI-130
849	Air Quality Section for the Final Environmental Impact Statement for Proposed I-475	Michigan State Highway Comm	02-73	72 TI-100
850	Preliminary Study of the Constant Dry Weight (No Weighing) Method of Compaction Control	J. H. DeFoe E. C. Novak, Jr.	03-73	62 E-24 (1)
851	Further Noise Predictions for I-696 EIS-II	L. T. Oehler	03-08-73	71 TI-40
852	Experimental Steel-Fiber-Reinforced Concrete Overlay	C. J. Arnold M. G. Brown	04-73	72 F-127 (Work Plan No.15)
853	Simplified Technique for Traffic Noise Level Estimation	G. H. Grove	04-73	72 G-189
854	Water Quality Investigation on Griffin Lake at the Interchange of M-78 and M-15	M. N. Clyde	03-14-73	73 TI-148
855	Random Observations on Performance of Highway Striping in Lansing During 1972-73 Winter	L. T. Oehler	03-26-73	47 G-36(25a)
856	PSI Values for I-94 from Telegraph to Wyoming	M. N. Clyde	04-18-73	73 TI-150
857	Bulkhead Joints for Concrete Base Shoulders	M. A. Chiunti	04-73	70 F-117
858	Dynamic Load Aspects of Truck Size and Weight	J. R. Darlington	08-73	55 F-42
859	Preventive Maintenance of Concrete Pavements	J. E. Simonsen	06-73	72 F-123

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
860	1974 National Transportation Study	M. N. Clyde	04-27-73	73 TI-145
861	An Evaluation of Mastic-Type Paving Mixtures for Resurfacing a Roadway and a Bridge Deck	F. Copple	06-73	72 C-14
862	Air Quality Section for the Final Environmental Impact Statement for Proposed I 475	Michigan State Highway Comm	06-73	72 TI-100
863	Summary of Roadway Luminaire Test Results (1971-72)	G. M. Smith	06-73	73 G-198
864	Rest Area Simulation Model	L. E. DeFrain	06-73	71 TI-58
865	M 99 Logan Street, City of Lansing, Noise Study	M. N. Clyde	06-14-73	73 TI-162
866	Failure of Preformed Guy-Grip Dead-Ends Used for Suspending Steel Cable from Poles	M. N. Clyde	06-27-73	73 TI-159
867	Pull-Out Test Results of Hilti Fastening Systems	M. A. Chiunti	06-73	73 NM-350
868	"Resil-a-Post" Flexible Traffic Guide Post	F. J. Bashore	07-10-73	73 NM-352
869	Joint Failures on I-75 North of Flint	L. T. Oehler	07-11-73	68 F-102
870	Evaluation of Liquid Chemicals for Preventing Ice Formation on Highway Bridge Decks	J. H. DeFoe	07-73	72 G-187
871	Experimental Patching Concrete Field Application on Test Bridge S01 of 33035 A (WB M-36 Over US-127)	H. L. Patterson	07-73	69 NM-251 71 NM-288 71 NM-290
872	Evaluation of Six Commercial Fast-Setting Hydraulic Patching Mortars, a Latex Bonding Agent, and an Epoxy Emulsion Admixture	W. K. Kruger H. L. Patterson	07-73	69 NM-226 69 NM-239 69 NM-240 69 NM-251 71 NM-288 71 NM-290 71 NM299 71 NM306
873	Reflectorization of Fluorescent Flagman Vests	M. H. Janson G. M. Smith	07-73	73 TI-164
874	Noise Study for the Final Environmental Impact Statement for Proposed I-475	Michigan State Highway Comm	07-73	72 TI-95
875	Bridge Deck Construction	C. J. Arnold	08-03-73	73 TI-138
876	Movement Study of Bridge Piers	C. J. Arnold M. A. Chiunti	08-73	68 F-99
877	"Quaker-Klat" Black Bituminous Coating (Quaker State Oil Co.)	A. J. Permoda	08-08-73	65 NM-144
878	Steel-Fiber-Reinforced Concrete Overlay	C. J. Arnold	08-73	72 F-127
879	Construction and Impact Testing of a Short Section of Experimental Concrete Glare Screen	C. J. Arnold M. A. Chiunti	08-73	73 F-135

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
880	Air Quality Section for the Final Environmental Impact Statement for Proposed M-99	Michigan State Highway Comm	08-73	73 TI-151
881	Corrosion Resistance of Dowel Bats (Organic Coatings)	A. R. Gabel A. J. Permoda	08-73	52 G-64
882	Air Quality Section for the Final Environmental Impact Statement for Proposed Northwestern Highway	Michigan State Highway Comm	08-73	73 TI-146
883	Summaries of Michigan Pavement Skid Resistance, 1972 Test Program	Michigan State Highway Comm	09-73	54 G-74
884	Feasibility of Hearth Slag for Bases	J. H. DeFoe	09-15-73	68 E-43
885	A Hot-Mix Asphalt Compaction Demonstration Experiment Comparing Vibratory and Conventional Rollers	C. A. Zapata	10-73	73 C-15
886	Air Quality Section for the Draft Environmental Impact Statement for Proposed I-96	MSHC	10-73	73 TI-172
887	Annual Studded Tire Survey, Winter 1972-1973	R. L. Felter P. M. Schafer	10-73	65 F-82
888	Current Research Laboratory Program	L. T. Oehler	10-73	
889	Investigation of Narrow Width Reinforcing Mats and Longer Slabs with Slip-Form Paving	J. E. Simonsen	10-73	71 F-121
890	Traffic Noise Level Predictor Computer Program	G. H. Grove	10-73	72 G-189
891	Aluminum-Coated Chain Link Fence	F. J. Bashore	10-19-73	61 NM-33 (60 G-102(1))
892	Automatic Weighting of Vehicles in Motion and Collection of Traffic Data by Electronic Methods	MSHC	03-74	52 F-26
893	Drainability Analysis of Samples Submitted to the Porous Materials Specification Committee by District Soils Engineers	E. C. Novak, Jr.	12-04-73	66 E-38
894	Investigation of Chemical and Physical Properties of Structural Steel, B03 of 51021-Cooley Bridge, M-55 over Pine River	K. A. Allemeier		73 TI-180
895	Faulting of Short Slab Concrete Pavements	C. J. Arnold	12-73	70 F-113
896	Investigation of Structural Tees. Galvanized in Sections in a Truss-Type Pedestrian Bridge	A. J. Permoda	01-74	73 G-197
897	Legibility Distance of I-69 Reflector Button Legend Signs	G. M. Smith	01-74	73 TI-192
898	Experimental Concrete and Bituminous Shoulders (Progress Report)	M. A. Chiunti	02-74	68 F-101
899R	Air Quality Report for US-31, Berrien County Report Revised January 1979 See Report No. R-1105	Michigan State Highway Comm	05-76	73 TI-183
900	1973 Performance Tests of "Fast-Dry" White and Yellow Pavement Marking Paints	A. J. Permoda	02-11-74	47 G-36 (26a)
901	Final Report on Evaluation of a Rubber Pad Railroad Crossing	J. E. Simonsen	02-74	64 G-134
902	Air Quality Report for I-75 Zilwaukee Bridge	Michigan State Highway Comm	02-74	74 TI-196

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
903	Study of Glare Due to Parking Lot Lighting on US-127 near M-36, Mason	L. T. Oehler	02-19-74	74 TI-198
904	Dow Two-Component Self Leveling Urethane Joint Sealant	F. J. Bashore A. W. Price	02-14-74	71 NM-302
905	General Evaluation of Current Concrete Pavement Performance in Michigan, Jointed Concrete Pavement Deterioration Considered as a Probability Process	L. F. Holbrook Wen-Hou Kuo	03-74	69 F-110
906	Air Quality Report for US-24 (Telegraph Rd.), Oakland County	Michigan State Highway Comm	03-74	74 TI-195
907	Survey and Recommendations Concerning Aluminum Anchor Bolts on Bridge Rails	C. J. Arnold M. A. Chiunti	03-74	73 TI-179
908	Bulkhead Joints for Concrete Base Shoulders (Progress Report)	C. J. Arnold M. A. Chiunti	03-74	70 F-117
909	M-51 Relocation - Berrien County	Michigan State Highway Comm	04-74	74 TI-207
910	Evaluation of Load Transfer Assemblies (Progress Report)	J. E. Simonsen	04-74	67 F-95 68 F-104
911	Experimental Joint Spacing Project (Construction Report)	M. A. Chiunti	04-74	70 F-116
912	Specifications for Polyvinylchloride Rumble Strips	L. T. Oehler		73 TI-143
913	Field Inspections of One and Two-Stage Joint Sawing Procedures	F. J. Bashore	05-74	72 TI-89
914	An Investigation of the Definition of Frost Heave Textured Material	E. C. Novak, Jr.	05-15-74	70 E-46
915R	Noise Study and Analysis, M-51 City of Niles - Berrien County, Main Street to Pucker Street	G. H. Grove	06-74	74 TI-210
916	Protective Coatings for Highway Metals	A. J. Permoda A. R. Gabel	06-74	49 G-50(5)
917	"StriCel" Highway Stripe Remover from Atlas International, Inc. of Colorado	A. R. Gabel	05-13-74	74 NM-385
918	Noise Study and Analysis, City of Pontiac - Oakland County, East Boulevard Extension, South Boulevard to Woodward Ave.	M. E. Scarlata	06-74	74 TI-197
919	Cellex Cellular Concrete for Precast Noise Barriers	K. H. Laaninen	05-74	72 G-189
920	Air Quality Report for Proposed M-29, City of Algonac	Michigan State Highway Comm	05-74	74 TI-199
921R	Air Quality Report for M-3 (US-25 BR), Macomb County	Michigan State Highway Comm	06-76	74 TI-205
922	Noise Study and Analysis, US-131 Big Rapids Northerly to Ashton	M. E. Scarlata	06-74	74 TI-215
923	In-Place Stabilization of Soil-Aggregate Mixtures with Bituminous Materials (Progress Report)	J. H. DeFoe	06-74	72 F-125
924	Evaluation of Resin Core Particle Board as a Sign Backing Material	J. T. Ellis	06-74	69 NM-245
925	Experimental Concrete pavement Ramps (Progress Report)	M. A. Chiunti	06-74	70 F-113

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
926	Evaluation of Riding Quality of Sandstone Hot Bituminous Mix	L. T. Oehler	06-20-74	MB 46061-04845A 47 F-15
927	Noise Study and Analysis, Cities of Allen Park, Dearborn Heights, and Taylor - Wayne County, Reconstruction of the I-94 and M-39 Interchange	M. E. Scarlata	06-74	74 TI-214
928	Lights and Lighting for Hazard Warning and Delineation	G. M. Smith M. H. Janson	10-76	62 G-117
929	Air Quality Report for Proposed I-69 from I-96 to US-27	Michigan State Highway Comm	07-74	74 TI-220
930	Study of Bonding Sidewalk and Parapet Concrete to Modified (Water Soluble) Linseed Oil Cured Bridge Deck Pours	S. M. Foster	07-74	73 TI-177
931	Route Location Noise Study and Analysis, M-275 (I-96 and I-696 Northerly to M-59)	M. E. Scarlata	07-74	74 TI-216
932	Air Quality Report for I-69 From US-27 to Morrice, Clinton and Shiawassee Counties	Michigan State Highway Comm	07-74	73 TI-185
933	Air Quality Report for US-31 Berrien County North from Indiana Line	Michigan State Highway Comm	08-74	74 TI-221
934	Annual Studded Tire Survey, Winter 1973-1974	R. L. Felter P. M. Schafer	08-74	65 F-82
935	Steel Strength Determination - Six Bridges	M. A. Chiunti	09-10-74	74 TI-201
936	Evaluation of Liquid Ice Control Chemicals Applied to Bridge Decks (Progress Report)	J. H. DeFoe	09-74	72 G-187
937	Air Quality Report for M-275 From I-96 and I-696 to M-59	Michigan State Highway Comm	09-74	74 TI-217
938	Field Inspection of Telespar Sign Posts, "Watch for Ice on Bridge," Type	A. J. Permoda	09-24-74	74 TI-237
939	The Housel Model for Slope Stability Analysis	J. M. Portigo	10-74	72 TI-85
940	"King-Strip" Highway Striping Remover from Pert Products Company of Detroit	A. J. Permoda A. R. Gabel	10-09-74	74 NM-408
941	Noise Study and Analysis, City of Rockwood - Wayne County Reconstruction of the I 75 and North Huron River Drive Interchange	M. E. Scarlata	10-74	73 TI-176
942	Traffic Noise Level Predictor Computer Program	G. H. Grove	10-74	72 G-189
943	Experimental Concrete and Bituminous Shoulders	M. A. Chiunti K. S. Bancroft	10-74	72 F-126
944	Summaries of Michigan Pavement Skid Resistance, 1973 Test Program	Michigan State Highway Comm	10-74	54 G-74
945	Evaluation of Salvaged Base Course Materials	J. H. DeFoe	11-74	74 TI-248
946	Simplified Technique for Traffic Noise Level Estimation	G. H. Grove M. E. Scarlata	12-74	72 G-189
947	Investigation of Traffic-Induced Vibrations at the Mary Roy Residence, Marine City	M. A. Davison	12-74	74 TI-202

