Transportation

Kentucky Transportation Center Research Report

University of Kentucky

Year 1972

Chronological Listing of Research Reports

Division of Research, Kentucky Department of Highways

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Research Report
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RESEARCH REPORTS

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Division of Research

DEPARTMENT OF HIGHWAYS
Commonwealth of Kentucky

January 1972
1939

2. Cooperative Investigation of Joint Spacing in Concrete Pavements, Campbell, Louis.


4. An Outline of Prospective Research, Gregg, L. E.; December.

5. Summary Report of Concrete Investigations in Research Projects C-1, C-2, C-3, and C-17, Collier, S. T.; December.


15. Outline of Proposed Study of Sand Used as Concrete Fine Aggregates, March.


19. A Summary of Experiments with Air Entrainment in Cement Concrete, September.


1947


Memorandum Report on Research with Mulches for Roadside Grasses, March.


Bond Characteristics of Commercial and Prepared Reinforcing Bars, Collier, S. T.; March; also Journal of the American Concrete Institute, Vol 18, No 10, June.


Porous Backfill, Baker, R. F.; March.

Interim Report on Experiments with Western Kentucky Bank Gravel in Bituminous Concrete, June.

Report No. 1 on an Experiment with Expanded-Metal Integrating Mats in Bituminous Concrete Pavements, September.


Outline of Research Proposed for a Study of the Relationship between Subgrade California Bearing Ratios and Pumping of Rigid Pavements, April.

Supplementary Report No. 1 on Experiments with Air Entrainment in Cement Concrete, October; also Experiments with Air Entrainment in Cement Concrete, Gregg, L. E.; Bulletin No. 5, Engineering Experiment Station, University of Kentucky, September.

Memorandum Report on ReflectORIZING Surfaces for Signs and Markers, Gregg, L. E.; January.


Memorandum Report on Cold-Applied Mastic-Type Crack and Joint Filler Compound, Gregg, L. E.; May.


A Laboratory Investigation of Mineralogical, Chemical and Physical Properties of Limestone Aggregates, Young, J. L., Jr.; Havens, J. H.; and Gregg, L. E.; December; also Abstracts, Highway Research Board, Vol 19, No 6, June 1949.

1949


Memorandum Report on Maintenance Installation of Cold Mastic Joint Filler on KY 50 in Fayette County, Gregg, L. E.; February.

An Examination of Equipment for Preventing Segregation in Storage of Coarse Aggregates, Collier, S. T.; February.
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<td>55</td>
<td>Progress Report No. 1 on an Installation of an Experimental Joint for Concrete Pavements, Field, H. J., Jr.; February.</td>
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<td>Memorandum Report on Proposed Specification Class I, Type C and Blade Spreading Hot Mixes, Gregg, L. E.</td>
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68. Final Report on Evaluation of Plant Mix Surface Treatments by Road Test Sections, Drake, W. B.; July.


70. Memorandum Report on Vibratory Compaction of Base Courses, November.

71. Observation on Seal Coats, Tack Coats, Penetration Macadam, and Blade Spread Hot Mix in 1951, Drake, W. B. and Field, H. J., Jr.; December.


1952


75. Report No. 1 on a Bank Gravel Base Containing Calcium Chloride, Drake, W. B.; February.


81. Memorandum Report on Vibratory Compaction of Base Courses, November.

82. Report No. 1 on a Limestone-Calcium Chloride Stabilized Base, Drake, W. B.; August.


85. A Compendium on Class I, Type C Mixes, Williams, E. G.; December.


87. Report No. 4 on a Concrete Pavement without Transverse Joints, Drake, W. B.; December.

88. Report No. 2 on a Bank Gravel Base Containing Calcium Chloride, Drake, W. B.; December.

89. Report No. 2 on an Investigation of Lean Concrete Mixes as Base Courses for Bituminous Surfaces, Sawyer, D. H.; December.
1953

90. Report No. 2 on a Test Road for the Evaluation of Sandstone as an Aggregate in Plant-Mix Bituminous Pavements, Williams, E. G.; April.

91. Applications of Geology to Highway Engineering in Kentucky, Gregg, L. E. and Havens, J. H.; February.

92. Report No. 1 on Vibratory Compaction of a Macadam Base, Williams, E. G.; December.


1954

96. Pavement Investigation, Middletown-Eastwood Portion of U. S. 60 Louisville-Shelbyville Road, Drake, W. B.; June.


100. Application of Wire Mesh Reinforcement to Asphalthic Concrete Pavement Overlays, Franklin-Shelby County Project FI 172(12), Williams, E. G.; December.

