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TEXAS COOPERATIVE HIGHWAY
RESEARCH PROGRAM



JANUARY 1988

CATALOG OF RESEARCH STUDIES AND REPORTS

FROM THE

TEXAS COOPERATIVE TRANSPORTATION RESEARCH PROGRAM

PERFORMED IN COOPERATION WITH

THE FEDERAL HIGHWAY ADMINISTRATION

AND

TECHNICAL STUDIES

PERFORMED IN COOPERATION WITH

THE URBAN MASS TRANSPORTATION ADMINISTRATION

JANUARY, 1988

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Mr. Alvin R. Luedecke
State Transportation Planning Engineer
ATTENTION: D-10 Research Section
Texas State Department of Highways and
Public Transportation
P. O. Box 5051
Austin, Texas 78763-5051

Many reports may be obtained by writing to:

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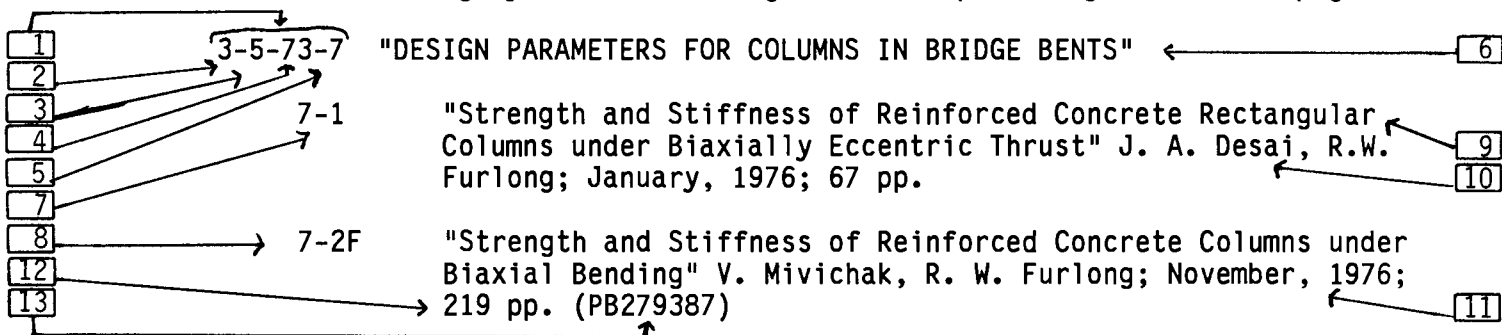
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INTRODUCTION

This catalog serves to document all research and technical studies performed under the Cooperative Research Program of the Texas State Department of Highways and Public Transportation.

Part I lists HPR studies (studies 1-499) which are numbered in accordance with our current numbering system. Following is an example study taken from page 3:



Explanation:

1. Study number
2. Indicates the agency performing the study in accordance with the following codes:

<u>Code Number</u>	<u>Agency</u>
1	Texas Dept. of Highways and Public Transportation (In-house study)
2	Texas Transportation Institute
3	Center for Transportation Research
4	United States Geological Survey
5	Southwest Research Institute
6	Ernst and Whinney Consultants
7	Texas Southern University
8	University of Texas at Arlington
9	Rice Center
10	University of Texas at El Paso
11	Texas Tech University

3. Indicates the Division or District of the Department which is responsible for monitoring the study. In the case of study numbers beginning with a "1" (an in-house study) the Division or District indicated is performing the study as well.

DIVISION CODES

<u>Code Number</u>	<u>Interpretation</u>
1	Departmental Administration (Engineer-Director)
3	Finance

4	Equipment & Procurement Division
5	Bridge Division
6	Construction Division
7	Planning & Policy Division
8	Highway Design Division
9	Materials and Tests Division
10	Transportation Planning Division
12	Motor Vehicle Division
13	Human Resources Division
15	Right-of-Way Division
16	Travel & Information Division
18	Safety & Maintenance Division
19	Automation Division
20	Insurance Division

DISTRICT CODES

<u>Code</u>	<u>Code</u>	<u>Code</u>
<u>No. Interpretation</u>	<u>No. Interpretation</u>	<u>No. Interpretation</u>
1D District 1 Paris	10D District 10 Tyler	19D District 19 Atlanta
2D District 2 Ft. Worth	11D District 11 Lufkin	20D District 20 Beaumont
3D District 3 Wichita Falls	12D District 12 Houston	21D District 21 Pharr
4D District 4 Amarillo	13D District 13 Yoakum	23D District 23 Brownwood
5D District 5 Lubbock	14D District 14 Austin	24D District 24 El Paso
6D District 6 Odessa	15D District 15 San Antonio	25D District 25 Childress
7D District 7 San Angelo	16D District 16 Corpus Christi	
8D District 8 Abilene	17D District 17 Bryan	
9D District 9 Waco	18D District 18 Dallas	

4. The year the study began
5. The definitive study number; i.e., the example study is commonly referred to as "study 7." The studies in Part I are arranged in numerical order using the definitive study numbers. Further, the indices refer to these definitive study numbers rather than page numbers.
6. Title of the study
7. The first report emanating from "study 7." Note that each report number contains the definitive study number plus a specific number beginning with 1.

8. The second report emanating from "study 7." The "F" indicates that report No. 2 is the final report, and no further reports will be forthcoming.
9. The report title
10. The authors
11. The date the report was written
12. Number of pages in the report
13. The NTIS number. Refer to the "Ordering Instructions".

Part II lists studies which are a part of the Federal Coordinated Program (FCP), the Federally Coordinated Implementation Program (FCIP), the Rural Technical Assistance (RTAP) or the Demonstration Program (Demo) of the FHWA. These studies are numbered on the same basis as the studies in Part I, but are given definitive study numbers, with one exception, in the 500 series.

Part III lists experimental projects which are undertaken to test the field applicability of new methods and products. These studies are designated with an "EP", and are given study numbers in the 600 series. Experimental project reports are no longer published as such, but are now published under the Departmental Information Exchange reports.

Part IV lists other state-funded studies. These are funded by divisions or districts other than D-10 Research. These studies are designated numbers in the 900 series.

Part V lists Technical Studies performed in cooperation with the Urban Mass Transportation Administration. These studies are designated numbers in the 1000 series.

Part VI lists more HPR studies. The explanation in Part I above applies to these studies as well.

Part VII lists Special Studies undertaken by the department with FHWA participating funds. These studies are not a part of our cooperative research effort, but are undertaken by the Department on a need basis. They are designated with an "SS". SS reports are no longer published as such, but are now published under Departmental Information Exchange reports.

Parts VIII and IX list HPR projects similar to those listed in Part I. These studies differ only in the system of numbering. Part VIII lists our "RP" (Research Project) studies. These are designated as "RP" throughout the listing and indices. This is an old numbering system.

Part IX lists studies numbered by year of issue. This too is an old numbering system, and these reports are arbitrarily prefixed with an "NY" (Numbered by Year) for indexing purposes.

Part X lists reports prepared primarily by Departmental personnel. These reports serve as a means of exchanging departmental information, and include topics previously published as Special Studies or Experimental Projects reports.