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
948	Noise Study and Analysis, M-51 City of Niles - Berrien County, Main Street to Pucker Street	M. E. Scarlata	12-74	74 TI-210
949	Pressure-Induced Failures in Jointed Concrete Pavements and a Machine for Installation of Pressure Relief Joints	C. J. Arnold	12-74	74 F-140
950	Upson Laminated Cellulose Fiber Boards for Use as Road-Side Sign Panels	M. A. Chiunti	12-16-74	74 NM-418
951	Experimental Shoring to Reduce Vibration During Bridge Deck Widening (Progress Report: 9-Year Performance)	C. J. Arnold M. A. Chiunti K. S. Bancroft	01-75	65 F-84
952	Air Quality Report for M-20, Lee Township, Midland County to Indian Street (US-10 BR), City of Midland	Michigan State Highway Comm	01-75	74 TI-263
953	An Overview of the Roadway Surface-Tire Pattern Interaction Noise System	G. H. Grove	03-75	74 TI-203
954	Guardrail Wood Post Deterioration	A. R. Gabel J. L. McKenna	01-75	71 G-178
955	Investigation of Traffic-Induced Vibrations at 3018 Woodruff Street, Lansing	C. J. Arnold M. A. Davidson	01-75	74 TI-257
956	Laboratory Evaluation of "Elastizell" as a Lightweight Fill	R. C. Mainfort	01-31-75	75 TI-265
957	1974 Performance Tests of "Fast-Dry" White and Yellow Pavement Marking Paints	A. J. Permoda	02-24-75	47 G-36(27a)
958	Priority Rating for Replacement of Aluminum-Post Bridge Rail	C. J. Arnold M. A. Chiunti	03-75	74 TI-222
959	Air Quality Report for M-21 in Lapeer and St. Clair Counties	Michigan State Highway Comm	04-75	74 TI-269
960	Response to I-75 City of Taylor Noise Complaint	K. A. Allemeier	04-28-75	73 TI-191 74 NI-1
961	Cement Content of Low Strength, Type 1 P, Concrete	C. V. Iansiti H. L. Patterson	04-15-75	74 TI-256
962	Transverse Cracking Reflected Through Asphaltic Concrete Resurfacing	C. A. Zapata	05-23-75	73 C-16
963	Development of Soil-Support Values and Coefficients of Relative Strength of Michigan Highway Support Materials	R. C. Mainfort	05-12-75	71 E-49
964	Michigan's Accident Experience with Glass Bead License Plate Reflectorization	L. F. Holbrook	06-30-75	75 TI-286
965	Air Quality Report for I-69, Charlotte to I-96, Eaton County	Michigan State Highway Comm	07-75	74 TI-224
966R	Noise Analysis and Noise Abatement Proposals, Interstate Highway I-696 from Lahser Road Easterly to I-75, Oakland County	G. H. Grove	11-75	71 TI-40
967	Evaluation of Various Bridge Deck Joint Sealing Systems	F. J. Bashore	08-75	72 F-128
968	Development of Procedures for Replacing Joints in Concrete Pavement	J. E. Simonsen	08-75	70 F-118
969	Air Quality Report for the I-94 and M-39 Interchange	Michigan State Highway Comm	09-75	74 TI-214

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
969R	Air Quality Report for the I-94 and M-39 Interchange	Michigan State Highway Comm	03-78	74 TI-214
970	An Evaluation of Pavement Wear Caused by Perma-T-Gripper Tire Studs	F. Copple	08-75	65 F-82
971	Laboratory Calibration of Nuclear Soil Density-Moisture Gages	J. H. DeFoe	09-75	73 E-52
972	Reinforcement of Asphaltic Concrete Overlays with Petromat Fabric	C. A. Zapata L. M. Bateman	09-75	71 NM-286
973	"Pozicon" Fly-Ash Pavement Concrete - Development Work (Second Progress Report)	H. L. Patterson	11-75	71 NM-284
974	Experimental Field Application of "Pozicon" Fly Ash in the Median Barrier of I-75 Near the City of Flint	H. J. Patterson	04-76	71 NM-284
975	Evaluation of a Model for Predicting Transverse Cracking of Flexible Pavement	E. C. Novak, Jr.	02-76	73 E-51
976	Corrosion Performance of Aluminum Culverts	J. T. Ellis	11-75	60 NM-26
977	Design of Binder Course Bituminous Concrete Pavement Mixtures	E. C. Novak, Jr.	10-75	73 E-51
978	Air Quality Report for M-59 from US-23 to Proposed M-275 in Livingston and Oakland Counties	MSHC	10-75	75 TI-292
979	Experimental Installation of Chrome-Alloy Steel Dowels	J. E. Simonsen	10-75	63 F-75
980	Trial Installation of Rumble Strips in Asphalt Shoulders	J. E. Simonsen	12-75	74 TI-236
981	Evaluation of "Wej-It" and "Taper-Bolt" Expansion Anchors	M. A. Chiunti	10-75	75 NM-480 75 NM-453
982	Summaries of Michigan Pavement Skid Resistance, 1974 Test Program	MSHC	11-75	54 G-74
983	Security Steel Insert and Deflected Locknuts	M. A. Chiunti	11-14-75	75 NM-442
984	Application for Federal Financial Participation in Traffic Noise Barrier Construction Along a Selected Segment of I-75 in Southeastern Michigan	MSHC	11-75	75 TI-299
985	"Improved Alert" Reflective Liquid (Cataphote Corp.) and "B-I-P" Reflective Liquid from Flex-O-Lite Corp.	A. R. Gabel	01-09-76	71 NM-291
986	Annual Report of Activities of the Michigan Department of State Highways and Transportation Research Laboratory	MSHC	01-76	Not Listed
987	Recommended Capacities for Expansion Anchor Lane Ties and Evaluation of Frazer and Jones Concrete Expansion Anchors	M. A. Chiunti	01-76	75 TI-306 75 TI-281
988	Reflectorized License Plates and Night Accident Reduction	L. F. Holbrook	02-76	75 TI-286
989	Feasibility Study to Convert Regular-Dry Traffic Paint Applicator to Fast-Dry	A. J. Permoda	02-20-76	74 TI-255
990	Fiberglass Reinforced Pultrusions	M. A. Chiunti	02-26-76	75 NM-446
991	Subbase Drainage Criteria	F. T. Hsia	03-76	75 E-56
992	Corridor Air Quality Report for Proposed M-59 - Utica to I-94	MSHC	02-76	75 AP-3A

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
993	Strength Comparison Between Water Reducer Concretes of Portland-Pozzolan and Type 1A Cements	H. L. Patterson	03-15-76	71 NM-284 72 B-91
994	Accident Rates and Surface Properties – An Investigation of Relationships	L. R. Holbrook	10-76	73 G-193
995	A Literature Survey of Median Barriers and Highway Safety	L. F. Holbrook W. H. Kuo	04-76	76 TI-329
996	Comparative Performance of Contraction Joints on I-75, Saginaw and Genesee Counties	F. Copple	04-27-76	75 TI-303
997	Investigation of Straw Fire Damage to CRCP, I-96 Near Novi (I 63191-03586A)	W. K. Kruger	04-28-76	75 TI-294
998	Petrographic Analysis of Coarse Aggregate: Superior Sand and Gravel Pit, Pit No. 31-45 (Testing Laboratory Sample 75 A-152)	R. W. Muethel	04-26-76	75 A-152
999	CMI Autograde Pavement Profiler	F. Copple	05-11-76	76 TI-341
1000	Petrographic Analysis of Coarse Aggregate: Gogebic Sand and Gravel Co., Pit No. 27-55 (Testing Laboratory Sample 75 A-203)	R. W. Muethel	05-11-76	75 A-203
1001	Development and Evaluation of a Field Drainability Test Method	E. C. Novak, Jr.	06-76	75 E-53
1002	Bulkhead Joints for Concrete Base Shoulders (Final Report)	M. A. Chiunti	05-76	70 F-117
1003	Petrographic Analysis of Coarse Aggregate: Wallace Stone Co., Pit No. 34-4 (Testing Laboratory Sample 75 A-2501)	R. W. Muethel	05-25-76	75 A-2501
1004	Petrographic Analysis of Coarse Aggregate: Wallace Stone Co., Pit No. 32-4 (Testing Laboratory Sample 75 A-2500)	R. W. Muethel	05-25-76	75 A-2500
1005	Evaluation of Four Organic Resin Binder Systems	H. L. Patterson	11-76	67 NM-171 68 NM-192 69 NM-225 69 NM-229
1006	Petrographic Analysis of Coarse Aggregate: Caspian Lumber Co. #2, Pit No. 36-40 (Testing Laboratory Sample 75 A-291)	R. W. Muethel	04-06-76	75 A-291
1007	Petrographic Analysis of Coarse Aggregate: Construction Aggregates Corp., Pit No. 70-9 (Testing Laboratory Sample 75 A-2162)	R. W. Muethel	04-06-76	75 A-2162
1008	A Review of Bridge Deck Problems, and a Final Report on the Performance of Several Berrien County Structures That Were Widened Under Traffic	C. J. Arnold M. A. Chiunti K. S. Bancroft	06-76	65 F-84
1009	1975 Performance Tests of "Fast-Dry" White and Yellow Pavement Marking Paints	A. J. Permoda	07-02-76	47 G-36(28a)
1010	Petrographic Analysis of Coarse Aggregate: Lindberg Pit No. 22-29 (Testing Laboratory Sample 75 A-410)	R. W. Muethel	06-24-76	75 A-410
1011	Fracture Toughness and Fatigue Properties of Steel Plate Butt Joints Welded by Submerged Arc and Electroslag Welding Procedures	J. D. Culp	05-76	72 F-124
1012	Bridge Deck Repair and Development of Procedures for Epoxy Injection Grouting of Bridge Deck Delaminations	H. L. Patterson	07-76	73 NM-381 74 F-141
1013	An Inventory of Traffic Noise Levels Along Limited Access Freeways in Michigan	G. H. Grove M. E. Scarlata	09-76	75 G-211

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1013A	An Inventory of Traffic Noise Levels Along Limited Access Freeways in Michigan (Appendices C and D)	G. H. Grove M. E. Scarlata	02-77	75 G-211
1014	High-Index, Wet-Performance Glass Beads for Pavement Markings From Potter Brothers	A. J. Permoda	07-02-76	70 NM-270
1015	"Snow-Glow" Glass Beads for Pavement markings From Snowfast Company of Italy	A. J. Permoda	07-02-76	72 NM-332
1016	Experimental Short Slab Pavements (Construction Report)	M. A. Chiunti	08-76	73 F-136
1017	Application for Federal Financial Participation in Traffic Noise Barrier Construction Along a Selected Segment of I-75 in the City of Taylor in Southeastern Michigan	MSHC	08-76	73 TI-191
1018	Steel Sampling, 76 Structures	C. J. Arnold	08-76	75 F-146
1019	Expansion Anchor Evaluation, Hilti HDI Anchors	C. J. Arnold	08-76	76 NM-474
1020	Development of Procedures for Replacing Joints in Concrete Pavement, Final Report	J. E. Simonsen	09-76	70 F-118
1021	Reflectorized Flagman Vests	G. M. Smith M. H. Janson	09-76	73 TI-164
1022	Effects of Deicing Salts on the Chloride Levels in Water and Soil Adjacent to Roadways	R. W. Muethel	10-76	71 G-180
1023	Air Quality Report for Davison Freeway, City of Highland Park, Wayne County	MSHC	10-76	76 AP-11(A)
1024	Aggregate Gradation Quality Control	W. H. Kuo	11-76	72 G-191
1025	Thickness Equivalencies for Asphalt-Treated and Untreated Aggregate Base Course Layers	F. T. Hsia	11-76	68 E-42
1026	Air Quality Report for M 99 in Ingham and Clinton Counties	MSHC	10-76	76 AP-12A
1026R	Air Quality Report for M 99 In Ingham and Clinton Counties	MSHC	12-78	76 AP-12A
1027	Progress Report on the Evaluation of Various Types of Railroad Crossings	J. E. Simonsen	11-76	75 F-143
1028	Study of Deck Concrete in S03 of 64014, US-31 under Winston Road West of Rothbury	M. G. Brown	11-08-76	76 TI-355
1029	Steel Evaluation of Vehicle-Damaged Structure (S08 of 39022), 38 th Street Over I-94 Near Kalamazoo	J. D. Culp	11-76	75 TI-275
1030	Performance Evaluation of Trinidad Asphalt Cement for Bituminous Concrete Resurfacing	C. A. Zapata	11-76	73 C-16
1031	Air Quality Report for the Reconstruction of I-94 BL Southwest of Battle Creek, Calhoun County	MSHC	11-76	76 AP-13(A)
1032	Petrographic Analysis of Coarse Aggregate: Gasparido Pit No. 31-65 (Testing Laboratory Sample 75 A-1121)	R. W. Muethel	12-14-76	75 A-1121
1033	Galvanized Steel Reinforced Concrete Bridge Decks, Progress Report	C. J. Arnold	12-76	68 E-103
1034	Control and Prevention of Deterioration of Concrete Bridge Decks	M. G. Brown	12-76	61 B-58

