EXTENSION SERIES No. 42
ENGINEERING EXTENSION DEPARTMENT

PROCEEDINGS
OF THE
TWENTY-FOURTH ANNUAL ROAD SCHOOL
HELD AT
PURDUE UNIVERSITY
January 24-28, 1938

Compiled and Edited by
BEN H. PETTY
Professor of Highway Engineering

PURDUE UNIVERSITY
Lafayette, Indiana
Group of Officials Attending Road School

Reading from left to right, seated: A. A. Potter, Dean of Engineering, Purdue; R. B. Wiley, Head, School of Civil Engineering, Purdue; M. R. Keefe, Chief Engineer, State Highway Commission of Indiana; T. H. Cutler, Chief Engineer, Kentucky State Highway Department; Charles M. Upham, Engineer-Director, American Road Builders' Association; David E. Ross, Chairman, Board of Trustees, Purdue; W. A. Klinger, President, Associated General Contractors of America; Edward C. Elliott, President, Purdue.

Reading from left to right, standing: Ben H. Petty, Road School Chairman, Purdue; W. A. Knapp, Assistant Dean of Engineering, Purdue; W. H. O'Neall, Secretary, Highway Materials and Equipment Association; Earl B. Lockridge, Assistant Chief Engineer, State Highway Commission of Indiana; Dorsey Allison, Treasurer, Highway Materials and Equipment Association; C. Dana Ward, President, Highway Materials and Equipment Association; James D. Adams, former Chairman, State Highway Commission of Indiana; W. M. Holland, Executive-Secretary, Indiana Highway Constructors, Incorporated; Sam Hadden, Executive-Secretary, Indiana Mineral Aggregates Association.
TABLE OF CONTENTS

Preface ........................................................................................................... 5
Program ......................................................................................................... 7
Papers—
   Federal Highway Legislation, by Charles M. Upham, Engineer-Director,
      American Road Builders' Association, Washington, D. C. .............. 13
   Effects of Road Improvement upon Rural Community and Family Life,
      by T. A. Dicus, Commissioner (now Chairman), State Highway
      Commission of Indiana, Indianapolis................................................ 19
   Relationship of the State Highway Commission to County Road
      Departments, as Affected by Recent Legislation, by Howard
      Atcheson, Commissioner, State Highway Commission of Indiana,
      Indianapolis .......................................................................................... 23
   Purdue's Contributions to Road Improvement, by A. A. Potter, Dean
      of Engineering, Purdue University ...................................................... 24
   Contract System versus Day-Labor Operations on Highway Work,
      by W. A. Klinger, President, The Associated General Contractors
      of America, Inc., Sioux City, Iowa ....................................................... 27
   Highway Administration Problems, by T. H. Cutler, Chief Engineer,
      Kentucky State Highway Department, Frankfort, Kentucky ........... 36
   Joint Highway Research Project between Indiana State Highway
      Commission and Purdue University, by W. K. Hatt, Director,
      Joint Highway Research Project, Purdue University ....................... 41
   Developing Non-Skid Road Surfaces, by R. A. Moyer, Associate
      Professor of Highway Engineering, Iowa State College, Ames, Iowa 46
   Developing Non-Skid Road Surfaces, by C. W. Siniff, Engineer of
      Maintenance (now Commissioner), State Highway Commission of
      Indiana, Indianapolis ........................................................................... 63
   The Application of Soil Mechanics to Highway Improvement—A
      Summary and a Review, by Philip C. Rutledge, Associate Professor
      of Civil Engineering, Purdue University ............................................ 67
   The Application of Soil Mechanics to Highway Improvement, by
      W. T. Spencer, Soils Engineer, State Highway Commission of
      Indiana ................................................................................................... 75
   Protecting Trees Along Our Roads, by H. J. Schnitzius, Landscape
      Supervisor, State Highway Commission of Indiana, Indianapolis .... 77
   Functions of a Highway Planning Survey Department, by W. J. Sapp,
      Director, Indiana State-Wide Highway Planning Survey, Indiana-
      napolis ................................................................................................... 81
   Objectives of the Indiana Society of Professional Engineers, by S. G.
      Cohen (President), Engineer of Construction, State Highway
      Commission of Indiana, Indianapolis .................................................... 89
   The Farm-to-Market Federal Road Program, by Earl B. Lockridge,
      Assistant Chief Engineer, State Highway Commission of Indiana,
      Indianapolis .......................................................................................... 93
   The Secondary Road Problem, by O. S. Hess, Engineer-Manager,
      Kent County Road Commission, Grand Rapids, Michigan ............... 101

(3)
W.P.A. Co-operation in Road and Bridge Work, by John K. Jennings, State Director, W.P.A. of Indiana, Indianapolis................. 113
The County Road Budget, by C. A. Ketchum, Secretary, State Board of Tax Commissioners, Indianapolis......................... 119
Office Records for a County Road Department, by Otto K. Jensen, Deputy Examiner, State Board of Accounts, Indianapolis... 126
Functioning of Indiana’s Drainage Laws, by Arthur C. Call, Attorney, Anderson, Indiana......................................................... 132
Materials, Equipment, and Organization for Bridge Painting, by Henry G. Schloot, Greene County Road Supervisor, Bloomfield, Indiana.......................................................... 139
Screening and Crushing Plants, by R. N. Horton, Jefferson County Surveyor and Road Supervisor, Madison, Indiana........ 140
Screening and Crushing Plants, by F. G. Deal, LaGrange County Road Supervisor, LaGrange, Indiana............................. 142
Uses of the Motor Grader, by Ivan Craggs, Johnson County Surveyor and Road Supervisor, Franklin, Indiana............... 141
Gasoline-Powered Shovels, by S. R. Laughlin, Kosciusko County Road Supervisor, Warsaw, Indiana................................. 146
Weed Mowers, by Hugh W. Wagner, Miami County Surveyor and Road Supervisor, Peru, Indiana........................................ 147
Using Statistical Records in Enlisting the Support of County Councils and the General Public, by Dean Whicker, Benton County Surveyor and Road Supervisor, Fowler, Indiana......................... 149
Bituminous Surfaces, by Ernest H. Coffin, Wayne County Road Supervisor, Richmond, Indiana............................................ 152
Use of Powdered Asphalt in Low-Cost Road Work, by Peter Draper, Madison County Road Supervisor, Anderson, Indiana... 155
Engineering Services to Towns, Cities, and Individuals, by J. C. Eckert, Ripley County Surveyor and Road Supervisor, Versailles, Indiana......................................................... 157
Engineering Services to Towns, Cities, and Individuals, by V. R. Dicken, Grant County Surveyor, Marion, Indiana............ 159
Publications of the Engineering Extension Department............................. 162