PART I

Listing of HPR Research Studies and Reports
(Studies 1-499)

- 2-10-54-1 "LIBRARY RESEARCH IN SUPPORT OF THE COOPERATIVE RESEARCH PROGRAM"
(Study Supervisor: Susan Ferris) (This is a library support
study; no reports to be published)
- 1-10-74-2 "EQUIPMENT FOR THE MEASUREMENT OF PAVEMENT PERFORMANCE IN TEXAS"
- 2-1 "Equipment for Collecting Pavement Roughness Information"
C.L. Goss, K.D. Hankins, A.B. Hubbard; December, 1976; 82 pp.
(Revised November, 1982)
- 2-2F "Equipment and Methods for Collecting Pavement Performance
Information" K.D. Hankins; October, 1977; 38 pp.
- 2-8-57-3 "ROAD TEST ON HOT-MIX ASPHALT CONCRETE PAVEMENT"
- 3-1 "A Laboratory Study of the Operator Variable on Molding
Procedure and Mix Design Variations in Hot-Mix Asphalt
Concrete" R.A. Jimenez, R.M. Gallaway; January, 1965; 53 pp.
- 3-2 "A Laboratory Study of the Effects of Oven Curing Loose and
Compacted Asphalt Concrete Mixtures" B.M. Gallaway, R.A.
Jimenez; January, 1965; 17 pp.
- 3-3 "Road and Laboratory Tests on Hot-Mix Asphaltic Concrete"
R.A. Jimenez, B.M. Gallaway; January, 1965; 75 pp.
- 3-4F Abridgements of Reports Resulting from Studies of Project
"Road Test on Hot-Mix Asphaltic Concrete" R.A. Jimenez,
B.M. Gallaway; January, 1965; 64 pp.
- 2-10-57-4 "ECONOMIC IMPACT OF THE I. H. SYSTEM ON SELECTED AREAS IN TEXAS"
- 4-1 "Changes in Land Value, Land Use, and Business Activity
Along a Section of the Interstate Highway System in Austin,
Texas" C.V. Wootan, C.R. Haning; 1957; 46 pp.
- 4-2 "Changes in Land Value, Land Use and Business Activity
Along a Section of the Interstate Highway System in Temple,
Texas" C.V. Wootan, H.G. Meuth; September, 1960; 33 pp.
- 4-3 "Economic Impact Study Along Interstate Highway 30 in
Rockwell County, Texas" J.L. Buffington, C.V. Wootan;
September, 1963; 67 pp.
- 4-4 "Restudy of Changes In Land Value, Land Use, and Business
Activity along a Section of Interstate Highway 35, Austin,
Texas" J.L. Buffington; June, 1964; 72 pp.

- 4-5 "Restudy of Changes in Land Value, Land Use, and Business Activity along a Section of Interstate Highway 35, Temple, Texas" J.L. Buffington, H.G. Meuth; December, 1964; 41 pp.
- 4-6 "An Economic Impact Study of IH-35E on Waxahachie, Texas" J.L. Buffington; March, 1966; 50 pp.
- 4-7 "A Study of the Economic Impact of IH-20 on Merkel, Texas" J.L. Buffington; April, 1966; 37 pp.
- 4-8 "The Economic Impact of IH-10 on a Rural Area East of Houston, Texas" J.L. Buffington; March, 1967; 28 pp. (PB175630)
- 4-9 "A Study of Economic Impact of IH-45 on Huntsville, Texas" J.L. Buffington; August, 1967; 40 pp. (PB176390)
- 4-10 "A Study of the Economic Impact of IH-10 on Chambers County, Texas" J.L. Buffington; March, 1967; 15 pp. (PB1947)
- 4-11F "A Study of the Economic Impact of IH45 on Conroe, Texas" J.L. Buffington; August, 1967; 34 pp. (PB177538)

- 2-8-57-5 "INTERSECTION ILLUMINATION"
- 5-2 "Lighting Studies at Texas City Wye" D.M. Finch; October, 1963; 90 pp.
- 5-4 "Overhead Signing and Traffic Operations" S.N. Van Winkle, H.H. Bartel, Jr.; April, 1964; 12 pp.
- 5-5 "Roadside Sign Studies--II"; 12 pp.
- 5-6 "Driver Tension Responses and Intersection Illumination" W.C. Franklin, D.E. Cleveland; April, 1964; pp.
- 5-7 "Traffic Operations - Illumination Studies" D.E. Cleveland; August, 1966; 17 pp.
- 5-8 "Overhead Sign - Illumination Relationships" D.E. Cleveland; August, 1966; 36 pp.
- 5-9F "Intersection and Sign Illumination for Highway Safety and Efficiency" C.J. Keese, D.E. Cleveland; August, 1966, 60 pp.

- 2-8-58-6 "RAMPS AND INTERCHANGES"
- 6-1 "A Comparative Study of the Conventional Diamond and Cloverleaf Interchanges with Respect to Ramp Capacity and Vehicular Delay" J.D. Barnett; November, 1963; 49 pp.

- 6-2 "At-Grade Intersection Spacing on Conventional Two-Level Diamond Interchange" J.D. Barnett, C. Pinnell; November, 1963; 9 pp.
- Final Report
 "Guide to the Selection of Nondirectional Interchanges" C. Pinnell, J.D. Barnett, J. Haynes, M. Radke; November, 1963; 45 pp.
- 3-5-73-7 "DESIGN PARAMETERS FOR COLUMNS IN BRIDGE BENTS"
- 7-1 "Strength and Stiffness of Reinforced Concrete Rectangular Columns under Biaxially Eccentric Thrust" J.A. Desai, R.W. Furlong; January, 1976; 67 pp.
- 7-2F "Strength and Stiffness of Reinforced Concrete Columns Under Biaxial Bending" V. Mivichak, R.W. Furlong; November, 1976, 219 pp. (PB279387)
- 2-8-58-8 "STUDY OF HIGHWAY MEDIANS IN CITIES"
- Progress "A Median Study of Baytown, Texas" C.V. Wootan, H.G. Meuth; August, 1963; 15 pp.
- 8-1 "A Median Study in Baytown, Texas" C.V. Wootan, H.G. Meuth; August, 1963; 15 pp.
- 8-2 "A Median Study in Pleasanton, Texas" C.V. Wootan, H.G. Meuth, N.J. Rowan, T.G. Williams; August, 1964; 36 pp.
- 8-3F "A Median Study in San Antonio, Texas" C.V. Wootan, H.G. Meuth, N.J. Rowan, T.G. Williams; August, 1964; 42 pp.
- 2-8-59-9 "MODIFICATION OF PROPERTIES OF ASPHALT"
- 9-1 "Hardening of Paving Asphalt and Relation to Composition" R.N. Traxler; February, 1961; 42 pp.
- 9-2 "Temperature-Viscosity Data on Asphalt Cements" R.N. Traxler; September, 1962; 31 pp.
- 9-3 "Antioxidants for Paving Asphalts" R.N. Traxler; September, 1962; 27 pp.
- 9-4 "Susceptibility of Paving Asphalt to Hardening by Heat, Oxygen, and Sunlight" R.N. Traxler; October, 1962; 55 pp.
- 9-5 "Correlation of Composition with Rheology and Durability of Asphalts" R.N. Traxler; December, 1962; 20 pp.
- 9-6 "Viscosity Data for Asphalts Used by the Texas Highway Department" R.N. Traxler; July, 1968; 22 pp.