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1035	Experimental Concrete and Bituminous Shoulders, Progress Report	K. S. Bancroft	12-76	72 F-126
1036	Petrographic Analysis of Coarse Aggregate: Boyd Pit No. 54-54 (Testing Laboratory Sample 75 A-1625)	R. W. Muethel	12-27-76	75 A-1625
1037	Air Quality Report for US-12 in Dearborn, Wayne County	MSHC	12-76	76 AP-9A
1037R	Air Quality Report for US-12, City of Dearborn, Wayne County		03-79	76 AP-9(A)
1038	Determination and Improvement of Relevant Pavement Skid Coefficients	F. Copple P. T. Luce	01-77	69 G-173
1039	Concrete Arch Rib Condition Survey, M-99 (Logan St.) Over the GRW RR and the Grand River, City of Lansing (X01 of 33011)	H. L. Patterson	01-77	76 TI-359
1040	Statistical Analysis of Aggregate Base Course Inspection Using an End Result Aggregate Specification (Sampling, Testing and Acceptance Procedures)	W. H. Kuo	02-77	76 G-222
1041	Drainage and Foundation Studies for an Experimental Short Slab Pavement	T. M. Green E. C. Novak, Jr.	02-77	73 F-136
1042	Annual Report of Activities of the Michigan Department of State Highways and Transportation Research Laboratory	MSHC	01-77	
1043	Edge Marking Criteria from Contrast Ratios	G. M. Smith	02-77	68 G-165
1044	Construction of a Cold-Mix Emulsion Black Base	G. F. Sweeney	02-77	75 E-55
1045	Effectiveness of the Experimental Wooden Noise Wall, Interstate Highway I-75, City of Allen Park, Michigan	G. H. Grove	02-77	71 TI-36
1046	Comparison Study on the Performance of Bituminous Stabilized Bases (M-66 and M-20)	F. T. Hsia	02-77	75 E-59
1047	Brightness Study and Specification Compliance Survey of Arrow-Bar Traffic Control Signs	J. D. Truax M. E. Scarlata	06-77	76 TI-361 76 TI-373
1048	Evaluation of Cold-Mix Emulsion Black Base (M-150 and Auburn Road, Oakland County)	J. D. DeFoe	02-77	72 D-27
1049	Summaries of Michigan Pavement Skid Resistance, 1975 Test Program, MDSHT Report No. 249	MSHC	02-77	54 G-74
1050	Lincore Ni2 Low Alloy Submerged Arc Welding Wire	J. D. Culp	03-77	76 NM-502
1051	Mixed-in-Place Stabilization of Highway Base Aggregates and Pulverized Bituminous Surfacing Using Asphalt Stabilizers, Final Report	J. H. DeFoe	03-77	72 F-125
1052	Application for Federal Financial Participation in Traffic Noise Barrier Construction Along Selected Segments of I-275 in Southeastern Michigan	MSHC	03-77	76 TI-366
1053	Experimental Lightweight Fill, Construction Report	E. C. Novak, Jr.	03-77	75 E-54
1054	Petrographic Analysis of Coarse Aggregate: American Aggregates Corp. Milford Pit. No. 63-97	R. W. Muethel	03-21-77	76 A-499
1055	Petrographic Analysis of Coarse Aggregate: Mickelson No. 3 Pit No. 63-88	R. W. Muethel	03-21-77	75 A-2366
1056	Petrographic Analysis of Coarse Aggregate: Wallace Stone Co. Pit No. 32-4	R. W. Muethel	03-21-77	76 A-1708

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1057	Evaluation of Five Commercial Fast-Setting Patching Mortars	K. H. Laaninen	03-77	73 NM-360 73 NM-374 73 NM-382 74 NM-396 74 NM-407
1058	Instruction Manual for Bridge Deck Delamination Detector	MSHC	04-77	68 F-106
1059	Petrographic Analysis of Analysis of Coarse Aggregate: Emmons Pit No. 54-22	R. W. Muethel	04-26-77	76 A-2130
1060	Petrographic Analysis of Coarse Aggregate: Glancy Pit No. 62-3	R. W. Muethel	04-26-77	77 A-1
1061	Evaluation of Prewetted Salt for Ice Control, Final Report	J. H. DeFoe	05-77	75 G-216
1062	Interim Report on Epoxy Injection Grouting Experimental Repair Procedure	H. L. Patterson	07-01-77	74 F-141
1063	Preventive Maintenance of Concrete Pavement - US-127, Progress Report	J. E. Simonsen	06-77	72 F-123
1064	Elastzell Concrete Lightweight Fill Construction (Pine River Bridge, St. Clair)	E. C. Novak, Jr.	06-77	72 F-123
1065	Maintenance of Neoprene Sealed Concrete Pavements, First Progress Report	J. E. Simonsen F. J. Bashore A. W. Price	07-77	75 G-217
1066	Raised Pavement Markers	M. H. Janson G. M. Smith J. D. Truax M. J. Tiedt	07-77	76 TI-377
1067	Epoxy Resin Coated Reinforcing Steel, Construction and Progress Report	C. J. Arnold	06-77	73 F-131
1068	An Accident Frequency Prediction Model for Selected State Trunkline Classifications	W. H. Kuo	12-77	76 G-223
1069	Fibco 'Mod II' Portable Truck Barrier	J. F. Caudell	12-77	76 NM-507
1070	Petrographic Analysis of Coarse Aggregate: Marblehead Quarry, Marblehead, Ohio	R. W. Muethel	08-22-77	77 A-426
1071	Petrographic Analysis of Coarse Aggregate: Pickitt No. 1 Pit No. 34-26	R. W. Muethel	08-22-77	76 A-1265
1072	A Study of Supplemental Drainage Methods for Preventing Frost Heave in Full Depth Concrete Shoulders	E. C. Novak, Jr.	09-77	72 E-50
1073	Report on Commission Auditor's Recommendations Nos. 25, 27, 28	MSHC	08-77	
1074	Air Quality Report for M-153 in the Cities of Westland and Garden City, Wayne County	MSHC	08-77	77 AP-16A
1075	A Validation of the NCHRP 117/144 Traffic Noise Level Predictor Model for Low Density, Close Distance Traffic on I-696 Between I-75 and I-94	G. H. Grove	11-77	73 TI-147
1076	Evaluation of Nuclear Methods for Measuring Asphalt Content of Bituminous Mixtures	J. H. DeFoe	12-77	68 D-26
1077	Low Slump Portland Cement Concrete Bridge Deck Overlays	K. H. Laaninen	01-78	75 B-93

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1078	Evaluation of Sulfur-Asphalt Binder for Bituminous Resurfacing Mixtures, Progress Report	J. H. DeFoe	01-78	74 D-29
1079	Second Progress Report on the Evaluation of Various Types of Railroad Crossings	J. E. Simonsen	03-78	75 F-143
1080	Petrographic Analysis of Coarse Aggregate: Champion , Inc., Moon Lake Pit No. 22-4	R. W. Muethel	01-20-78	75 A-567
1081	A Report on the Cause of Deterioration of Sections of Flexible I-94 Pavement	E. C. Novak, Jr.	02-78	77 TI-433
1082	Annual Report of Activities of the Michigan Department of State Highways and Transportation Research Laboratory	MSHC	02-78	
1083	Petrographic Analysis of Coarse Aggregate: Arthur #2 Pit No. 72-5	R. W. Muethel		75 A-912
1084	Petrographic Analysis of Coarse Aggregate: Champion, Inc. Dishneau Pit No. 52-1	R. W. Muethel		75 A-644
1085	Summaries of Michigan Pavement Skid Resistance, 1976 Test Program	MSHC	03-78	54 G-74
1086	Petrographic Analysis of Coarse Aggregate: U. S. Forest Service Pit No. 27-68	R. W. Muethel	03-28-78	75 A-1120
1087	Evaluation of Expansion Anchors, Self-Drilling, Torque Type, and Stud-Type	K. S. Bancroft	04-78	76 NM-508 77 NM-514 76 TI-380 77 TI-431
1088	Use of Recycled Asphalt Surface Material in the Construction of a Bituminous Stabilized Base, I-75, Cheboygan County, Construction Report	J. H. DeFoe G. F. Sweeney	04-78	75 D-30
1089	Evaluation of Monoslabs for Paving of Ditches and Service Drives	S. L. Purdy	04-78	74 NM-398
1090	Noise Study and Analysis, Cities of Allen park, Dearborn Heights, and Taylor, Wayne County, Reconstruction of the I-94 and M-39 Interchange (Addendum)	MSHC	06-78	74 TI-214
1091	A Computer Program for Computing Probabilities and Generating Random Variates for the Gamma, Normal, and Chi-Square Distributions and Its Applications to Highway Technology	W. H. Kuo	07-78	78 TI-485
1092	Air Quality Report for I-69 in Ingham, Clinton, and Shiawassee Counties	MSHC	06-78	78 AP-21A
1093	Petrographic Analysis of Coarse Aggregate: Paquin Gravel Co. #2, Pit No. 21-19	R. W. Muethel	06-78	78 A-758
1094	A Statistical Analysis of Potential Relationships Between Selected Concrete and Aggregate Properties and Concrete Pavement Performance	W. H. Kuo	07-78	76 A-26
1095	Air Quality Report for Proposed Reconstruction of Interchanges at I-94 and Merriman Road and I-94 and Middle Belt Road	MSHC	09-78	78 AP-22(A)
1096	Condition of "Elastizell" Lightweight Concrete Backfills After One Year in Place, First Progress Report	T. M. Green E. C. Novak, Jr.	09-78	75 E-54
1097	Study of Latex Modified concrete Deterioration on Wiard Road Over US-27 (S04 of 81063)	M. G. Brown	09-20-78	78 TI-508
1098	The Michigan Department of Transportation Circular Wear Track-Results of Preliminary Aggregate Polishing Tests, First Progress Report	R. W. Muethel	03-79	71 C-13

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1099	Air Quality Measurements of Movable Asphalt Plants for Recycling Paving Asphalt	J. T. Ellis	11-78	78 G-235
1100	Salt Degradation Study	L. T. Oehler	11-29-78	77 TI-427
1101	Investigation of Parking Ramp Leakage Through the Upper Level Slab at the Capitol Complex	H. L. Patterson	12-78	78 TI-447
1102	Traffic Signal Dimming Methods	J. D. Truax G. M. Smith M. H. Janson	01-79	78 TI-489
1103	Inspection of Low Slump and Latex Modified Overlays on I-94 in the Detroit Area	M. G. Brown	12-05-78	57 B-39 75 B-93
1104	Air Quality Report for M-51 Relocation - Berrien County		01-79	77 AP-14(A)
1105	Air Quality Report for US-31, Berrien County		01-79	73 TI-183
1106	A Survey of Median Barriers and Highway Safety	L. F. Holbrook W. H. Kuo	01-79	78 TI-522
1107	Evaluation of Sodium Chloride for Stabilizing an Aggregate Base Course (M-28 East of Bruce Crossing, Project No. 00955A)	R. C. Mainfort	02-79	57 E-15(2)
1108	Stress Measurements and Load Distribution on Selected Portions of the Mackinac Bridge	C. J. Arnold W. D. Bullen	10-79	78 F-155
1109	Summaries of Michigan Pavement Friction Measurements, 1977 Test Program	P. M. Schafer	04-79	54 G-74
1110	Astro Optics Delineators	M. H. Janson	03-28-79	78 NM-559
1111	NFS Industries Delineators	M. H. Janson	03-28-79	78 NM-560
1112	Annual Report of Activities of the Michigan Department of Transportation Research Laboratory		03-79	
1113	Evaluation of Various Types of Railroad Crossings, Third Progress Report	J. E. Simonsen	04-79	75 F-143
1114	A Study to Monitor the Deicing Chemical Pollution Prevention System at the Reed City MDOT Maintenance Garage, Preliminary Report	R. W. Muethel	04-79	77 G-227
1115	Performance Evaluation of Non-Reinforced Ramps	L. T. Oehler	04-23-79	78 TI-528
1116	Anti-Glare Screen Median Fence	J. D. Truax G. M. Smith	05-79	69 NM-241
1117	Effectiveness of Infrared Joint Heaters for Bituminous Pavements	J. H. DeFoe	05-79	77 D-33
1118	A Probability Model for Determining the Safety Benefits of Median Barrier Installations	W. H. Kuo	05-79	79 TI-566
1119	Development of Base Layer Thickness Equivalency	S. S. Kuo	06-79	68 E-42
1120	Continuously Reinforced Concrete Pavement in Michigan, A Historical Summary	J. E. Simonsen	06-79	61 F-64 57 F-46 73 F-129

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1121	Evaluation of Various Bridge Deck Joint Sealing Systems, Final Report	F. J. Bashore D. E. Branch A. W. Price	07-79	72 F-128
1122	Effectiveness of Neoprene Seals in Preventing Concrete Pavement Contraction Joint Deterioration	F. J. Bashore A. W. Price	07-79	73 G-195
1123	Alternate, More Economical Repainting Systems for Bridge Structural Steel, First Progress Report	F. J. Bashore A. J. Permoda	07-79	76 G-219
1124	A Study to Evaluate the Performance of Bituminous Wearing Course Containing Sandy Limestone, A Preliminary Report	R. W. Muethel	07-79	77 C-18
1125	Performance Evaluation of 'Mirafi 140' Fabric as Overlay Reinforcement to Control Reflection Cracking	C. A. Zapata	07-79	77 TI-398
1126	Investigation of Pavement Problems on I-275	MTC	10-79	79 F-158
1127	Texturing Existing Concrete Pavement	P. T. Luce	10-79	78 TI - 537
1128	Investigation of Pavement Heaving on Bridge Approaches, I-275 (I 58171-06463A)	E. C. Novak, Jr.	10-79	79 TI-562
1129	Evaluation of Sulfur-Asphalt Binder Bituminous Paving Mixtures, Progress Report	J. H. DeFoe	11-79	79 D-37
1130	Application for Federal Financial Participation in Traffic Noise Barrier Construction: The Michigan Statewide Traffic Noise Level Inventory - Group 1	MTC	11-79	75 G-211
1131	Stimsonite Delineator	G. M. Smith	12-12-79	78 NM-588
1132	The Michigan Department of Transportation Circular Wear Track--Results of Supplemental Aggregate Polishing Tests, Interim Progress Report	R. W. Muethel	01-80	71 C-13, Phase 2
1133	Precisions of the Aggregate Sample Splitter and Testing Method	W. H. Kuo	11-80	78 TI-483 79 TI-578
1134	Evaluation of Sprinkle Treatment for Improving Skid Resistance of Asphalt Surfaces, Progress Report	J. H. DeFoe	01-80	78 C-19
1135	Reflectorized Traffic Regulator Vests, Progress Report	M. H. Janson G. M. Smith J. D. Truax	04-80	77 G-229
1136	Petrographic Analysis of Coarse Aggregate: County Road Commission No. 3, Pit No. 17-62	R. W. Muethel	02-14-80	79 A-2280
1137	Final Report on Joint Load Transfer Test Road to Evaluate Acme Load Transfer Assemblies, Plastic Coated Dowels and End-of-Pour Construction Joint Assemblies	J. E. Simonsen	03-80	67 F-95 68 F-104
1138	Experimental Evaluation of No-Discharge Recirculation Sewage System for Freeway Rest Areas (On Southbound I-275, North of Monroe)	J. W. Bastian G. Horton, Jr. C. A. Zapata	03-80	75 G-212
1139	Annual Report of Activities of the Michigan Department of Transportation Research Laboratory	MTC	03-80	
1140	Summaries of Michigan Pavement Friction Measurements (1978 Test Program)	P. M. Schafer	03-80	54 G-74