101. Memorandum Report on Inspection of Full Depth Modified Dense-Graded Aggregate Base, Plant Mixed (Tennessee Project), Drake, W. B.; December.


103. Roughness as a Factor in Culvert Hydraulics, West, E. M.; December.


1955


109. Observations of Stabilized Turf Shoulders, Warren County Project No. 1 16(2) and 113(5) U. S. 31W and U. S. 68 Bowling Green-Cave City Road, Williams, E. G.; November.

110. Observations of the Manufacture and Placement of Prefabricated Bridge Sections and Precast Concrete Riprap, Sawyer, D. H.; December.
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133. Bridge Resurfacing with Silica Sand-Asphalt Mixture, Strunk, L. H.; December.

1959


137. Dense Graded Aggregate Base Development, Drake, W. B.; April; prepared for presentation at the 16th Annual Meeting of Kentucky Crushed Stone Association.


143. The Use of Epoxy Resin for Sealing Cracks in a Reinforced Concrete Bridge, Evans, Milton, Jr.; July.

1960


152. Report on Investigation of Concrete Pavement U. S. 60 between Versailles and Frankfort, Drake, W. B.; June.


154. Experimental Paving Projects Using Curtiss-Wright's Coal-Modified, Coal-Tar Binder, Hardymon, J. F.; June; also Kentucky's Bituminous Pavement Research on Modified Coal Tar, Drake, W. B.; Bulletin No. 56, Engineering Experiment Station, University of Kentucky, June 1960.

155. A Discussion of the Durability of Expanded Shale Aggregate for Exposed Concrete Structures (Bridges), Havens, J. H.; November.

156. Pavement Friction, Rizenbergs, R. L.; Kentucky Engineer, Vol 22, No. 4, May. 1961

157. Evaluation of Vibratory Roller for Use in Compacting Bituminous Concrete Mixes, Deen, R. C.; February.

158. Performance Report on Application of Wire Mesh Reinforcement to Asphaltic Concrete Pavement Overlays, Franklin-Shelby County Project FI 172(12), Deen, R. C. and Florence, R. L.; February.

159. Experimental Paving Project Using Curtiss-Wright's Coal-Modified, Coal-Tar Binder (First Year Performance), Hardymon, J. F.; March; also Bulletin No. 60, Engineering Experiment Station, University of Kentucky, June 1961.


163. Analysis of Pavement Roughness, Rizenbergs, R. L.; March.


1962

173. Experimental Paving Projects Using Curtiss-Wright's Coal-Modified, Coal-Tar


Second Annual Performance Survey of Reinforced Concrete Pipe Culverts, Hughes, R. D.; February.


An Evaluation of Four Retarding Admixtures in Structural Concrete, Evans, Milton, Jr. and Waddle, R. R.; February.


Pavement Roughness Studies (A Progress Report), Rizenbergs, R. L.; March.


Progress Report on the Application of Nuclear Techniques to the Measurement of Moisture and Density of Highway Construction Materials, Deen, R. C. and Shackleford, J. D.; May; also Development in Nuclear Moisture Density Testing, Deen, R. C., Bulletin No. 64, Engineering Experiment Station, University of Kentucky, June 1962.

Construction Report on Experimental Use of Natural, Bituminous, Quartz Sandstone (Kentucky Rock Asphalt) as a Traffic-Bound Aggregate, Laughlin, G. R.; December.


Cutback Asphalt Emulsion Primer, Type L, Nelson County, Project RS Group 38(1961), Shackleford, J. D.; February.

Report on Seal Coat Application to Clark Memorial Bridge, Deen, R. C.; February.

Base Stabilization Bryantsville-Buena Vista Road, Garrard County, RS 40-326, Deen, R. C.; February.

Progress Report, Class I, Type B, Plant-Mix Initial Treatment, PAC-9, Florence, R. L.; February.


Memorandum Report on Structural Repair of Concrete Pavement, Barren County Project U 543(3), Havens, J. H.; June.


Status Report on Landslide Area on I-75, Covington, Kentucky, Deen, R. C.; May.