- 9-7 "Oxidation (Durability) Tests on Asphalts Used by the Texas Highway Department" R.N. Traxler; August, 1963; 20 pp.
- 9-8 "Hardening of 85-100 Penetration Asphalt Cements During Service in Pavement" R.N. Traxler; May, 1965; 57 pp.
- 9-9 "Additional Rheological Properties of 85-100 Penetration Asphalt Cement Used in Field Tests Initiated During 1963-64" R.N. Traxler; August, 1966; 19 pp.
- 9-10 "Oxygen Consumption by Asphalt Films and Resulting Viscosity Changes" R.N. Traxler, F.L. Carter, Jr.; March, 1967; 25 pp.
- Progress "Proposed Viscosity Specifications for Asphalt Cements" R.N. Traxler, J.G. Darroch; February, 1966; 28 pp.
- 9-11 "Hardening of Asphalt Cements During Service in Pavements 1963-66 Program" R.N. Traxler; October, 1967; 45 pp.
- 9-12 "A Statistical Study on Viscosities of Asphalt Cements Used by the Texas Highway Department" R.N. Traxler, J.G. Darroch; August, 1967; 164 pp.
- 9-13 "Best Temperatures to Measure Viscosity for Evaluation of Asphalt Durability in Service" R.N. Traxler; July, 1968; 20 pp.
- 9-14 "Effect of Storage Time on Susceptibility of Asphalt Cements to Hardening by Time, Heat and Oxidation" R.N. Traxler; October, 1968; 22 pp.
- 9-15 "Hardening of Asphalt Cements by Exposure to Ultraviolet and Short Wave Length Visible Light" R.N. Traxler; October, 1968; 22 pp.
- 9-16F "Stiffness of Asphalt Cements Evaluated by Compression" R.N. Traxler, November 1968; 72 pp.
- 2-5-74-10 "CORRELATION OF THE THD CONE PENETROMETER TEST N-VALUE WITH SHEAR STRENGTH OF THE SOIL TESTED"
- 10-1 "Correlation of the Texas Highway Department Cone Penetrometer Test with Unconsolidated-Undrained Shear Strength of Cohesive Soils" M.M. Hamoudi, H.M. Coyle, R.E. Bartoskewitz; August, 1974; 135 pp. (PB242731)
- 10-2 "Correlation of the Texas Highway Department Cone Penetrometer Test with the Drained Shear Strength of Cohesion less Soils" G.D. Cozart, H.M. Coyle, R.E. Bartoskewitz; August, 1975; 85 pp. (PB249687)

- 10-3F "Correlation of the Texas Cone Penetrometer Test N-Value with Soil Shear Strength" F.J. Duderstadt, H.M. Coyle, R.E. Bartoskewitz; August, 1977, 123 pp.
- 2-8-72-11 "COST EFFECTIVENESS PRIORITY PROGRAM FOR ROADSIDE SAFETY IMPROVEMENTS ON TEXAS FREEWAYS"
- 11-1 "Procedures Manual for Roadside Hazard Inventory and Safety Improvement Alternatives" G.D. Weaver, E.R. Post, D.L. Woods; January, 1974; 116 pp.
- 11-4 "Cost-Effectiveness Analysis: A Priority System for Roadside Safety Improvements" D.L. Woods; August, 1973, 34 pp.
- 11-F Final Report included in 15-1, Volume II
- 2-18-73-12 "IMPROVED METHODS FOR CLEANING JOINTS IN CONCRETE BRIDGE DECKS"
- 12-1 "A Survey of Distress and Debris in the Joints of Pan-Formed Concrete Bridges" W.M. Moore, G. Swift, H.L. Furr; January, 1974; 22 pp.
- 12-2F "Debris Removal from Concrete Bridge Deck Joints" W.M. Moore; September, 1974; 55 pp. (PB240626)
- 2-18-59-13 "VEGETATION CONTROL ON TEXAS HIGHWAYS"
- 13-3F "Controlling Vegetation in Asphalt Pavements" W.G. McCully, W.J. Bowmer; April, 1966; 16 pp.
- (Type B)
- 2-6-73-14 "BITUMINOUS TREATED BASES--AN EXPLORATORY STUDY"
- 14-1F "Performance and Economics of Bituminous Treated Bases in Texas" J.A. Epps, B.M. Gallaway; July, 1974; 91 pp. (PB2396)
- (Type B)
- 2-10-74-15 "COST EFFECTIVENESS PRIORITY PROGRAM FOR ROADSIDE SAFETY IMPROVEMENTS ON NON-CONTROLLED ACCESS ROADWAYS"
- 15-1, Volume 1
"Cost-Effectiveness Program for Roadside Safety Improvements on Texas Highways - Volume I: Procedures Manual" G.D. Weaver, E.R. Post, D.L. Woods, W.R. Ratcliff; August, 1974; 160 pp.
- 15-1, Volume 2
"Cost-Effectiveness Program for Roadside Safety Improvements on Texas Highways - Volume II: Computer Program Documentation Manual" G.D. Weaver, E.R. Post, D.D. French; August, 1974; 227 pp. (This is a final report for Study 11)

- 15-1, Volume 3
 "Cost-Effectiveness Program for Roadside Safety Improvements on Texas Highways - Volume III: Cost-Effective Analysis Manual" D.L. Woods, G.D. Weaver; February, 1975; 47 pp.
- 15-2F, Volume 1
 "Cost-Effectiveness Evaluation of Roadside Safety Improvements on Texas Highways" G.D. Weaver, D.L. Woods; August, 1974; 124 pp.
- 15-2F, Volume 2
 "Cost-Effectiveness Evaluation of Roadside Safety Improvements on Texas Highways - Appendix, Cost-Effectiveness Analysis Manual" G.D. Weaver, D.L. Woods; August 1974; 133 pp.
- 3-8-76-16 "DETERMINATION OF QUANTITIES OF CERTAIN FUELS, OILS AND TARS IN STORM RUNOFF WATERS FROM HIGHWAYS"
- 16-1F "Oil, Grease, and other Pollutants in Highway Runoff" B. Wiland, J.F. Malina, Jr.; September, 1976; 76 pp.
- (Part I Funds)
- 2-10-74-17 "URBAN TRANSPORTATION STUDY PROCEDURES"
- 17-1 "A Procedure for Estimating Trip Length Frequency Distributions" D.F. Pearson, V.G. Stover, J.D. Benson; April, 1974; 66 pp.
- 17-2 "A Sensitivity Evaluation of Traffic Assignment" J. Buechler, V.G. Stover, J.D. Benson; August, 1975; 82 pp.
- 17-3F "Urban Transportation Study Procedures" J.D. Benson, V.G. Stover, M.F. Teniente; August, 1975; 36 pp.
- 2-8-73-18 "ENVIRONMENTAL DETERIORATION OF PAVEMENT"
- 18-1 "Environmental Factors Relevant to Pavement Cracking in West Texas" S.H. Carpenter, R.L. Lytton, J.A. Epps; January, 1974; 92 pp. (PB238040)
- 18-2 "Thermal Activity of Base Course Material Related to Pavement Cracking" S.H. Carpenter, R.L. Lytton; December, 1975; 128 pp. (PB254754)
- 18-3 "Prediction of Thermal Reflection Cracking in West Texas" H. Chang, R.L. Lytton, S.H. Carpenter; March, 1976; 102 pp. (PB252084) (Computer Program FINITE)
- 18-4F "Thermal Pavement Cracking in West Texas" S.H. Carpenter, R.L. Lytton; October, 1977; 233 pp. (PB283168)
- 2-8-60-19 "CHANNELIZATION"

- 19-1 "Approach-End Treatment of Channelization - Signing and Delineation" N.J. Rowan; September, 1962; 55 pp.
- 19-3 "A Computer Technique for Perspective Plotting of Roadways" R.A. Park, N.J. Rowan; July, 1967; 33 pp.
- 19-4F "Channelization" N.J. Rowan, T.G. Williams; March, 1966; 59 pp.
- 3-8-73-20 "SPEED OF VEHICLES ON GRADES"
- 20-1F "Speed of Vehicles on Grades" C.M. Walton, C.E. Lee; August, 1975; 166 pp.
- (Type B)
- 3-8-74-21 "PRAGMATIC APPLICATIONS OF RIGID PAVEMENT RESEARCH"
- 21-1F "A Performance Survey of Continuously Reinforced Concrete Pavements in Texas" B.F. McCullough, P.J. Strauss; November, 1974; 130 pp.
- 2-5-73-22 "AUTOMATED DESIGN OF PRESTRESSED CONCRETE BEAMS MADE CONTINUOUS FOR LIVE LOAD"
- 22-1F, Volume I
"Automated Design of Continuous Bridges with Precast Prestressed Concrete Beams: Volume I, Design Considerations" H.L. Jones, L.L. Ingram, H.L. Furr, D.W. Harris; October, 1974; 68 pp.
- 22-1F, Volume II
"Automated Design of Continuous Bridges with Precast Prestressed Concrete Beams: Volume II, Program Documentation" H.L. Jones, L.L. Ingram, H.L. Furr, D.W. Harris; November, 1974; 182 pp (Computer Program PSTRS 13)
- 22-1F, Volume III
"Automated Design of Continuous Bridges with Precast Prestressed Concrete Beams: Volume III, Shear and Moment Envelope Program User's Instructions" H.L. Jones, D.W. Harris, H.L. Furr; December, 1974; 57 pp.
- 3-5-74-23 "TEMPERATURE INDUCED STRESSES IN HIGHWAY BRIDGES BY FINITE ELEMENT ANALYSIS AND FIELD TESTS"
- 23-1 "Prediction of Temperature and Stresses in Highway Bridges by a Numerical Procedure Using Daily Weather Reports" T. Thepchatri, C.P. Johnson, H. Matlock; February, 1977; 165 pp. (Computer Program TSAP) (PB279394)