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1141	Preventive Maintenance of Concrete Pavements - US-27, Final Report	J. E. Simonsen	04-80	72 F-123
1142	Interim Report on Effects of Corrosion on Bridges of Unpainted A588 Steel and Painted Steel Types	J. D. Culp G. L. Tinklenberg	06-80	78 G-241
1143	Investigation of Popout Problems on M-14	L. T. Oehler	05-14-80	80 TI-649
1144	Determination of Allowable Movement Ratings for Various Proprietary Bridge Deck Expansion Joint Devices at Various Skew Angles	F. J. Bashore A. W. Price D. E. Branch	05-80	78 G-242
1145	Evaluation of Various Types of Railroad Crossings, Fourth Progress Report	J. E. Simonsen	05-80	75 F-143
1146	Blended Aggregates Tested on the Michigan Department of Transportation Circular Wear Track	R. W. Muethel	05-80	71 C-13 (Phase 2)
1147	Evaluation of 22A Gradation Open Hearth Slag as a Base and Subbase Construction Material, Final Report	J. H. DeFoe	05-80	68 E-43
1148	Air Quality Report for the Ambassador Bridge Tourist Information Center	MTC	07-80	80 AP-28A
1149	Petrographic Analysis and Insoluble Residue Determination of Coarse Aggregate: Thornton Quarry, Pit No. 21-67	R. W. Muethel	07-8-80	80 A-1075
1150	Performance Evaluation of Trinidad Asphalt Cement for Bituminous Concrete Resurfacing, Final Report	C. A. Zapata	07-80	73 C-16
1151	Performance of Several Types of Corrosion Resistant Load Transfer Bars, for as Much as 21 Years of Service in Concrete Pavements	C. J. Arnold	08-80	70 F-116 73 F-136
1152	Base and Subbase Properties Affecting Longitudinal Cracking of I-275	MTC	04-81	79 TI-622
1153	Air Quality Report for M-59 in Macomb County	MTC	09-80	80 AP-30(A)
1154	Screened Legend Quality of Signs from Michigan State Industries and a Review of Screening Materials	M. H. Janson	09-80	80 TI-653
1155	Weathering Steel Guardrail - A Materials Performance Evaluation	R. L. McCrum C. J. Arnold	11-80	78 G-241
1156	Study of Cores for Potential Recycled Concrete Pavement	R. W. Muethel	03-81	78 B-99
1157	Air Quality Measurements of Moveable Asphalt Plants for Recycled Paving Asphalt, Progress Report	J. T. Ellis	11-80	78 G-235
1158	The Relationship of Aggregate Durability to Concrete Pavement Performance, and the Associated Effects of Base Drainability	C. J. Arnold	01-81	73 F-136
1159	Petrographic Analysis of Coarse Aggregate: Salem Gr. Construction Co. Pit No. 63-56	R. W. Muethel	01-21-81	80 A-1089, 1090, 1092, & 1093
1160	Evaluation of Cold-Mix Emulsion Black Base at the Secondary Complex, Final Report	L. T. Oehler	02-19-81	75 E-55
1161	Weatherability of Map Displays	MTC	02-81	80 TI-695
1162	Airport Beason L-801A Photometric Test	MTC	03-81	81-TI-726

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1163	Annual Report of Activities of the Michigan Department of Transportation Research Laboratory	MTC	03-81	
1164	Evaluation of Timber Piles from Fort Street Bridge	C. J. Arnold M. A. Chiunti	03-81	80 TI-722
1165	Simplified Technique for Traffic Noise Level Estimation	F. W. Harwood M. E. Scarlata	04-81	72 G-189
1166	Air Quality Report for M-275 in Oakland County	MTC	04-81	80 AP-31A
1167	American Decal Reflective Sheeting	M. H. Janson	04-81	78 TI-493
1168	Field Evaluation of 3M and American Decal Reflective Signing Materials	J. D. Truax G. M. Smith M. H. Janson	05-81	78 TI-493
1169	Jointed Concrete Pavements-Design, Performance and Repair	C. J. Arnold M. A. Chiunti K. S. Bancroft	05-81	68 F-101 70 F-113 70 F-116 71 F-122 73 F-136 74 F-140
1170	Summaries of Michigan Pavement Friction Measurements (1979 Test Program)	P. M. Schafer	05-81	54 G-74
1171	Concrete Pavement Performance Problems and Foundation Investigation of I-75 from the Ohio Line Northerly to the Huron River	J. E. Simonsen E. C. Novak, Jr.	05-81	54 G-74
1172	Petrographic Analysis of Coarse Aggregate Extracted from Bituminous Pavement Cores, M-55, Control Section No. 83021, 16035A	R. W. Muethel	06-09-81	78 TI-510
1173	Surface Texture Measurements by the Putty Impression Method	C. A. Zapata	06-81	54 G-74
1174	Petrographic Analysis of Coarse Aggregate: Wallace Stone Co. Pit No. 32-4	R. W. Muethel	06-29-01	78 TI-510
1175A	An Inventory of Traffic Noise Levels Along Limited Access Freeways in Michigan (Revision of Research Report R-1013A) (Appendices C and D)	M. E. Scarlata F. W. Harwood	07-81	75 G-211
1176	Petrographic Analysis of Crushed Stone Coarse Aggregate: Michigan Foundation Pit No. 82-6	R. W. Muethel	07-29-81	78 TI-510
1177	Airport Beacon L-801A Photometric Test	MTC	08-81	81 TI-726
1178	A Study of Seasonal Variation in Pavement Conditions by Means of Benkelman Beam Deflection and Frost Depth Measurements	R. C. Mainfort	08-81	75 E-60
1179	PCC Pavement Joint Restoration and Rehabilitation (Federal Highway Administration NEEP Project 27) (Construction Report)	J. E. Simonsen F. J. Bashore A. W. Price	08-81	79 F-159
1180 OR	Fasign Reflective Sheeting	M. H. Janson	12-81	80 TI-707
1181	Kiwalite Reflective Sheeting	M. H. Janson	09-81	80 TI-674
1182	Air Quality Measurements of Moveable Asphalt Plants for Recycling Paving Asphalt (Interim Report for 1981)	J. T. Ellis	11-81	78 G-235

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1183	Evaluation of 'Monoslabs' for Paving Ditches and Service Drives (Final Report)	J. H. DeFoe	11-12-81	74 NM-398
1184	Implementation of Modern Statistical Methods for Improving the Accuracy of Highway Laboratory and Field Data, A Manual	W. H. Kuo	03-82	78 G-238
1185	A Five-Year Evaluation of Preventive Maintenance Concepts on Jointed Concrete Pavement (I-75 and I-696 in Oakland County)	C. J. Arnold M. A. Chiunti K. S. Bancroft	02-82	71 F-122 74 F-140
1186	Petrographic Analysis of Crushed Gravel Coarse Aggregate: Lindberg #3 Pit No. 52-9 and Co. Road Comm. #12 Pit No. 52-67 Combined	R. W. Muethel	01-15-82	78 TI-510
1187	Annual Report of Activities of the Michigan Department of Transportation Research Laboratory	MTC	03-82	
1188	Degradation of Steel Furnace Slag as an Open Graded Base Course for Concrete Pavement	E. C. Novak, Jr.	02-82	80 TI-643
1189	Evaluation of Sulphlex as a Binder in Pavement Resurfacing Mixtures, Progress Report	J. H. DeFoe	02-82	79 D-38
1190	Petrographic Analysis of Combined Crushed and Natural Gravel Coarse Aggregate: M. Glancy Pit No. 60-29	R. W. Muethel	03-12-82	78 TI-510
1191	Early Cracking of a Bituminous Concrete Section of US-2 Located in District 2	E. C. Novak, Jr.	04-82	81 TI-776
1192	Petrographic Analysis of Crushed Stone Coarse Aggregate: Gogebic Range Ski Corp. Pit No. 27-74	R. W. Muethel	03-18-82	78 TI-510
1193	Evaluation of Various Types of Railroad Crossings, Fifth Progress Report	J. E. Simonsen	04-82	75 F-143
1194	Frost Heave Investigation of I-275	E. C. Novak, Jr.	04-82	79 TI-622
1195	Evaluation of Wet Bottom Slag Bituminous Wearing Course, I-94 in Dearborn Heights, Final Report	G. M. Smith	05-82	73 D-28
1196	A Study to Monitor the Deicing Chemical Pollution Prevention System at the Reed City MDOT Maintenance Garage (<i>will be published at a later date</i>)	R. W. Muethel		77 G-227
1197	Static and Dynamic Properties of Anchor Bolts for Sign Supports	C. J. Arnold D. F. Johnson M. A. Chiunti	06-82	77 F-153
1198	Concrete Pavement Cracking, Interim Report	R. L. Felter	06-29-82	78 G-240
1199	Post-Construction Air Quality Monitoring for M-99 in Lansing	MTC	07-82	79 TI-564
1200	Evaluation of Slurry Seal Surface Treatment for Application on the Mackinac Bridge	R. L. Felter J. E. Norton	07-82	78 TI-563
1201	Evaluation of ClaPak and ClaSet as Soil stabilizing Agents	R. C. Mainfort J. H. DeFoe	07-82	79 TI-602
1202	Evaluation of Noise Barriers on I-275 for Structural and Visual Integrity (I-96/ I-275 Interchange, Northeast Quadrant and I-275 from Kippnick Rd. to Edw. Hines Dr.)	F. W. Harwood K. S. Bancroft	07-82	82 TI-799
1203	Further Evaluation of Black Base and Aggregate Base Construction (M-20 and M-66)	R. C. Mainfort	08-82	75 E-59

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1204	Use of Deflection Basin Characteristics for Flexible Pavement Analysis and Overlay Design	J. H. DeFoe	09-82	82 TI-802
1205	ASTM E501 Test Tire Correlation, B. F. Goodrich vs. McCreary	P. T. Luce	11-04-82	54 G-74
1206	Petrographic Analysis of Coarse Aggregate: Wallace Stone Co. Pit No. 32-4	R. W. Muethel	11-03-82	78 TI-510
1207	Petrographic Analysis of Coarse Aggregate: Wallace Stone Co. Pit No. 32-4	R. W. Muethel	11-03-82	78 TI-510
1208	Degradation of Acid-Treated and Untreated Steel Furnace Slag as an Open Graded Base Course for Concrete Pavement	E. C. Novak, Jr.	04-83	80 TI-643
1209	Use of Recycled Asphalt Material in the Construction of a Bituminous Stabilized Base, I-75, Cheboygan County	J. H. DeFoe	11-82	75 D-30
1210	Evaluation of the Straight Line Gradation Chart and the Particle Index Test	MTC	04-82	75 E-57
1211	Infiltration of Subbase Sand into Open Graded Drainage Course (OGDC) Bases	E. C. Novak, Jr.	04-83	80 TI-678
1212	Alternate Repainting Systems for Bridge Structural Steel	F. J. Bashore	03-83	76 G-219
1213	Annual Report of Activities of the Michigan Department of Transportation Research Laboratory	MTC	03-83	MDOT Report No. 359(A)
1214	Air Quality Measurements for Movable Asphalt Plants for Recycling Paving Asphalt	J. T. Ellis	03-83	78 G-235
1215	Revenue Service Brake Lining Temperature Measurements for a Retarder Equipped Bus	L. E. DeFrain	03-83	81 TI-728
1216	Investigation of Steel Furnace Slag Open Graded Drainage Course Base on I-69 Airport Road Ramps	MTC	03-83	80 TI-643
1217	Benkelman Beam Testing of Shoulder and Pavement Recycling Projects	J. H. DeFoe	03-83	81 TI-727
1218	In-Place 22A Aggregate Acceptance Sampling Procedures	W. H. Kuo	04-83	76 G-222
1219	Reflectorized Traffic Flagger's Vest	G. M. Smith		77 G-229
1220	Evaluation of Sulfur-Asphalt Binder for Bituminous Resurfacing Mixtures	J. H. DeFoe	05-83	74 D-29
1221	Evaluation of Breakaway Cable Terminal Endings on Guardrail	B. W. Ness	05-83	82 TI-853
1222	Evaluation of Various Types of Railroad Crossings, Sixth Progress Report	J. E. Simonsen	05-83	75 F-143
1223	Evaluation of Sprinkle Treatment for Improving Skid Resistance of Asphalt Surfaces, Final Report	J. H. DeFoe	05-83	78 C-19
1224	Evaluation of 'Enkamat' as an Aid to Stabilizing a Cut Slope, Final Report	J. H. DeFoe	06-83	81 E-62
1225	An Analytical Survey Procedure for Flexible Pavements - <i>Not Distributed Outside the Testing & Research Division</i>	MTC	06-83	83 TI-883
1226	Stabilized Fly Ash as Lightweight Fill	MTC	06-83	81 TI-785
1227	High Density Concrete Deck Overlay with Superplasticizer	M. G. Brown	06-83	82 TI-801