Status Report on Landslide Area on I-75, Covington, Kentucky, Deen, R. C.; August.


Concrete Bridge Decks: Deterioration, Coatings and Repairs, Havens, J. H. and Drake, W. B.; February.


Memorandum Report on Inspection-Performance Report; Plant-Mix, Initial Treatment; Morgantown-Woodbury Road, Butler County, Florence, R. L.; April.


Annual Report Fiscal Year 1963-64, July.

Kentucky Highway Research Program, Havens, J. H. and Deen, R. C.; March; also Bulletin No. 73, Engineering Experiment Station, University of Kentucky, September 1964.


Camber Design Study for Concrete Pipe Culverts, Deen, R. C.; November; also Record 116, Highway Research Board, 1966.


Weighing Vehicles in Motion, April.

A Laboratory Investigation of the Properties of Coal-Bitumed Paving Mixtures, Howard, G. G.; February; also thesis, MSCE, University of Kentucky, 1964; also Bulletin 71, Engineering Experiment Station, University of Kentucky, March 1964.


Memorandum Report on Performance of Initial Treatments Constructed During 1963; Class I Bituminous Concrete Surface Containing PAC-9, Florence, R. L.; May.

Memorandum Report on Construction of a Class I, Type A Surface Containing Paradise Slag Aggregate (Experimental), Drakesboro-Paradise Road (KY 176); SP 89-43-68, Florence, R. L.; October.


Memorandum Report on Manufactured (Crushed), Limestone, Fine Aggregate for Portland Cement Concrete; Proposed Special Provision, Havens, J. H.; October.


Memorandum Report on Experimental Feature, Construction Project F 160(10), U. S. 127, Mercer County, Experimental
Guardrail Installations and Performance Studies, Havens, J. H.; November.

1965


224. Freeze-Thaw Characteristics of Aggregates, Laughlin, G. R.; Scott, J. W.; and Havens, J. H.; March; also Bulletin No. 76, Engineering Experiment Station, University of Kentucky, September 1965.


226. Insulation of Concrete Bridge Decks, Mossbarger, W. A., Jr.; July.

227. Weighing Vehicles in Motion, September.


230. Obtaining Highway Engineering Services from Professional Engineers in Private Practice, Shaver, R. E. and Hutchinson, J. W.; December.


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236. Basic Criterion for Determining Design Loads on Box and Pipe Culverts, Havens, J. H.; Deen, R. C.; and Hughes, R. D.; June.


238. Engineering Properties of Kentucky Soils, Deen, R. C.; August.


241. Triaxial and Consolidation Test Procedures, October.


244. Impact of I-75 on the Local Economy between Walton and Georgetown, Deen, R. C.; February.

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245. Highway Construction in Windblown Silts of Western Kentucky, Deen, R. C.; January.


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<td>Application of Stanford Watershed Model Concepts to Predict Flood Peaks for Small Drainage Areas</td>
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276. *Lateral Distribution of Traffic on a Four-Lane and Six-Lane Section of I 75 South of Covington*, Lynch, R. L. and Hamby, G. N.; June.


284. *Weighing Vehicles in Motion*, University of Kentucky Research Foundation; November.

1970


286. *An Investigation of Low-Strength Concrete and Resulting Structural Failure in a Bridge Deck*, Havens, J. H.; February.


300. Continuously Reinforced Concrete Pavement; I 71-21 (15) 37, Havens, J. H.; December.
301. Evaluation of Cored Specimens from Timber Caisson beneath Pier No. 2 of the US 25 Bridge over the Ohio River between Covington and Cincinnati; F141 (1), Havens, J. H. and Rahal, R. A.; December.

1971
304. Establishment of Wood Plants on Roadsides (Southeastern Kentucky), Whitaker, S. E.; January.
305. Structural Analysis of Bituminous Concrete Pavements, Deen, R. C.; Southgate, H. F., and Havens, J. H.; February; also Supplement, October; also Record, Highway Research Board, 1972.
306. Experimental Concrete Pavement Containing Fly-Ash Admixtures; I-64-2(72)18 and F 552(15), Philpot, J. R.; April.
313. Operational Characteristics of Lane Drops, Cornette, D. L.; October.
314. Grooving Pavement Centerlines for Lane Demarcation, Seymour, W. M.; October.

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320. Chronological Listing of Research Reports, January.
321. Subject Listing of Research Reports, January.