23-2 "Analytical & Experimental Investigation of the Thermal Response of Highway Bridges" K.M. Will, C.P. Johnson, H. Matlock; February, 1977; 148 pp. (Computer Program SHELL 8) (PB279396)

23-3F "Temperature Induced Stresses in Highway Bridges by Finite Element Analysis and Field Tests" A. Yargicoglu, C.P. Johnson; July, 1978; 181 pp.

2-8-61-24 "FACTORS AFFECTING LEVEL OF SERVICE ON CONTROLLED ACCESS FACILITIES"

Progress "Comparison of Two Techniques of Aerial Photography for Application in Freeway Traffic Operations Studies" W.R. McCasland; March, 1964; 40 pp.

24-1 "Theoretical Approaches to the Study and Control of Freeway Congestion" D.R. Drew; January, 1964; 27 pp.

24-2 "Optimum Distribution of Traffic Over a Capacitated Street Network" C. Pinnell; October, 1964; 103 pp.

24-3 "Freeway Level of Service as Influenced by Volume and Capacity Characteristics" D.R. Drew, C.J. Keese; January, 1965; 75 pp.

24-4 "Deterministic Aspects of Freeway Operations and Control" D.R. Drew; June, 1965; 76 pp.

24-5 "Stochastic Consideration in Freeway Operations and Control" D.R. Drew; June, 1965; 54 pp.

24-6 "Some Considerations of Vehicular Density on Urban Freeways" J.J. Haynes; April, 1965; 61 pp.

24-7 "Traffic Characteristics of the Freeway Interchange Traffic of the Inbound Gulf Freeway" W.R. McCasland; October, 1964; 81 pp.

24-8 "System Demand-Capacity Analysis of the Inbound Gulf Freeway" J.A. Wattleworth; October, 1964; 81 pp. (PB172930)

24-9 "Capacity-Demand Analysis of the Wayside Interchange on the Gulf Freeway" W.R. McCasland; September, 1964; 42 pp.

24-10 "Inbound Gulf Freeway Ramp Control Study I" C. Pinnell, D.R. Drew, W.R. McCasland, J.A. Wattleworth; December, 1964; 59 pp.

24-11 "Investigation of an Internal Energy Model for Evaluating Freeway Level of Service" D.R. Drew, C.L. Dudek; June, 1965; 89 pp.

24-12 "Gap Acceptance Characteristics for Ramp-Freeway Surveillance and Control" D.R. Drew; July, 1965, 47 pp.

- 24-13 "Inbound Gulf Freeway Ramp Control Study II" C. Pinnell, D.R. Drew, W.R. McCasland, J.A. Wattleworth; July, 1965; 78 pp.
- 24-15 "Peak-Period Analysis and Control of a Freeway System" J.A. Wattleworth; October, 1965; 25 pp.
- 24-16 "An Investigation of the Feasibility of Improving Freeway Operations by Staggering Working Hours" G.L. Santerre; January, 1960; 54 pp. (PB174478)
- 24-17 "Freeway Surveillance and Control Project Gulf Freeway - Houston, Texas" D.L. Drew; September, 1966; 10 pp.
- 24-18 "Considerations for the Installation of U-Turns at Freeway Interchanges" S.L. Wilson, M.L. Radke; October, 1966; 67 pp.
- 24-19 "The Development of an Automatic Freeway Merging Control System" D.R. Drew, W.R. McCasland, C. Pinnell, J.A. Wattleworth; November, 1966; 58 pp.
- 24-21 "Freeway Ramp Control Reduces Frequency of Rear End Accidents" M.L. Radke; November, 1966; 24 pp.
- 24-22 "Evaluation of the Benefits of Traffic Surveillance and Control of the Gulf Freeway" W.F. McFarland, W.G. Adkins, W.R. McCasland; January, 1969; 35 pp.
- 24-23 "Effect of Rain on Freeway Capacity" E.R. Jones, M.E. Goolsby; August, 1969; 30 pp.
- 24-24 "Cost-Effectiveness Analysis of Freeway Ramp Control" C.L. Dudek, W.R. McCasland; August, 1969; 54 pp.
- 24-25 "Freeway Operations on the Gulf Freeway Ramp Control System" M.E. Goolsby, W.R. McCasland; August, 1969; 27 pp.
- 24-26F "Freeway Ramp Control System" W.R. McCasland; August, 1969; 66 pp.
- 1-5-62-25 "EXPERIMENTAL USE OF HIGH STRENGTH REINFORCING STEEL"
- 25-1F "Experimental Use of High Strength Reinforcing Steel" J.G. Newton, L.G. Walker; March, 1966; 64 pp.
- 1-5-62-26 "DYNAMIC BRIDGE IMPACT TESTS"
- 26-1 "Dynamic Test of P.&S.F. Railroad Overpass, El Paso, Texas" B.C. Gersch; September, 1964; 24 pp.
- 26-2F "Dynamic Testing Program of the T.&N.O. Railroad Overpass, El Paso, Texas" B.C. Gersch; September, 1964; 92 pp.

- 2-8-62-27 "DISTRIBUTION OF STRESS IN LAYERED SYSTEMS COMPOSED OF GRANULAR MATERIALS"
- 27-1 "A Report on a Mathematical Model Describing the Deformation Characteristics of Granular Materials" W.A. Dunlap; 1963, 44 pp.
- 27-2 "A Report on an Extension of Elasticity Theory to Include Granular Materials" F.H. Scrivner; February, 1964; 13 pp.
- 27-3 "A Repetitive Triaxial Loading Apparatus for Large Diameter Specimens of Granular Materials" W.A. Dunlap; January, 1965; 15 pp.
- 27-4F "Deformation Characteristics of Granular Materials Subjected to Rapid, Repetitive Loading" W.A. Dunlap; November, 1967; 210 pp.
- 1-8-62-28 "DETERMINATION OF CAPABILITIES OF ELECTRONIC EQUIPMENT"
- 28-1F "Determination of Capabilities of Electronic Equipment for Use in Photogrammetry" S.E. Mangum; September, 1966; 71 pp.
- 3-5-74-29 "STRENGTH AND BEHAVIOR OF ANCHOR BOLTS"
- 29-1 "A Guide to the Selection of High-Strength Anchor Bolt Materials" G.B. Hasselwander, J.O. Jirsa, J.E. Breen; October, 1974; 47 pp. (PB247856)
- 29-2F "Strength & Behavior of Anchor Bolts Embedded near Edges of Concrete Piers" G.B. Hasselwander, J.O. Jirsa, J.E. Breen, K. Lo; May, 1977; 122 pp.
- 2-10-73-30 "CORRIDOR ANALYSIS FOR LEVEL OF SERVICE DESIGN"
- 30-1 "Capacity and Quality of Service of Arterial and Street Intersections" D.J. Berry; August, 1974; 68 pp. (PB242991)
- 30-2 "A Simulation Study of Mid-Block Access Effects on Arterial Streets" J.O. Exter, V.G. Stover, N.J. Rowan; August, 1974; 39 pp.
- 30-3F "Corridor Analysis for Level of Service Design" N.J. Rowan, D.A. Anderson; August, 1975; 56 pp. (PB266957)
- 2-5-76-31 "DEVELOPMENT OF A TRANSDUCER FOR USE IN MEASURING PEAK FORCES ON PILES DURING DRIVING"
- 31-1F "Transducers for Measurement of Pile Forces" R.E. Bartoskewitz, L.J. Milberger, H.M. Coyle; March, 1977; 68 pp.
- 2-8-62-32 "APPLICATION OF AASHO ROAD TEST RESULTS TO TEXAS CONDITIONS"