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1228	The Michigan Department of Transportation Circular Wear Track--Results of Supplemental Aggregate Polishing Tests, Interim Progress Report	R. W. Muethel	04-84	71 C-13 (Phase 2)
1229	Scan 16 - Moisture, Frost, Ice Early Warning System, First Progress Report	F. M. Spica	07-83	82 G-257
1230	Determination of Mean Vehicle Noise Emission Levels in Michigan	F. W. Harwood K. S. Bancroft R. J. Holcom	07-83	78 G-244
1231	Evaluation of Cast-in-Place Joint Repairs in Concrete Pavement	C. A. Zapata	07-83	75 F-150
1232	An Aggregate Wear Index Reduction Factor for Uncrushed Material in Gravel, Summary Report	R. W. Muethel	07-83	71 C-13 (Phase 2)
1233	Load Carrying Capacity of I-75 Bituminous Shoulders in the Flint Area	MTC	07-83	71 C-13 (Phase 2)
1234	Petrographic Analysis of Coarse Aggregate: Michigan Stone Co. Pit No. 58-3	R. W. Muethel	10-21-83	78 TI-510
1235	PCC Pavement Joint Restoration and Rehabilitation (Federal Highway Administration NEEP Project 27) Construction Report	J. E. Simonsen F. J. Bashore A. W. Price	11-83	79 F-159
1236	Possible Sites for Utilizing Excess Soil from I-696, Lahser Road to I-75 to Provide Noise Barriers	F. W. Harwood R. J. Holcom		75 G-211
1237	Performance Evaluation of an Experimental Slurry Seal Emulsion as Filler of Deteriorated Longitudinal Joints in Concrete Pavement Being Prepared for Asphaltic Concrete Resurfacing	C. A. Zapata D. L. Andrews L. J. Pearson	10-83	78 TI-467
1238	Comparison of Aggregate and Bituminous Treated Bases I-75 South of Grayling	R. C. Mainfort E. C. Novak, Jr.	03-84	68 E-42
1239	Evaluation of Sulphlex as a Binder in Pavement Resurfacing Mixtures, Final Report	J. H. DeFoe	03-84	79 D-38
1240	Petrographic Analysis of Dense-Graded Gravel Aggregate: Butkovich #2 Pit No. 49-74	R. W. Muethel	03-27-84	83 TI-916
1240(1)	Petrographic Analysis of Dense-Graded Gravel Aggregate: Garfield #2 Pit No. 49-104	R. W. Muethel	03-27-84	83 TI-916
1240(2)	Petrographic Analysis of Dense-Graded Gravel Aggregate: Ozanich Pit No. 49-97	R. W. Muethel	03-27-84	83 TI-916
1240(3)	Petrographic Analysis of Dense-Graded Gravel Aggregate: Peters Pit No. 49-23	R. W. Muethel	03-27-84	83 TI-916
1240(4)	Petrographic Analysis of Dense-Graded Gravel Aggregate: DNR Pit. No. 49-101	R. W. Muethel	03-27-84	83 TI-916
1241	Annual Report of Activities of the Michigan Department of Transportation Research Laboratory	MTC	03-84	MDOT Report No. 359(A)
1242	Field Trial of Continuous Asphalt Concrete Density Monitoring Devices, Final Report	J. H. DeFoe	03-84	83 D-45

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1243	Performance Evaluation of Plastic Fabrics as Overlay Reinforcement to Control Reflection Cracking	C. A. Zapata M. A. Chiunti L. J. Pearson	04-84	71 NM-286 74 NM-414 72 NM-323 78 NM-552 80 NM-617 78 NM-566
1244	Evaluation of Various Types of Railroad Crossings, Seventh Progress Report	J. E. Simonsen	04-84	75 F-143
1245	Determination of Allowable Movement Ratings for Various Proprietary Bridge Deck Expansion Joint Devices at Various Skew Angles - Second Testing Series	F. J. Bashore A. W. Price D. E. Branch	05-84	78 G-242
1246	Air Monitoring in the Vicinity of I-475 in the City of Flint	MTC	05-84	78 TI-451
1247	Flexible Delineator Posts	B. W. Ness	06-84	81 TI-766
1248	Evaluation of Calcium Magnesium Acetate as an Ice Control Agent, Final Report	J. H. DeFoe	06-84	82 G-259
1249	Evaluation of Glare Screen	B. W. Ness C. J. Arnold M. A. Chiunti	08-84	73 F-135
1250	Monitoring Movement of the Zilwaukee Bridge	B. W. Ness	01-85	82 TI-849
1251	Field Trial of Foamed Asphalt Stabilization, Final Report	MTC	10-84	81 D-41
1252	Scan 16 - Moisture, Frost, Ice Early Warning System, Final Report	F. M. Spica	10-84	82 G-257
1253	An Examination of Studies Which Investigate the Question of Accident Reduction Through Full License Plate Reflectorization	L. F. Holbrook	10-84	84 TI-1024
1254	Investigation of Low Stability Bituminous Base Course US-131 Mecosta County (FF 54014-17762A), Final Report	J. H. DeFoe	11-84	83 TI-942
1255	Current Status Report, Effects of Corrosion on Unpainted Weathering Steel Bridges	R. L. McCrum C. J. Arnold R. P. Dexter	02-85	78 G-241
1256	1976-1982 Performance Tests of "Fast Dry" White and Yellow Pavement Marking Paints	F. J. Bashore	01-03-85	47 G-36
1257	Cost and Energy Considerations Involved in the Recycling of Portland Cement Concrete	F. Copple	06-86	78 B-99
1258	Evaluation of Calcium Magnesium Acetate (CMA) as a Deicing Agent: Corrosion Phase - A Comparative Evaluation of the Effects of CMA vs. Salt (NaCl) on Highway Metals (3-Month Exposure)	R. McCrum J. W. Reincke J. W. Lay	03-85	82 G-259
1259	Improved Joint Sealant Materials for Concrete Pavements, Construction Report	J. W. Simonsen A. W. Price	02-85	78 NM-558
1260	Solar Hot Water Systems in Michigan Rest Areas, Interim Report	F. W. Harwood R. Holcom	05-85	79 G-247
1261	Annual Report of Activities of the Michigan Department of Transportation Research Laboratory	MTC	04-85	MDOT Report No. 359 (A)

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1262	Performance Evaluation of Concrete Pavement Overlays (Construction Report)	J. E. Simonsen A. W. Price	05-85	83 F-162
1263	Reflectorized Traffic Regulator Vest	G. M. Smith	08-85	77 G-229
1264	Reducing Sodium Chloride Usage for Ice Control on Michigan Highways	J. H. DeFoe	08-85	84 G-263
1265	Report to the Salt Task Force on Salt Usage and Accident Incidence	L. F. Holbrook	08-85	84 G-263
1266	Evaluation of Ground and Reclaimed Tire Rubber in Bituminous Resurfacing Mixtures	J. H. DeFoe	10-85	75 D-32
1267	Restoration and Preventive Maintenance of Concrete Pavements	J. E. Simonsen A. W. Price	10-85	79 G-245
1268	Experimental Settling and Skimming Chamber for I-69 Storm Sewer	MTC	11-85	73 G-200
1269	Evaluation of Silane Treated Glass Beads in Polyester Pavement Marking Paint	F. J. Bashore A.W. Price	02-86	83 G-260
1270	Evaluation of Servicised Flex Lok Filler for Pressure Relief Joints, Final Report	F. J. Bashore A. W. Price D. E. Branch	03-86	77 G-224
1271	Experimental Concrete and Bituminous Shoulders, Interim Report	V. T. Barnhart	03-85	72 F-126
1272	Investigation of the Field Coating of Environmentally Exposed Weathering Steel, Interim Report	G. L. Tinklenberg	02-86	83 G-261
1273	Polishing Resistance of Arenaceous Limestone from the Bayport Bedrock Formation	R. W. Muethel	04-86	71 C-13
1274	Use of Boni Fibers on M-99 in Lansing, Final Report	J. H. DeFoe	07-86	83 TI-929
1275	The Development of Michigan's Bridge Painting Specification	G. L. Tinklenberg	07-86	77 G-230
1276	A Study to Evaluate the Performance of Bituminous Wearing Course Containing Sandy Limestone, Final Report	R. W. Muethel	08-86	77 C-18
1277	Evaluation of Weathering Steel in a Detroit Freeway Environment, Second Eight-Year Study	G. L. Tinklenberg	08-86	62 G-122
1278	Evaluation of Bridge Deck Expansion Joints - FHWA Experimental Project #5	A. W. Price J. E. Simonsen	09-86	78 F-154
1279	Effects of Deicing Salts on the Chloride Levels in Water and Soil Adjacent to Roadways, Interim Progress Report	R. W. Muethel	10-86	71 G-180
1280	Bridge Barrier Rail-to-Guardrail Anchoring System	L. J. Pearson	10-86	85 TI-1078
1281	Evaluation of Lime, Fly Ash Base Course Mixtures - Construction Report	V. T. Barnhart	01-87	84 D-47
1282	Experimental Resurfacing of Concrete Bridge Decks with Microsilica Modified Concrete, Initial Report	H. L. Patterson	04-87	85 B-102
1283	Static and Dynamic Properties of Anchor Bolts for Sign Supports, Final Report	B. R. Lower L. J. Pearson	06-87	77 F-153

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1284	Bridge Girder Butt Welds - Resistance to Brittle Fracture, Fatigue and Corrosion	James D. Culp	01-88	75 F-144
1285	Load Tests of the Zilwaukee Bridge, Final Report	Dr. S. R. Kulkarni	11-87	85 F-163
1286	Development of Test for Calcium Carbonate Precipitation in Aggregates	R. W. Muethel	10-87	87 TI-1237
1287	A Comparison of Environmental and Load Effects on Portland Cement Concrete Pavements	L. K. Heinig	02-88	84 TI-1028
1288	Investigation of Bituminous Compaction Requirements for Cold Weather Paving, Final Report	J. H. DeFoe	12-87	84 D-46
1289	Evaluation of Boschung Ice Early Warning System	F. Spica	03-88	82 G-257
1290	Solar Hot Water Systems in Michigan Rest Areas, Second Report	F. Harwood R. Holcom	03-88	79 G-247
1291	Investigation of Steel Beam Guardrail Chemistries	C. J. Arnold L. J. Pearson	05-88	84 TI-978
1292	Concrete Pavement Restoration - Construction Report	J. E. Simonsen A. W. Price	09-88	86 G-267
1293	Comparison of Cracked and Uncracked Flexible Pavements in Michigan, Final Report	J. H. DeFoe	10-88	78 D-36
1294	Low-Slump High-Density Concrete Bridge Deck Overlay	J. E. Simonsen	10-88	75 B-93
1295	Corrosion Evaluation of Calcium Magnesium Acetate (CMA), Salt (NaCl), and CMA/Salt Solutions	R. L. McCrum	12-88	82 G-259
1296	Evaluation of Improved Calcium Magnesium Acetate as an Ice Control Agent, Final Report	J. H. DeFoe	01-89	85 G-266
1297	Calcium Carbonate Precipitate From Crushed Concrete	R. W. Muethel	03-89	87 TI-1276
1298	PCC Pavement Joint Restoration and Rehabilitation (FHWA NEEP Project 27), Final Report	J. E. Simonsen A. W. Price	06-89	79 F-159
1299	Battery Operated Strobelights	G. M. Smith	03-89	86 TI-1168
1300	Field Evaluation of Experimental Fabrics to Prevent Reflective Cracking in Bituminous Resurfacing, Final Report	V. T. Barnhart	07-89	80 NM-617
1301	Freeze-Thaw Evaluation of Selected Rock Types from a Composite Sample of Michigan Gravel	R. W. Muethel	08-89	88 TI-1323
1302	Inspection of Sign Support Structures	Sonny Jadun	09-89	83 TI-955
1303	Performance Evaluation of Concrete Pavement Overlays, Final Report	J. E. Simonsen A. W. Price	12-89	83 F-162
1304	Legibility and Visibility of Retroreflective Sign Materials	R. E. Nordlund D. C. Long G. M. Smith V. C. Andrews	01-90	76 TI-345
1305	Evaluation of "Glasgrid" Bituminous Pavement Reinforcement	V. T. Barnhart	03-90	88 NM-845 89 D-56