- 32-1 "A Report on a Modification of the AASHO Road Test Serviceability Index Formula" F.H. Scrivner; May, 1963, 11 pp.
- 32-2 "A Study of the Troxler Nuclear Soil Density and Moisture Gauges" F.H. Scrivner; May, 1963; 75 pp.
- 32-3 "Evaluation of the Cohesimeter Test for Asphaltic Concrete" R.A. Jimenez; May, 1963; 38 pp.
- 32-4 "An Electro-Mechanical System for Measuring the Dynamic Deflection of a Road Surface Caused by an Oscillating Load" F.H. Scrivner, W.M. Moore; December, 1964; 19 pp.
- 32-5 "A Trailer for Transporting the CHLOE Profilometer" L.E. Stark; November, 1964; 11 pp.
- 32-6 "Bending Strength of Asphaltic Concrete" R.A. Jimenez; August, 1966; 50 pp.
- 32-7 "A Flexible Pavement Design Formula and its Research Background" F.H. Scrivner, W.M. Moore; February, 1966; 96 pp.
- 32-8 "Evaluation of the Stiffness of Individual Layers in a Specially Designed Pavement Facility from Surface Deflections" F.H. Scrivner, W.M. Moore; June, 1966; 73 pp.
- 32-9 "Some Recent Findings in Flexible Pavement Research" F.H. Scrivner, W.M. Moore; July, 1967; 46 pp.
- 32-10 "A Comparison of Four Roughness Measuring Systems" M.B. Phillips, G. Swift; August, 1968; 30 pp.
- 32-11 "A Systems Approach to the Flexible Pavement Design Problem" F.H. Scrivner, W.M. Moore, W.F. McFarland, G.R. Carey; October, 1968; 99 pp. (PB183149) (Computer Program Superseded by Study 123)
- 32-12 "An Empirical Equation for Predicting Pavement Deflections" F.H. Scrivner, W.M. Moore; October, 1968; 42 pp.
- 32-13 "Flexible Pavement Performance Related to Deflections, Axle Applications, Temperature and Foundation Movements" F.H. Scrivner, C.H. Michalak; January, 1969; 68 pp. (PB186036)
- 32-14 "Analytical Methods Applied to the Measurement of Deflections and Wave Velocities on Highway Pavement: Part 1, Measurements of Deflections" W.H. Cogill; March, 1969; 69 pp.
- 32-15F "Analytical Methods Applied to the Measurements of Deflections and Wave Velocities on Highway Pavements: Part 2, Measurements of Wave Velocities" W.H. Cogill; March, 1969; 82 pp. (Wang and WHC Computer Programs)

- 2-5-62-33 "A STUDY OF VARIABLES WHICH AFFECT THE BEHAVIOR OF CONCRETE PILES DURING DRIVING" (Computer Programs WAVE Q2 and WEAP)
- 33-1 "A Report on Computer Study of Variables Which Affect the Behavior of Concrete Piles During Driving" T.J. Hirsch; August, 1963; 119 pp.
- 33-2 "A Report on Field Tests of Prestressed Concrete Piles During Driving" T.J. Hirsch; August, 1963; 44 pp.
- 33-3 "Driving Practices for Prestressed Concrete Piles" T.H. Hirsch; April, 1966, 7 pp.
- 33-4 "Impact Load-Deformation Properties of Pile Cushioning Materials" T.J. Hirsch, T.C. Edwards; May, 1966; 16 pp.
- 33-5 "An Annotated Bibliography: Soil Dynamics and Soil Rheology" P.C. Chan, T.J. Hirsch; June, 1966; 23 pp.
- 33-6 "Preliminary Investigation of Hauling Stresses in Prestressed Concrete Piles" T.C. Edwards, T.J. Hirsch; January, 1967, 19 pp. (PB174630)
- 33-7 "A Laboratory Study of Dynamic Load-Deformation and Damping Properties of Sand Concerned with a Pile-Soil System" P.C. Chan, T.J. Hirsch, H.M. Coyle; June, 1967; 41 pp. (PB176319)
- 33-7A Investigation of Sands Subjected to Dynamic Loading" G.N. Reeves, H.M. Coyle, T.J. Hirsch; December, 1967; 9 pp.
- 33-8 "Pile-Soil System Response In Clay As a Function of Excess Pore Water Pressure and Other Soil Properties" T.P. Airhart, T.J. Hirsch, H.M. Coyle; September, 1967; 37 pp.
- 33-9 "Pile Driving Analysis--Simulation of Hammers, Cushions, Piles and Soils" L.L. Lowery, Jr., T.J. Hirsch, C.H. Samson, Jr.; August, 1967; 81 pp. (PB179271)
- 33-10 "Use of the Wave Equation to Predict Soil Resistance on a Pile During Driving" L.L. Lowery, Jr., T.C. Edwards, T.J. Hirsch; August, 1968; 32 pp. (PB182887)
- 33-11 "Piling Analysis Wave Equation Computer Program Utilization Manual" T.C. Edwards; August, 1967; 40 pp.
- 33-12 "A Comparison of Dynamic Pile Driving Formulas with the Wave Equation" L.L. Lowery, Jr., J.R. Finley, Jr., T.J. Hirsch; August, 1968; 16 pp.
- 33-13F "Pile Driving Analysis - State of the Art" L.L. Lowery, Jr., T.J. Hirsch, T.C. Edwards, H.M. Coyle, C.H. Samson, Jr.; January, 1969; 79 pp. (PB186029)
- 2-18-62-34 "PROTECTIVE COATING FOR HARDENED CONCRETE"

- 34-1F "Moisture Protection for Concrete" H.L. Furr; September, 1963; 54 pp.
- 2-5-62-35 "LIGHTWEIGHT CONCRETE"
- 35-1 "A Report on Durability Studies of Structural Lightweight Concrete" (Unpublished)
- 35-2F "Selected Durability Studies of Structural Lightweight Concrete" W.B. Ledbetter, T.J. Hirsch, D.L. Ivey; December, 1966; 40 pp. (Unpublished)
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- 2-10-74-36 "PLANT MIX SEALS - MIX DESIGN AND PILOT TESTS"
- 36-1F "Mixture Design Concepts, Laboratory Tests and Construction Guides for Open Graded Bituminous Overlays" B.M. Gallaway, J.A. Epps; October, 1974; 144 pp. (PB241077)
- 1-6-62-37 "DISTRICT EVALUATION OF NUCLEAR MOISTURE DENSITY INSTRUMENTS"
- 37-1 "An Evaluation of the Moisture and Density Road Logger Unit" J.M. Bingham, J.R. White, Jr.; October, 1965; 31 pp.
- 37-2F "District Evaluation of Nuclear Type Moisture Density Instruments" J.M. Bingham, J.R. White, Jr.; February, 1966; 67 pp. (PB170873)
- 1-8-63-38 "DETERMINATION OF ACCURACIES OF EARTHWORK QUANTITIES FROM PHOTOGRAMMETRICALLY MADE SURVEYS"
- 38-1F "Determination of Accuracies of Earthwork Quantities from Photogrammetrically Made Surveys" R.L. Merrell; May, 1968; 49 pp. (PB179585)
- 1-8-63-39 "EVALUATION OF TERMINAL ANCHORAGE INSTALLATION ON RIGID PAVEMENTS"
- 39-1 "A Field Survey and Exploratory Excavation of Terminal Anchorage Failures on Jointed Concrete Pavement" B.F. McCullough; March, 1965; 43 pp.
- 39-2 "Parameters Influencing Terminal Movement on Continuously Reinforced Concrete Pavement" B.F. McCullough, T.F. Sewell; August, 1964; 32 pp.
- 39-3 "A Report on Continuity Between a Reinforced Concrete Pavement and a Continuous Slab Bridge" B.F. McCullough, F. Herber; August, 1966; 23 pp. (PB174972)
- 39-4F "An Evaluation of Terminal Anchorage Installations on Rigid Pavements" M.D. Shelby, R.L. Lewis, T.G. Huff; September, 1966; 34 pp.
- 1-19-73-40 "IMPLEMENTATION OF AUTOMATED MAPPING SYSTEM"

- 40-1F "Implementation of an Automated Mapping System" T.F. Howell; December, 1973; 39 pp.
- 2-6-74-41 "BITUMINOUS TREATED BASES"
- 41-1 "Mixture Design Methods for Emulsion-Treated Bases and Surfaces" D.N. Little, J.A. Epps, B.M. Gallaway; August, 1977; 73 pp. (PB279533)
- 41-2F "Economic Bituminous-Treated Bases" W.A. Schoen, J.A. Epps, B.M. Gallaway, D.N. Little; September, 1977; 222 pp. (PB279488)
- 1-21-63-42 "COMPUTER PROGRAM DEVELOPMENT"
- 42-1F "Computer Program Development" J.F. Mannix; December, 1965; 16 pp. (PB173661)
- 1-8-63-43 "STATISTICAL STUDIES OF UNIT PRICES AND SPECIFICATION DEVELOPMENT"
- 43-1F "A Highway Construction Bid Price Index" W.C. Teinert, E.G. Long; March, 1965; 66 pp.
- 1-15-63-44 "STUDIES OF RIGHT OF WAY REMAINDERS"
- 44-1 "Evaluation Report of Three Hundred Studies of Right-of-Way Remainers" B.W. Mauldin, May, 1967; 13 pp.
- 44-2F "Final Report on Studies of Right-of-Way Remainers" J.D. Jordan; April, 1970; 13 pp.
- 1-8-63-45 "DETERMINING AND EVALUATING THE SKID CHARACTERISTICS OF TEXAS HIGHWAYS"
- 45-1 "Development of A Skid Test Trailer" B.F. McCullough, K.D. Hankins; April, 1965; 34 pp.
- 45-2 "Skid Resistance Guidelines for Surface Improvements on Texas Highways" B.F. McCullough, K.D. Hankins; 1965; 34 pp. (PB173166)
- 45-3 "A Study of Factors Affecting the Operation of A Locked Wheel Skid Trailer" B.F. McCullough, K.D. Hankins; August, 1966; 22 pp.
- 45-4 "Pavement Surface Texture as Related to Skid Resistance" K.D. Hankins; August, 1967; 90 pp.
- 45-5F "Pavement Material Properties as Related to Skid Resistance" K.D. Hankins; August, 1969; 97 pp. (PB199354)
- 1-8-63-46 "PERFORMANCE STUDY OF CONTINUOUSLY REINFORCED CONCRETE PAVEMENT"

- 46-1 "Development of Equipment and Techniques for a Statewide Rigid Pavement Deflection Study" B.F. McCullough; January, 1965; 64 pp. (PB169819)
- 46-2 "Analysis of Steel Stress and Concrete Movement on an Experimental CRCP" B.F. McCullough, H.J. Treybig; May, 1968; 120 pp.
- 46-3 "Evaluation of Single Axle Load Response on an Experimental Continuously Reinforced Concrete Pavement" B.F. McCullough; April, 1965; 32 pp. (PB169817)
- 46-4 "Determining the Relationship of Variables in Deflection of Continuously Reinforced Concrete Pavement" B.F. McCullough, H.J. Treybig; August, 1965; 57 pp.
- 46-5 "A Statewide Deflection Study of Continuously Reinforced Concrete Pavement in Texas" B.F. McCullough, H.J. Treybig; August, 1966; 87 pp. (PB174235)
- 46-6 "A Laboratory Study of the Variables that Affect Pavement Deflection" B.F. McCullough, I.K. Mays; August, 1966; 37 pp. (PB174236)
- 46-7 "Observation and Analysis of Continuously Reinforced Concrete Pavement" H.J. Treybig; July, 1968; 43 pp. (PB179644)
- 46-8F "Performance of CRCP in Texas" H.J. Treybig; August, 1968; 33 pp. (PB185464)
- 2-8-63-47 "T. V. SURVEILLANCE SYSTEM FOR BAYTOWN-LAPORTE TUNNEL"
- 47-1F "Evaluation of the Television Surveillance System for the Baytown-LaPorte Tunnel" M.L. Radke, W.R. McCasland, C. Pinnell; February, 1966; 55 pp.
- 1-9-63-48 "COMPARISON OF AASHO AND TEXAS TEST METHODS AND SPECIFICATIONS FOR FLEXIBLE BASE"
- 48-1F "Comparison of AASHO and Texas Test Methods and Specifications for Flexible Base Materials" C. McDowell; May, 1966; 68 pp.
- 1-8-63-49 "DEVELOPMENT OF A CONSTRUCTION CONTROL PROFILOGRAPH"
- 49-1 "Construction Control Profilograph Principles" K.D. Hankins; June, 1967; 36 pp. (PB177470)
- 49-2 "A Study of Construction Equipment and Initial Pavement Roughness as Measured With a Profilograph" K.D. Hankins; August, 1968; 41 pp.
- 49-3F "Development of a Construction Control Profilograph" K.D. Hankins, H. Orellana; August, 1968; 93 pp. (PB183921)

- 1-10-63-50 "RESEARCH MANAGEMENT AND ADMINISTRATION" (Study Supervisor: J. P. Underwood)
- "Manual of Procedures for Research Studies" January, 1985, 61 pp.
- "Listing of Research Studies and Reports" January, 1986; 214pp.
- 2-14-63-51 "USE OF LIGHTWEIGHT AGGREGATES IN SEAL COAT AND SURFACE TREATMENT"
- 51-1 "Interim Report on the Use of Expanded Shale and Precoated Limestone as Coverstone for Seal Coats and Surface Treatments" B.M. Gallaway; August, 1964; 119 pp.
- Interim "A Recommended Synthetic Coarse Aggregate Classification System" W.B. Ledbetter, B.M. Gallaway, E. Buth, W.J. Harper, B.F. McCullough, M.D. Shelby; October, 1966; 21 pp.
- 51-2 "A Laboratory and Field Evaluation of Lightweight Aggregates as Coverstone for Seal Coats and Surface Treatments" B.M. Gallaway, W.J. Harper; April, 1966; 119 pp.
- 51-3 "Interim Report on the Laboratory Considerations for the Use of Synthetic Aggregates for Hot-Mix Asphalt Pavements" B.M. Gallaway, W.J. Harper, February, 1967; 44 pp. (PB174955)
- 51-4F "Final Report on the Use of Lightweight Aggregate in Flexible Pavements" B.M. Gallaway, W.J. Harper; August, 1967; 34 pp. (PB178120)
- 3-5-63-52 "DESIGN CRITERIA FOR CANTILEVER ENDS OF BENT CAPS"
- 52-1F "Design Criteria for Overhanging Ends of Bent Caps - Bond and Shear" P.M. Ferguson; August, 1964; 41 pp.
- 3-5-63-53 "DEVELOPMENT LENGTH FOR ANCHOR BOLTS"
- 53-1F "Development Length for Anchor Bolts" J.E. Breen; April, 1964; 67 pp.
- 3-10-63-54 "PORTABLE SCALE FOR WEIGHING VEHICLES IN MOTION"
- 54-1F "A Portable Electronic Scale for Weighing Vehicles in Motion" C.E. Lee, N.I. Al-Rashid; April, 1968; 123 pp.
- 3-8-63-55 "CRITICAL MECHANICAL PROPERTIES OF STRUCTURAL LIGHTWEIGHT CONCRETE"
- 55-1 "Relationship Between Critical Mechanical Properties and Age for Structural Lightweight Concrete" W.B. Ledbetter, J.N. Thompson; February, 1964; 124 pp.