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1306	Evaluation of MDOT Maintenance Division Seal Coat Projects, Final Report	V. T. Barnhart	06-90	87 TI-1252
1307	Evaluation of Tensar Bituminous Pavement Reinforcement, Final Report	J. H. DeFoe	10-90	84 NM-718
1308	Evaluation of Ice Detection and Weather Information Systems, Progress Report	J. H. DeFoe M. H. Close	12-90	89 G-274
1309	An Evaluation of A Highway Advisory Radio System in Rest Areas, I-94, Calhoun, Berrien and Van Buren Counties	L. DeFrain J. Foran F. Harwood	04-91	88 TI-1293
1310	Evaluation of Lime, Fly Ash Base Course Mixtures, Final Report	V. T. Barnhart	06-91	84 D-47
1311	Freeze-Thaw Durability and Pore Characteristics of the Major Rock Constituents in Glacial Gravel	R. W. Muethel	07-92	86 A-27
1312	Fine Aggregates Tested on the Michigan Department of Transportation Circular Wear Track	R. W. Muethel	07-91	71 C-13 (Phase 2)
1313	Evaluation of United Salt's Corrosion Inhibitor Intended for Use with Sodium Chloride Deicing Salt	R. L. McCrum J. V. Heffernan	09-91	89 G-271
1314	Determination of the Slip Coefficient for Organic and Inorganic Primers in Bolted Connections	B. R. Lower	09-91	89 TI-1385
1315	Corrosion and Alternate Deicers, Interim Report	R. L. McCrum	10-91	82 G-259 88 G-271
1316	Evaluation of Ice Detection and Highway Weather Information Services, Final Report	J. H. DeFoe	03-92	89 G-274
1317	Alleged Damage to Susan Shilander's House Due to Traffic-Induced Vibrations	E. Quiroga	01-92	91 TI-1562
1318	The Lightweight Pavement Profile Instrument Development and Applications	J. R. Darlington	06-92	84 G-262
1319	Cantilever Sign Structure Inspection, Final Report	B. W. Ness R. D. Till	08-92	Testing Lab Sect M & T Div
1320	Evaluation of Simulated Bridge Deck Slabs Using Uncoated, Galvanized, and Epoxy Coated Reinforcing Steel	R. L. McCrum	02-93	68 F-103 73 F-131
1321	A Comparison of the Corrosion Performance of Uncoated, Galvanized, and Epoxy Coated Reinforcing Steel in Concrete Bridge Decks	R. L. McCrum R. R. Lower C. J. Arnold	03-95	
1322	Effects of Deicing Salts on the Chloride Levels in Water and Soil Adjacent to Roadways, Interim Progress Report	R. W. Muethel	03-93	71 G-180
1323	Development of an Instrumented Vehicle to Measure Roadway Curve and Grade	L. E. DeFrain R. D. Miller J. R. Darlington	04-93	92 G-280
1324	Evaluation of Experimental Painting of A588 Steel Bridges	E. M. Phifer	08-93	83 G-261
1325	Evaluating Low Dusting Abrasives on the Bridge Carrying Covert Road Over US-127	E. M. Phifer	05-93	89 TI-1420
1326	Interior Vehicle Noise From Shoulder Rumble Strips	F. Harwood R. Holcomb	09-93	93 TI-1659

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1327	Concrete Pavement Restoration, Final Report	D. E. Branch	01-95	86 G-267
1328	Evaluation of the Delamination of the Polyurethane Topcoat	D. C. Long	02-94	92 TI-1630
1329	The Influence of Crushed Material on the Strength and Stability of Bituminous Mixtures	J. H. DeFoe	01-95	86 D-54
1330	The Relationship Between Torque, Tension, and Nut Rotation of Large Diameter Anchor Bolts	R. D. Till, PE N. A. Lefke	10-94	91 TI-1556
1331	Advance Warning Arrow Panel Evaluation	D. J. Rogers V. C. Andrews R. E. Nordlund	02-95	93 TI-1698
1332	Investigation of the Air Content of Plastic vs Hardened Concrete	R. W. Muethel	02-95	90 TI-1500
1333	Construction of European Concrete Pavement on Northbound I 75 - Detroit, Michigan	J. A. Weinfurter D. L. Smiley R. D. Till	09-94	92 B-105
1334	Evaluation of Glasgrid Bituminous Pavement Reinforcement Mesh and a Bituminous Separation Course With and Without Latex	V. T. Barnhart	10-95	88 NM-845 89 D-56
1335	Evaluation of Galvanized Pedestrian Bridges	D. C. Long E. M. Phifer	05-95	73 G-197
1336	Proof Load Test of R01 of 61131 M-37 over CSX Railroad, South of Bailey, Michigan	D. A. Juntunen, PE M. C. Isola, PE	10-95	94 TI-1731
1337	Michigan's SMA Project on M-52 - <i>No Report</i>	E. Quiroga		91 D-59
1338	First Year Performance of the European Concrete Pavement on Northbound I-75, Detroit, MI	D. Smiley	02-95	92 B-105
1339	The Distortion Induced Fatigue Cracking of Non-Redundant Structures - <i>No Report</i>	L. J. Pearson	02-95	92 TI-1604
1340	Evaluation of the Uretex Method for Pavement Undersealing	W. H. Opland V. T. Barnhart	08-95	93 G-294
1341	Inspection and Performance Evaluation of Prefabricated Drainage System	V. T. Barnhart	10-98	92 TI-1616
1342	Inspection and Repair of High-Mast Luminaires (HML)	M. C. Isola, PE R. L. McCrum	08-96	91 TI-1594
1343	Second Year Performance of The European Concrete Pavement on Northbound I-75, Detroit, Michigan	D. L. Smiley	06-96	92 B-105
1344	Effect of Elevated Temperature on Fracture Critical Steel Members	R. D. Till, PE	07-96	90 TI-1517
1345	Adoption of a Rapid Test for Determining Aggregate Durability in Portland Cement Concrete	U of M College of Engineering	06-96	
1346	Cause of Concrete Pier Cap Deterioration on the I-75 Bridge over River Rouge (B01 of 82194) in Detroit and Effectiveness of Repair Methods	U of M College of Engineering	09-96	
1347	Load Testing of Bridges	A. S. Nowak V. K. Saraf	10-96	
1348	Investigation of Condition of Prestressed Concrete Bridges in Michigan	D. E. Needham D. A. Juntunen, PE	01-97	85 F-0164

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
1349	Instruction of Concrete T-Beam Bridge During Deck Replacement Partello Road over I-94 Structure No. S04 of 1383	D. A. Juntunen P. W. Wessel	02-97	94 TI-1737
1350	Development of a Mobile System for Measuring Traffic Sign Retroreflectivity	R. E. Nordlund D. C. Long	08-98	92 G-280
1351	Investigation of Precast Deck Panels Used in Spread Box Beam Bridges	R. D. Till D. E. Needham	04-97	95 TI-1796
1352	Performance Evaluation of Isotropic Bridge Decks (Ontario Design), Interim Report	D. E. Needham	05-97	91 F-0170
1353	Investigation of Calcium Hydroxide Depletion as a Cause of Concrete Pavement Deterioration	R. W. Muethel	11-97	94 B-0108
1354	No Report			
1355	Glued-On Fiber Reinforced Plastic (FRP) Sheets for Repair and Rehabilitation	MDOT - R. D. Till, UM, Dept. of Civil & Environmental Engineering	08-97	
1356	Bituminous Crack Filling Test Section on US-10 Near Evert	M. J. Eacker, PE A. R. Bennett	04-98	89 G-0273
1357	Comparison of Methods Used to Produce Hot-Dipped Galvanized W-Bram Guardrail	R. D. Till C. Davis	01-98	97 TI-1831
1358	Study of Michigan's Link Plate and Pin Assemblies	D. A. Juntunen, PE	04-98	93 TI-1683
1359	Bituminous Pavement Resurfacing at Snowmobile Crossings First Year Review	T. D. Miller	03-98	97 D-0065
1360	Polymers in Bituminous Mixtures - Phase II	M. C. Hawley L. T. Drzal G. Baladi Yong-Joon Lee	08-97	
1361	Design Procedures for Concrete Anchors (Mechanical Expansion and Bonded Anchors)	D. Needham D. A. Juntunen, PE	06-98	94 TI-1707
1362	Development of a Guide for Evaluation of Existing Bridges Part I	A. S. Nowak S. Kim	05-98	97 - 0245 DIR
1363	Test Method to Determine the Existence of Segregation in Bituminous Mixtures	T. F. Wolff, PhD, PE G.Y. Baladi, PhD, PE C. M. Chang, MS	09-97	94-1699
1364	Implementing Superpave in Michigan	Pvmt Mgmt Services	1997	
1365	No Report			
1366	No Report			
RC-1367	Monitoring Both Short & Long Term Mechanical Properties for Large Stone Mixtures	MSU - N. Buch	10-98	
R-1368	Comparison of Standard and Deep Bridge Deck Overlay Performances	B. D. Beck	02-99	97 TI-1872

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
RC-1369	Bridge Engineering - Synthesis of Planning, Design, Construction, Maintenance, Materials and Research - <i>Not Published</i>			
R-1370	Field Inspection of Traffic Signal Strain Poles	D. A. Juntunen M. Isola P. Wessel	05-99	94 TI-1706
1371	No Report			
RC-1372	Repair and Strengthening of Reinforced Concrete Beams Using CFRP Laminates	T. Gillespie	04-99	
R-1373	Prestressed Concrete Beam End Repair	D. Needham	10-99	TI 1873
R-1374	Study of Michigan's Continuous Span Variable Depth T-Beam Bridges	D. Juntunen	06-00	93 F-173
RC-1375	No Report			
R-1376	Evaluation of Various Concrete Pavement Joint Sealants	M. Eacker A. Bennett	05-00	G-0300
RC-1377	No Report			
RC-1378	Development of a Guide for Evaluation of Existing Bridges, Phase 2	UM - A. Nowalk, A. Sanli, J. Eom	01-00	
RC-1379	No Report			
R-1380	Prestressed Concrete Beam End Report	D. E. Needham	01-00	
RC-1381	Cost Effectiveness OI: European Demonstration Project: I-75 Detroit	N. Buch R. Lyles L. Becker	05-00	
RC-1382	Repair and Strengthening of Reinforced Concrete Beams Using CFRP Laminates	M. del Mar Lopez A. Naaman	06-21-00	
RC-1383	No Report			
R-1384	Electrochemical Chloride Extraction	S. Kahl	02-01	97 TI-1864
RC-1385	No Report			
RC-1386	Repair of Corrosion-Damaged Columns Using FRP Wraps	MSU - R. Harichandran	12-00	
R-1387	Whitetopping Project on M-46 Between Carsonville and Port Sanilac	M. Eacker	10-00	98 G-0322
RC-1388	Load Test of the Bridge on Old US-27 over Holden Creek in Clinton County (B02 - 19031)	UM - A. Nowak, J. Eom, M. Szerszen	11-00	
RC-1389A	Development of the Procedure for Efficient Evaluation of Bridge Decks	UM - A. Nowak, M. Szerszen, L. Kwasniewski	11-00	98-1303
RC-1389B	Michigan Deck Evaluation Guide	A. Nowak, M. Szerszen - UM D. Juntunen - MDOT	11-00	98-1303

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
R-1390	Investigation of Pavement Problems on I-275 and on I-75 from the Ohio Line Northerly to the Huron River	V. T. Barnhart	02-01	98 TI-1862
R-1391	Investigation of Box Beams Plaza Structures Z01, Z02, and Z03 of 63102 over I-696	D. Needham R. Till	02-01	98 TI-1892
RC-1392	Non Metallic Reinforcement of Concrete Bridge Decks	MSU - P. Soroushian, S. Ravanbakhsh	01-01	96-1068 97 G-0312
RC-1393	Verification of Girder Distribution Factors for Steel Girder Bridges	UM - A. Nowak, J. Eom	05-01	00 TI-1952
R-1394	Evaluation of Minimum Surface Preparation Coatings for Bridge Painting	B. Beck	05-01	94 G-0304
RC-1395	Evaluation of Alignment Tolerances for Dowel Bars and their Effects on Joint Performance	MSU - L. Khazanovich, N. Buch, A. Gotlif	06-01	94-1699
RC-1396	Development of Roughness Thresholds for the Preventive Maintenance of Pavements based on Dynamic Loading Considerations and Damage Analysis - Volume I and Volume II	MSU - K. Chatti, D. Lee, G. Baladi	06-01	94-1699 99-2-1
R-1397	Analysis of the Bridge Barrier Railing Barrier Railing, Type 5; and Bridge Railing, Aesthetic Parapet Tube.	R. D. Till	07-01	TI-1964
RC-1398A	Crash Testing of Michigan's Type B (W-Beam) Guardrail System	Univ. of Nebraska - Lincoln	11-99	
RC-1398B	Crash Testing of Michigan's Type B (W-Beam) Guardrail System - Phase II	Univ. of Nebraska - Lincoln	12-00	
RC-1399	Concrete Mix Design, Process Manual	G. Grove	08-98	95-0252
R-1400	Field Evaluation of Experimental Low VOC Bridge Paints	B. D. Beck	07-02	G-303
RC-1401	Investigation of Transverse Cracking on Michigan PCC Pavements over Open-Graded Drainage Courses	UM - W. Hansen, E. Jensen	11-98	
R-1402	Michigan Intelligent Transportation Systems Infrastructure: Structural Evaluation and Inspection Procedures - <i>Not Published</i>	A. Gilani, D. A. Juntunen, L. Pearson		
RC-1403	Evaluation of Concrete Permeability by Ultrasonic Testing Techniques	WSU - I. O. Yaman, H. Aktan, H. Karaca	01-01	
RC-1404	Transverse Crack Propagation of JPCP as Related to PCC Toughness	UM - W. Hansen, E. Jensen	08-01	95-0252 98-8-1
RC-1405	Construction Project Scheduling at MDOT	MTU - K. Mattila, R. Gronevielt	12-99	96-5434 99-MTU-5
RC-1406	A Comparative Bond Study of Stainless Steel Reinforcement in Concrete	MTU - T. Ahlborn, T. Denhartigh	01-02	96-5434 01-MTU-1
RC-1407	No Report			
R-1408	A-588 Bridge Mounted Sign Failure Investigation	D. Juntunen, PE	01-02	TI 1976
RC-1409	Synthesis and Review of Superpave Implementation	MTU - R. C. Williams	03-02	96-5434; 00-MTU-6 TI-1976