- 55-2 "Volume Changes in Unrestrained Structural Lightweight Concrete" J.T. Houston, J.N. Thompson; August, 1964; 55 pp.
- 55-3F "Critical Mechanical Properties of Structural Lightweight Concrete and the Effects of these Properties on the Design of the Pavement Structure" W.B. Ledbetter, E.S. Perry, J.T. Houston, J.N. Thompson; January, 1965; 82 pp.
- 3-5-63-56 "COMPUTER SIMULATION OF BEAM COLUMNS AND GRID-BEAM SLAB SYSTEMS"
- 56-1 "A Finite-Element Method of Solution for Linearly Elastic Beam-Columns" H. Matlock, T.A. Haliburton; September, 1966; 198 pp. (Computer Program BMCOL 34, superseded by BMCOL 43, report 56-4)
- 56-2 "A Computer Program to Analyze Bending of Bent Caps" H. Matlock, W.B. Ingram; October, 1966; 149 pp. (Computer Program CAP 14; DHT version is CAP 17 and CAP 18)
- 56-3 "A Finite-Element Method of Solution for Structural Frames" H. Matlock, B.R. Grubbs; May, 1967; 112 pp. (Computer Program FRAME 4, report and program superseded by FRAME 11 in report 56-21)
- 56-4 "A Computer Program To Analyze Beam-Columns Under Moveable Loads" H. Matlock, T.P. Taylor; June, 1968; 198 pp. (Computer Program BMCOL 43; DHT versions are BMCOL 1 and ERECT 2)
- 56-5 "A Finite-Element Method for Bending Analysis of Layered Structural Systems" W.B. Ingram, H. Matlock; June, 1967; 263 pp. (Computer Program LAYER 7 and LAYER 8, superseded by SLAB 49, report 56-25)
- 56-6 "Discontinuous Orthotropic Plates and Pavement Slabs" W.R. Hudson, H. Matlock; May, 1966; 235 pp. (Computer Program SLAB 17, superseded by SLAB 49, report 56-25)
- 56-7 "A Finite-Element Analysis of Structural Frames" T.A. Haliburton, H. Matlock; July, 1967; 158 pp. (Computer Program PLNFRAM 4, superseded by FRAME 11, report 56-21)
- 56-8 "A Finite-Element Method for Transverse Vibration of Beams and Plates" H. Salani, H. Matlock; June, 1967; 125 pp. (Computer Programs DBC 1 - report and program superseded by report 56-24 Computer Program DBC5; Computer Program DPI 1, superseded by SLAB 35, report 56-17)
- 56-9 "A Direct Computer Solution for Plates and Pavement Slabs" C.F. Stelzer, Jr., W.R. Hudson; October, 1967; 139 pp. (Computer Program DSLAB 5, Superseded by SLAB 49, report 56-25)
- 56-10 "A Finite-Element Method of Analysis for Composite Beams" T.P. Taylor, H. Matlock; January, 1968; 161 pp. (Computer Program COMBM 1)

- 56-11 "A Discrete-Element Solution of Plates and Pavement Slabs Using a Variable-Increment Length Model" C.M. Pearre III, W.R. Hudson; April, 1969; 227 pp. (Computer Program VISAB 3)
- 56-12 "A Discrete-Element Method of Analysis for Combined Bending and Shear Deformations of a Beam" D.F. Tankersley, W.P. Dawkins; December, 1969; 227 pp. (Computer Program SHRBM 1)
- 56-13 "A Discrete-Element of Multiple-Loading Analysis for Two-Way Bridge Floor Slabs" J.J. Panak, H. Matlock; August, 1968; 195 pp (Computer Program SLAB 30, superseded by SLAB 49, report 56-25)
- 56-14 "A Direct Computer Solution for Plane Frames" W.P. Dawkins, J.R. Ruser; May, 1969; 240 pp. (Computer Program PFRM 11 superseded by FRAME 11, report 56-21)
- 56-15 "Experimental Verification of Discrete-Element Solutions for Plates and Pavement Slabs" S.L. Agarwal, W.R. Hudson; April, 1970; 255 pp.
- 56-16 "Experimental Evaluation of Subgrade Modulus and Its Application in Model Slab Studies" Q.S. Siddiqi, W.R. Hudson; January, 1970; 109 pp.
- 56-17 "Dynamic Analysis of Discrete-Element Plates on Nonlinear Foundations" A.E. Kelley, H. Matlock; July, 1970; 289 pp. (Computer Program SLAB 35)
- 56-18 "A Discrete-Element Analysis for Anisotropic Skew Plates and Grids" M.R. Vora, H. Matlock; August, 1970; 203 pp. (Computer Program SLAB 44)
- Interim "Field Investigation of a Skewed, Post-Stressed Continuous Slab Structure" H. Matlock, J.J. Panak, M.R. Vora, J.H.C. Chan; May, 1970; 37 pp. (Informal report)
- 56-19 "An Algebraic Equation Solution Process Formulated in Anticipation of Banded Linear Equations" F.L. Endres, H. Matlock; January, 1971; 103 pp. (Computer Programs TRIP 4 and FRIP 4)
- 56-20 "Finite-Element Method of Analysis for Plane Curved Girders" W.P. Dawkins; June, 1971; 105 pp. (Computer Program PCGR 2)
- 56-21 "Linearly Elastic Analysis of Plane Frames Subjected to Complex Loading Conditions" C.O. Hays, H. Matlock; June, 1971; 233 pp. (Computer Program FRAME 11)
- 56-22 "Analysis of Bending Stiffness Variation at Cracks in Continuous Pavements" A. Abou-Ayyash, W.R. Hudson; April, 1972; 125 pp.

- 56-23 "A Nonlinear Analysis of Statically Loaded Plane Frames Using a Discrete Element Model" C.O. Hays, H. Matlock; May, 1972; 331 pp. (Computer Program FRAME 51)
- 56-24 "A Discrete-Element Method for Transverse Vibrations of Beam-Columns Resting on Linearly Elastic or Inelastic Supports" C.J. Hsaio-chieh, H. Matlock; June, 1972; 229 pp. (Computer Program DBC 5)
- 56-25 "A Discrete-Element Method of Analysis for Orthogonal Slab and Grid Bridge Floor Systems" J.J. Panak, H. Matlock; May, 1972; 135 pp. (Computer Program SLAB 49)
- 56-26 "Application of Slab Analysis Methods to Rigid Pavement Problems" H.J. Treybig, W.R. Hudson, A. Abou-ayyash; May, 1972; 69 pp. (PB219023)
- 56-27 "A Summary of Discrete-Element Methods of Analysis for Pavement Slabs" W.R. Hudson, H.J. Treybig, A. Abou-ayyash; November, 1972; 50 pp.
- 56-28 "Finite-Element Analysis of Bridge Decks" M.R. Abdelraouf, H. Matlock; August, 1972, 129 pp. (Computer Program SHELL 6 - superceded by SHELL, report 155-1F)
- 56-29F "Computer Simulation of Beam Columns and Gird Beam and Slab Systems - Final Report" J.J. Panak; August, 1973; 70 pp. (PB242363)
- (Type B)
2-8-74-57 "DEVELOPMENT OF IMPROVED METHOD FOR PAVEMENT REHABILITATION FORECASTING"
- 57-1F "Forecasting Serviceability Loss of Flexible Pavements" D.Y. Lu, R.L. Lytton, W.M. Moore; November, 1974; 79 pp. (PB244603)
- 2-15-63-58 "EFFECT OF RIGHT-OF-WAY ACQUISITION ON RURAL FARMS AND RANCHES"
- 58-1 "Interim Report of the Right-of-Way Acquisition Effects on the Remaining Rural Farms and Ranches in Madison County" H.G. Meuth; 1965; 36 pp.
- 58-2 "Data Progress Report of the Right-of-Way Acquisition Effects on the Remaining Rural Farms & Ranches along IH-35E in Ellis County" H.G. Meuth; January, 1967; 48 pp.
- 58-3 "Data Progress Report on the Right-of-Way Acquisition Effects on the Remaining Rural Farms and Ranches along IH-10 through Colorado and Fayette Counties" H.G. Meuth; October 1967; 54 pp.
- 58-4 "Right-of-Way Effects of Controlled Access Type Highway on A Ranching Area In Madison County, Texas" H.G. Meuth; December, 1968; 139 pp. (PB185435)