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
RC-1410	Development of Laboratory Performance Test Procedures and Trial Specifications for Hot Mix Asphalt, Final Report	MTU - R. C. Williams, K. Hofmann	10-04	96-5434 00-MTU-5
RC-1411	Development and Evaluation of the Lane Merge Traffic Control System at Construction Work Zones	WSU - T. Datta, K. Schattler, C. Hill	12-01	00-0781
R-1412	Investigation of Steel Box Girder Pier Caps on S05 of 63103	R. Till	06-02	TI-1997
RC-1412	Causes and Cures for Prestressed Concrete I-Beam End Deterioration	MTU - T. Ahlborn WSU - H. Aktan	08-02	01-MTU-8-1 01-0364
RC-1413	Investigation of the Adequacy of Current Bridge Design Loads in the State of Michigan	MTU - J. vanDelindt WSU - G. Fu	07-02	01-MTU-9-4 01-0363
R-1414	Performance Evaluation of Adhesive Anchors Under Sustained Loading <i>Not Published</i>	A. Gilani P. Jansson		TI-1919
RC-1415	Evaluation of the Dynamics of Fracture Characteristics of Aggregate in PCC Pavement	S. Vitton G. Dewey G. Subhash	12-02	96-5434 98-MTU-2-1
RC-1416	Identify Causes for Under Performing Rubblized Concrete Pavement Projects; Volume I and Volume II	MSU - G. Baladi, T. Svasdisant	08-02	94-1699 00-3-1
R-1417	Three Year Evaluation of Whitetopping Project on M-46	M. J. Eacker	02-04	98 G-0322
R-1418	Agricultural By-Products for Anti-icing and Deicing Use in Michigan	S. Kahl	12-02	SPR Project 56830
RC-1419	Work Item Production Rates for MDOT Projects	MTU - K. Mattila, M. Dina	06-02	96-5434 01-MTU-5
RC-1420	A Comparison of MDOT Schedules as a Result of Special Provision for Progress Schedule FUSP102G	MTU - K. Mattila, M. Bowman	06-02	96-5434 01-MTU-6
RC-1421	Detecting and Quantifying Segregation in Bituminous Pavements and Relating its Effect Condition; Final Report and Appendix E	MSU - T. Wolff, G. Baladi, C. Chang	03-02	94-1699 98-2-1
RC-1422	Field Performance of Polymer Bridge Deck Overlays in Michigan	MTU - R. Alger, S. Gruenberg, J. Wegleitner	01-03	96-5434 01-MTU-3
R-1423	Concrete Surface Texture Study	R. Muethel T. Miller	05-04	71 C-0013
RC-1424	Criteria and Benefits of Penetrating Sealants for Concrete Bridge Deck	WSU - H. Aktan, U. Attanayaka, S. Ng	12-02	2001-0339
RC-1425	A Study of Materials-Related-Distress (MRD) in Michigan's PCC Pavements - Phase 2	MTU - T. VanDam MSU - N. Buch, K. Peterson, L. Sutter	12-02	96-5434 99-MTU-3
RC-1426	Mechanistic Design Implementation Plan for Flexible Pavements and Overlays	MSU - G. Baladi	11-97	94-1699
RC-1427	Factors Affecting the Deterioration of Transverse Cracks in JRCP	MSU - J. Bruinsma	03-95	90-0973
R-1428	Research Annual Report FY 00, 01, 02	T&R Section	03-03	
RC-1429	Verification of Girder Distribution Factors for Continuous Steel Girder Bridges	UM - A. Nowak, J. Eom, D. Ferrand	05-03	95-0242 #15

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
RC-1430	Analytical Design Procedures and Load Rating for Isotropic Bridge Decks	UM - M. Szerszen, A. Nowak, D. Ferrand	05-03	95-0242
R-1431	Perpetual Pavement Demonstration Project on US-24 in Detroit	T. Hynes M. Eacker K. Bancroft	04-04	D-0066
RC-1432	Aggregate Research Documentation Services - <i>Not Published</i>	G. Grove S. G. Research Services	11-01	2001-0333
RC-1433A	Effect of Truck Loading on Bridges	UM - A. S. Nowak	12-94	
RC-1433B	Truck Loads on Selected Bridges in the Detroit Area	UM - A. S. Nowak	12-94	
RC-1434	Analysis of Bystander Noise Generated by Vehicle/Road Surface Interaction	MTU - J. Blough, G. Gwaltney	05-03	96-5434
RC-1435	Sensors to Monitor Bond in Concrete Bridges Rehabilitated with FRP	MSU - R. Harichandran, Sangdo Hong	10-03	2001-0365
RC-1436	Development of Alternative Pavement Distress Index Models	MSU - G. Abu-Lebdeh, R. Lyles, G. Baladi, K. Ahmed	11-03	94-1699 Authorization 28
RC-1437	Investigative Causes and Develop Methods to Minimize Early-Age Deck Cracking on Michigan Bridge Decks	WSU	12-03	2002-0223
RC-1438	Durable Link Slabs for Jointless Bridge Decks Based on Strain-Hardening Cementitious Composites	UM - V. Li	11-03	95-0242 Authorization 12
RC-1439	Safety Performance Evaluation of Michigan's Temporary Traffic Control Devices - <i>No distribution per project manager, Jeff Grossklaus</i>	U Nebraska-Lincoln - K. Polivka	01-03	99-0460
RC-1440	Determining the Causes of Top-Down Cracks in Bituminous Pavements	MSU - G. Baladi	08-03	94-1699
RC-1441	A Preliminary Mechanistic Evaluation of PCC Cross-Sections Using ISLAB2000 - A Parametric Study	MSU - N. Buch MTU - D. Gilliland T. VanDam	08-04	
RC-1442	The Evolution and Application of MDOT Aggregate Specifications	G. Grove	09-04	2002-0300
RC-1443	Petrographic Evaluation of Cores from the Mosel Avenue Bridge	MTU - T. VanDam, K. Peterson	03-04	96-5434
RC-1444	Preliminary Investigation of the Role of Bacteria in Concrete Degradation		04-04	
RC-1445	Causes and Cures for Cracking of Concrete Barriers	MTU	04-04	
RC-1446	Safety Performance Evaluation of Michigan's 4x5 Portable Sign Support	U Nebraska-Lincoln - K. Polivka	06-03	
RC-1447	No Report			
RC-1448	Causes and Cures for Cracking of Concrete Barriers	WSU - H. Aktan, U. Attanayaka	08-04	2002-0341
RC-1449	Report on the Risk Assessment of the I-196 Interstate Section Located over the former Domtar Mine, Grand Rapids	MTU - S. Vitton	03-04	96-5434

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
RC-1450	Development of a Computer Program for Dynamic Back Calculation of Flexible Pavement Layer Moduli	MSU - K. Chatti, R Harichandran	06-04	94-1699
RC-1451	Development and Evaluation of an Advanced Dynamic Lane Merge Traffic Control System for 3 to 2 Lane Transition Areas in Work Zones	WSU - T. Datta, K. Schattler, P. Kar, A. Guha	01-04	2002-0513
RC-1452	Freeze-Thaw Evaluation of Large Coarse Aggregate Using MDOT's Confined and Unconfined Methods	UM - W. Hansen, K. Jensen, E. Jensen	09-04	95-0242
RC-1453	Qualify Transverse Cracking in PCC Pavement from Loss of Slab-Base Contact	UM - W. Hansen	09-04	95-0242
RC-1454	Development of Steel Beam End Deterioration Guidelines	MTU - J. vandeLindt, T. Ahlborn	01-05	
RC-1455	Inspection and Deterioration of Bridge Decks Constructed Using Stay-in-Place Metal Forms and Epoxy-Coated Reinforcement	LTU - N. Grace, J. Hanson, H. AbdelMessih	10-04	2002-0134
RC-1456	Premature Deterioration in Michigan Jointed Concrete Pavements on Open Graded Drainage Courses Draft Report	UM - W. Hansen MTU - T. VanDam	11-97	
RC-1456A	Effects of Multiple Damage-Heat Straightening Repairs on the Structural Properties of Bridge Steels	MSU - A. Varma, K Kowalkowski	11-04	94-1699
RC-1457	Uses of Recycled Concrete in Michigan	UM - W. Hansen	11-95	
RC-1457A	Determine the Impact of the AASHTO LRFD Bridge Code and Transition the Department into the Use of the AASHTO LRFD Design Code	UM - A. Nowak, A. Naaman,	09-04	95-0242
R-1458	Research Annual Reports, FY00-01; FY02-03; FY04	Dr. S. Kulkarni N. Crider	12-04	
RC-1459	Mineral Characterization and Cataloging of Quarried Aggregate Sources Used in Michigan Highway Construction	MTU - A. Robords	01-05	95-0242
R-1460	No Report			
RC-1461	Effect of Michigan Multi-Axle Trucks on Pavement Distress, Phase I - <i>No Distribution</i>	MSU - K. Chatti	02-04	94-1699
R-1462	European Concrete Pavement Tour	R. Till R. Van Portfliet	11-92	
R-1463	Specifications for European Concrete Pavement	Demo Project	08-93	
RC-1464	Report on the 1992 U.S. Tour of European Concrete Highways	AASHTO/FHWA	1992	
R-1465	Unbonded Concrete Overlay Demonstration Project on I-75 in Ogemaw County - Construction Report	M. Eacker A. Bennett	06-05	G-0333
RC-1466	LRFD Load Calibration for State of Michigan Trunkline Bridges	WSU - G. Lu CSI - J. vandeLindt MDOT - R. Till	08-06	
RC-1467	Field Test of Variable Speed Limits in Work Zones in Michigan	MSU	09-03	61-5549
RC-1468	Development of a Pavement Management System	MSU - T. Maleck, V. Oulevski	12-04	2000-0232

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
R-1469	Multi-State Coarse Aggregate Freeze Thaw Comparison	T. B. Woodhouse	07-05	TI-2042
RC-1470	Condition Assessment and Methods of Abatement of Prestressed Concrete Box Beam Deterioration - <i>No Distribution</i>	MTU	11-05	
RC-1471	Field Demonstration of Durable Link Slabs for Jointless Bridge Decks Based on Strain-Hardening Cementitious Composites	UM - V. Li, M. Lepech, M. Li	12-05	2003-0026; #2
RC-1472	A Study of the Effectiveness of the Use of Steady Burn Warning Lights on Drums in Construction Work Zones	WSU	2005	2002-0546
RC-1473	Analysis of the Benefits of Bulk Pre-Wetting Solid Salt with Several Different Liquids	MTU - R. Alger, J. Haase	01-06	
R-1474	Investigation of Breakaway Light Standards	S. Kahl R. Till	04-06	04-TI-2047
RC-1475	Deer-Vehicle Collisions: Understanding of Accident Characteristics and Drivers Attitude Awareness and Involvement	MSU - S. Riley, A. Marcoux	01-06	2002-0532
RC-1476	Environmental Factors Affecting the Rate of Deer Vehicle Crashes in Southern Michigan	MSU - S. Riley, K. Sudharsan	01-06	2002-0532
R-1477	Evaluation of Exhaust Gas Emissions and Worker Exposure from Asphalt-Rubber Binders in Hot Mix Asphalt Mixtures	Wildwood	05-94	
RC-1478	Economic Benefits of the Michigan Department of Transportation's 2005-2009 Highway Program	EDR/UM	01-05	2003-0026
RC-1479	No Report			
RC-1480	No Report			
RC-1481	PCC Pavement Acceptance Criteria for New Construction when Built-In Curling Exists	UM - W. Hansen		2003-0026; #1
R-1482	Absorption Capacity of Coarse Aggregates for Portland Cement Concrete	J. F. Staton	09-06	
RC-1483	No Report			
RC-1484	High Performance Material for Rapid Durable Repair of Bridges and Structures	UM - V. Li, M. Li, M. Lepech	12-06	
RC-1485	No Report			
R-1486	No Report			
RC-1487	A Laboratory Evaluation of Alignment Tolerances for Dowel Bars and Their Effect on Joint Opening Behavior	MSU - N. Buch, A. Varma, M. Prabhu	02-07	
RC-1488	Analytical Investigation of the Effects of Aligned Dowel Bars Coated with Corrosion Protective Systems on Initial Dowel Concrete Bond Stresses	MSU - N. Buch, A. Varma, M. Prabhu	02-07	
RC-1489	Experimental Evaluation and Field Monitoring of Prestressed Box Beams for SCC Demonstration Bridge	MSU - R. Burgueno, D. Bendert	07-07	2002-0532
RC-1490	Bridge Deck Corner Cracking on Skewed Structures	WSI - G. Fu, J. Feng, J. Dimaria, Y. Zhuang	09-07	2002-0546; #4

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
R-1491	Chloride Content in Segments of the Zilwaukee Bridge	R. D. Till	05-07	
RC-1492	Developing Guidelines for Use of Pedestrian Countdown Traffic Signals	MSU - G. Abu-Lebdeh, J. Engle, T. Maleck	01-07	
R-1493	Graphical Analysis of Freeze-Thaw Test Results	R. W. Muethel	05-07	
R-1494	Graphical Analysis of Iowa Pore Index Test Results	R. W. Muethel	05-07	
R-1495	Effects of Deicing Salts on the Chloride Levels in Water and Soil Adjacent to Roadways	R. W. Muethel	07-07	
RC-1496	Reconstructing the Michigan State Police Test Tracks to Enable Evaluation of Advanced Traffic and Pavement Engineering Concepts	MSU - G. Abu-Lebdeh, F. Dion, K. Chatti, T. Maleck	07-07	
RC-1497	Resilient Modulus at the Limits of Gradation and Varying Degrees of Saturation	MTU - T. Mayrberger, R. Hodek	11-07	2003-0063; #8
R-1498	Performance of Michigan's Concrete Barriers	J. F. Staton J. Knauff	08-07	
R-1499	Corrosion Resistant Alloy Steel (MMFX) Reinforcing Bar in Bridge Decks	S. Kahl	09-07	01-TI-1980
RC-1500	Evaluation of the Dynamic Late Lane Merge System at Freeway Construction Work Zones	WSU - T. Datta, C. Hartner, L. Grillo	09-07	2002-0546; #1
RC-1501	Investigation of Early Cracking on Selected JPCP Projects	MDOT - D. Smiley UM - W. Hansen	11-07	95-0242
RC-1502	Improved Shallow Depth Patches for Concrete Structures	MSU - R. Harichandran, G. Nossoni	02-08	2002-0532
RC-1503	Quantifying Coefficient of Thermal Expansion Values of Typical Hydraulic Cement Concrete Paving Mixtures	MSU - N. Buch, S. Jahangirnejad	01-08	
RC-1504	Effect of Michigan Multi-Axle Trucks on Pavement Distress and Profile, Volume I to III	MSU - K. Chatti, A. Manik, H. Salama, N. Brake, S. Haider, C. Mohtar, H. Lee	02-09	
RC-1505	Development of a Simple Diagnostic Tool for Detecting Localized Roughness Features	MSU - K. Chatti, I. Zaabar, H. Lee	02-09	
RC-1506	Field Demonstration of Durable Link Slabs for Jointless Bridge Decks Based on Strain-Hardening Cementitious Composites – Phase 3: Shrinkage Control	UM - V. Li, E. Yang, M. Li	03-08	2003-0025, #10
RC-1507	Evaluation of Prefabricated Composite Steel Box Girder Systems for Rapid Bridge Construction	MSU - R. Burgueno, B. Pavlich	02-08	
RC-1508	Identification Of Causes And Development Of Strategies For Relieving Structural Distress In Bridge Abutments	MSU - R. Burgueno, Z. Li	02-08	
RC-1509	Use of Unbonded CFCC for Transverse Post-Tensioning of Side-by-Side Box-Beam Bridges	LTU - N. Grace, E. Jensen	02-08	2004-0105
RC-1510	Location and Stability Analysis of the Michigamme Underground Mine for the US-41 Re-Alignment in Marquette County, Michigan	MTU - S. Vitton	08-08	
R-1511	Recommendations for Michigan Specific Load and Resistance Factor Design Loads and Load and Resistance Factor Rating Procedures	R. Curtis R. Till	04-08	

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
R-1512	Evaluation of Grout-Filled Mechanical Splices for Precast Concrete Construction	P. Jansson	05-08	07 TI-2094
RC-1513	Evaluation of Economic Impacts of Michigan VII Program (Vehicle Infrastructure Integration)	MSU - S. Biswas, W. Taylor, K. Rajendra; CAR - S. McAlinden, K. Hill, D. Menk	09-07	
RC-1514	Combining Link Slab, Deck Sliding over Backwall, and Revising Bearings	WMU - H. Aktan, U. Attanayake, E. Ulku	07-08	2006-0415
R-1515	Performance of Isotropic Bridge Decks	P. Jansson	06-08	91 F-0170
RC-1516	Evaluation of the 1-37A Design Process for New and Rehabilitated JPCP and HMA Pavements	MSU - N. Buch, K. Chatti, S. Haider, A. Manik	10-08	
R-1517	Analysis of Stress Distribution in Link Plates Used for Suspending Bridge Beams	P. Jansson	09-08	07 TI-2097
RC-1518	Evaluating the Economic Benefits to Michigan of Alternative Road-Bridge Investment Mixes	UM - G. Fulton, D. Grimes, L. Petraglia	03-08	2003-0026
R-1519	Calculating the Critical Buckling Stress for Plates With One Free Edge Under Combined Axial and Flexural Forces	R. Curtis R. Till	09-08	
RC-1520	Methodology of Homogeneous and Non-Homogeneous Markov Chains for Modeling Bridge Element Deterioration	Wayne SU - G. Fu, D. Devaraj	08-08	
RC-1521	Development of Simple Performance Tests Using Laboratory Test Procedures to Illustrate the Effects of Moisture Damage on Hot Mix Asphalt	MTU - R.C. Williams, J. Bausano, A. Kvasnak	04-06	
RC-1522	Development of Acceptance Criteria of Compacted Hot Mixture Asphalt Bulk Specific Gravity Based on Vacuum Sealed Specimens: Final Report	MTU - R.C. Williams, B. Williams, A. Kvasnak, B. Stanton, T. VanDam	10-05	
RC-1523	Performance Evaluation of JRCP with Stabilized Open-Graded Drainage Course	UM - W. Hansen	08-09	2003-0026 Z6
RC-1524	Value Affect of Construction Incentive Payments on Pavement Performance	MSU - G. Baladi, B. Leveret	08-09	2006-0411
RC-1525	Ultra-High Performance Concrete for Michigan Bridges, Material Performance - Phase I, Final Report	MTU - T. Ahlborn, E. Peuse, D. Misson	11-08	2003-0026 Z20
RC-1526	Estimate of Cliff Recession Rates for the Baraga Cliffs	MTU - S. Vitton, A. Williams	08-08	
RC-1527	Condition Assessment and Methods of Abatement of Prestressed Concrete Box-Beam Deterioration - Phase II	WMU - H. Aktan, U. Attanayake, E. Ulku; MTU - T. Ahlborn, Y. Deshpande	04-09	2006-0415 Z2

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
R-1528	Absorption Capacity of Coarse Aggregates for Portland Cement Concrete	John F. Staton, PE Joseph D. Anderson	02-09	
R-1529	Overload Truck Wheel Load Distribution on Bridge Decks	Roger D. Till, PE	04-09	
R-1530	Cement Kiln Dust Stabilized Test Section on I-96/I-75 in Wayne County – Construction Report	N. Bandara, M. Grazioli	05-09	
RC-1531	Pavement Subgrade MR Design Values for Michigan's Seasonal Changes	MSU - G. Baladi, T. Dawson, C. Sessions	07-09	2002-0532 Z20
RC-1532	Development of Specifications for Superpave Simple Performance Tests	MTU - Z. You, S. W. Goh, R. C. Williams	05-09	2006-0414 Z2
RC-1533	Evaluation of Concrete Pavements with Materials-Related Distress	MTU - L. Sutter, T. VanDam, K. Peterson	03-10	2003-0063 Z20
RC-1534	Durability Study of the US-23 Aggregate Test Road and Recent JPCP Projects with Premature Joint Deterioration	UM - W. Hansen, Y. Kang	12-10	2006-0412 Z1
RC-1535	Development of New Test Procedures for Measuring Fine and Coarse Aggregate Specific Gravities	MTU - Z. You, J. Mills-Beale, R. C. Williams, Q. Dai	12-09	2006-0414 Z8
RC-1536	A Sensor Network System for the Health Monitoring of the Parkview Bridge Deck	WMU - O. Abudayyeh	01-10	2004-0090 Z3
RC-1537	Characterization of Truck Traffic in Michigan for the New Mechanistic Empirical Pavement Design Guide	MSU - N. Buch, S.W. Haider, J. Brown, K. Chatti	12-09	2006-0411 Z8
R-1538	Fifteen Year Performance Review of Michigan's European Concrete Pavement	D. L. Smiley	02-10	
RC-1539	An Evaluation of Right-Turn-In/Right-Turn-Out Restrictions in Access Management	MSU - R. Lyles, B. Malik, A. Chaudhry, G. Abu-Lebdeh, M. Siddiqui	09-09	2006-0411 Z9
RC-1540	Assessment of Pavement Acceptance Criteria and Quantifying its As-Constructed Material and Structural Properties	Michigan State Univ.	03-11	2006-0411 Z4
RC-1541	Skewed Bridges (Not Yet Published)	Wayne State Univ.		2006-0413 Z4
RC-1542	Educating the Public on Navigating Roundabouts	Wayne State Univ.	03-11	2009-0748 Z1
RC-1543	Evaluation of Steady-Burn Warning Lights on Channelizing Drums in Work Zones	WSU - T. Datta, T. Gates, P. Savolainen, P. Nannapaneni	12-10	2009-0748 Z2
RC-1544	Using Recycled Concrete in MDOT's Transportation Infrastructure – Manual of Practice	MTU – T. Van Dam, K. Smith, C. Truschke, S. Vitton	08-11	2006-0414 Z12
RC-1545	Michigan Ohio University Transportation Center – Multiple Reports	Univ. of Detroit Mercy	12-10	2007-0538

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
RC-1546	Effects of Debonded Strands on the Production and Performance of Prestressed Concrete Beams	MSU - R. Burgueno, Y. Sun	01-11	2006-0411 Z7
RC-1547	A Critical Evaluation of Bridge Scour for Michigan Specific Conditions	LTU - D. Carpenter WSU - C. Miller	02-11	2006-0413 Z3 2007-0436 Z1
RC-1548	Backcalculation of Unbound Granular Layer Moduli	MSU – G. Baladi	03-11	2006-0411 Z15
RC-1549	ECR Bridge Decks: Damage Detection & Assessment of Remaining Life for Various Overlay Repair Options (Parts I & II)	MSU- R. Harichandran, G. Zhang	01-11	2002-0532 Z19
RC-1550	Sustainable Recycled Materials for Concrete Pavements	Applied Pave.Tech – P. Ram, T. VonDam, J. Meijer, K. Smith	03-11	2009-0663 Z1
RC-1551	Extending the Life of Asphalt Pavements	Applied Research Assoc. Inc	05-11	2009-0670 Z1
RC-1552	Impact of Hydrated Cement Paste Quality and Entrained Air Void System on the Durability of Concrete	MTU – L. Sutter	06-11	2006-0414 Z10
RC-1553	Carbon Footprint for Hot Mix Asphalt and Portland Cement Concrete Pavements	MTU – A. Mukherjee	06-11	2006-0414 Z22
RC-1554	Developing a Congestion Mitigation Toolbox	TTI – J. Crawford, T. Carlson, W. Eisele, B. Kuhn	09-11	OR 09093
RC-1555	Safety Analysis of 4-Lane to 3-Lane Conversions (Road Diets) in Michigan	MSU - Lyles	01-12	2010-0294 Z2
RC-1556	Laboratory Evaluation of Warm Mix Asphalt (WMA)	MTU – You	09-11	2006-0414 Z21
RC-1557	Feasibility of Digital Imaging to Characterize Earth Materials (Not Yet Published)	UM – R. Hryciw		OR09-158 109198
RC-1558	Study of Most Effective Practices for Determining Construction Contractors' Eligibility to Bid on Construction Projects (Not Yet Published)	Dye Management – B. Dye	03-10	2009-0463
RC-1559	Strategies for Improving Traveler Information (Not Yet Published)	Cambridge Systematics, Inc – C. Hedden	01-11	2009-0669 Z1
RC-1560	Stainless and Stainless-Clad Reinforcement for Highway Bridge Use (Not Yet Published)	S. Kahl (MDOT)		
RC-1561	Improving Driver Safety with Behavioral Countermeasures	CMU – R. Backs	09-11	2009-0749 Z1
RC-1562	Low-Cost, High-Impact Measures to Meet the Transportation Needs of Michigan's Aging Population	UM – D. Eby, L. Molnar, L. Kostyniuk, R. St. Louis, N. Zanier	09-11	2010-0296 Z1
RC-1563	High Skew Link Slab Bridge System with Deck Sliding over Backwall or Backwall Sliding over Abutment	WSU – H. Aktan	09-11	2006-0415 Z3
RC-1564	Development and Validation of a Sensor-Based Health Monitoring Model for Parkview Bridge Deck (Not Yet Published)	S. Kahl (MDOT)		
RC-1565	Evaluating Performance and Making Best Use of Passing Relief Lanes	Opus International – J. Bagdade	12-11	2010-1278 Z1

REPORT NO.	TITLE	AUTHOR	REPORT DATE Mo-Day-Yr	RESEARCH PROJECT NO.
RC-1566	Evaluating the Performance and Effectiveness of Roundabouts	Opus International – J. Bagdade	12-11	2010-0278 Z2
RC-1567	Investigate Causes and Develop Methods for Preventing Falling Concrete from Bridge Decks (Not Yet Published)	LTU		
RC-1568	Usage and Impact of the Vehicle Infrastructure Integration (VII) Program (Not Yet Published)	K. Garrett (Mixon-Hill)		
RC-1569	Re-Examination of the 1994 and Subsequent sewer and Culvert Installations of Various Pipe Types, Sizes and Depths (Not Yet Published)	URS		2011-0282
RC-1570	Evaluating the Appropriate Level of Service for Michigan Rest Areas and Welcome Centers Considering Safety and Economic Factors (Not Yet Published)	WSU		2010-0298 Z1
RC-1571	ID Causes and Solution Strategies for Deck Cracking in Jointless Bridges (Not Yet Published)	Dr. R. Burgueno		2009-0746 Z1
RC-1572	Sharing the Road - Optimizing Pedestrian and Bicycle Safety and Vehicle Mobility (Not Yet Published)	J. LaPlante		2010-0352
RC-1573	Slippery Road Detection and Evaluation (Not Yet Published)	R. Robinson		2009-0747 Z1/R1
RC-1574	Improved Performance of JPCP Overlays (Not Yet Published)	Dr. W. Hansen		2009-0747 Z4
RC-1575	Impact of Non-Freeway Rumble Strips - Phase 1 (Not Yet Published)	Dr. T. Datta		2009-0748 Z3
RC-1576	A Framework for Statewide Roadway Asset Management (Not Yet Published)	Dye Management		2011-0052
RC-1577	Review and Revision of Overload Permit Classification (Not Yet Published)	Michael Baker, Jr., Inc		2010-0317 Z1