- 58-5 "Right-of-Way Effects of Controlled Access Type Highway on A Farming Area in Ellis County, Texas" H.G. Meuth, J.L. Buffington; July, 1969; 133 pp.
- 58-6 "Right-of-Way Effects of Controlled Access Type Highway on A Farming Area in Colorado and Fayette Counties, Texas" H.G. Meuth; November, 1970; 107 pp.
- 58-7F "The Effect of Right-of-Way Acquisition on Farm and Ranch Operating Units" H.G. Meuth; June, 1971; 37 pp.
- 2-8-63-59 "EFFECTS OF OFF-RAMPS ON FREEWAY OPERATIONS"
- 59-1 "The Effects of Off-Ramps on Freeway Operation as Related to Deceleration Distance and Off-Ramp Capacity" (SEE NOTE)
- 59-2 "The Effects of Off-Ramps on Freeway Operation as Related to Short Trip Generation, Weaving Maneuvers, and Access Control" (SEE NOTE)
- 59-3 "The Effects of Off-Ramps on Freeway Operation as Related to Access Provisions" (SEE NOTE)
- 59-4F "Effects of Off-Ramps on Freeway Operations" W.E. Tipton, J.D. Carvell, C. Pinnell; October, 1965; 41 pp.
- (NOTE: Research Reports 59-1, 59-2, 59-3, 59-4F are all combined into report 59-4F)
- 2-8-63-60 "TRAFFIC ASSIGNMENT" (computer programs are obsolete)
- 60-1 "Texas A&M Traffic Assignment Link Data Editor for IBM 1401 Data Processing System" G.N. Williams; November, 1963; 12 pp.
- 60-2 "Texas A&M Traffic Assignment Edit Print Trip Volumes For IBM 1401 Data Processing System" W.F. Pry; November, 1963; 2 pp.
- 60-3 "Traffic Assignment Plot Systems for IBM 1401 and IBM 709-90-94 Data Processing Systems" W.F. Pry; September, 1964; 34 pp.
- 60-4 "Utilization of Computer Plotting in Traffic Assignment Analysis" W.F. Pry, C. Pinnell; November, 1964; 20 pp.
- 60-5 "Operating System Manual for Revised Texas Traffic Assignment System" C.W. Blumentritt; March, 1965, 53 pp.
- 60-6 "User's Manual for the Texas Large Systems Traffic Assignment Programs" V.G. Stover, C.W. Blumentritt; November, 1966; 165 pp.
- 60-7 "Availability of Secondary Data for Determining Employment and Sales By Traffic Zones" W.F. McMarland, V.G. Stover; July, 1967; 32 pp.

- 60-8 "The Effect of Zone Size on Traffic" D.L. Woods, V.G. Stover; August, 1967; 29 pp.
- 60-9 "Texas Traffic Assignment Practice" V.G. Stover, J.T. Brudeseth; October, 1967; 72 pp.
- 60-10 "The Effect of Turn Penalties on Minimum Paths in Coded Street Networks" J.T. Brudeseth, D.L. Woods; April, 1968; 24 pp.
- 60-11 "The Effect of Network Detail on Traffic Assignment Results" G.D. Long, V.G. Stover; August, 1967; 60 pp.
- 60-12 "A Partial Analysis of Trip Generation" J.C. Goodknight; August, 1968; 73 pp.
- 60-13 "An Evaluation of the Gravity Model Trip Distribution" G.D. Long; August; 1968; 96 pp.
- 60-14F "Final Summary Report on the Traffic Assignment Study" V.G. Stover; October, 1969; 20 pp.
- 1-9-63-61 "DEVELOPMENT OF INSTRUMENT FOR NON-DESTRUCTIVE MEASUREMENT OF CONCRETE PAVEMENT THICKNESS"
- 61-1F "Development of Instrument for Non-Destructive Measurement of Concrete Pavement Thickness" J.R. Canfield, W.M. Moore; June, 1967; 35 pp. (PB175948)
- 1-5-63-62 "INSULATION OF BRIDGE DECKS FOR ICE PREVENTION AND REDUCTION OF FREEZE-THAW CYCLES"
- 62-1F "Insulation of Bridge Decks for Ice Prevention and Reduction of Freeze-Thaw Cycles" H.D. Butler; February, 1966; 69 pp. (PB176076)
- 1-8-63-63 "PREPARATION OF GEOLOGIC INFORMATION FOR USE IN TEXAS HIGHWAY DEPARTMENT"
- 63-1 "Geology of Texas Highway Department - District 9" August, 1966; 85 pp.
- 63-2 "The Surface Geology and Related Soils of District 2 and Associated Maps" J.T. Gordon; September, 1966; 42 pp.
- 63-3 "Geology of Texas Highway Department - District 11" H.B. Davis; November, 1966; 61 pp.
- 63-4F "Geology of Texas Highway Department - District 19" J.L. Brown, J.E. Betts; 1968; 31 pp.
- 2-8-63-64 "AN ANALYSIS OF THE AVAILABILITY OF ECONOMIC BASE INFORMATION IN 19 URBAN AREAS IN TEXAS"

- 64-1F "An Analysis of the Availability of Economic Base Information in Nineteen Urban Areas in Texas" C.V. Wootan; December, 1963; 212 pp.
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- 241-3 DHT Size and Weight Committee, in 1981 instructed the researchers to defer work on this task in favor of 241-2, 4, 5, and 6. This effort has been initiated under Project 356.
- 241-4 "An Assessment of Recent State Truck Size and Weight Studies" C.M. Walton, C. Yu, P. Ng, S. Tobias; February, 1982; 145 pp.
- 241-5 "Truck Weight Shifting Methodology for Predicting Highway Loads" C.M. Walton, C. Yu, P. Ng; September, 1982; 184 pp.
- 241-6F "An Assessment of the Enforcement of Truck Size and Weight Limitations in Texas" C.M. Walton, C. Yu; August, 1982; 118 pp.
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- 243-1F "Evaluation of the Dynamic Arterial-Responsive Traffic System (DARTS)" C.E. Lee; March, 1982; 60 pp.
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- 244-1 "Analysis of Single Piles Under Lateral Loading" B.J. Meyer, L.C. Reese; December, 1979; 145 pp. (PB81-110272)
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- 246-1 "Polymer Concrete for Precast Repair of Continuously Reinforced Concrete Pavement on IH-30 near Mt. Pleasant" A.H. Meyer, B.F. McCullough, D.W. Fowler; August, 1981; 45 pp. (PB82-197229)
- 246-2 "Detection of Voids Underneath Concrete Pavements Using Infrared Thermography" M.E. Bukowski, R.L. Tucker, D.W. Fowler; June, 1983; 94 pp. (PB85175008/AS)
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- 252-1 "Mixture Design Procedure for Recycled Asphalt Pavements" T.W. Kennedy, F.L. Roberts, J.N. Anagnos; May, 1982; 34 pp.
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- 1-10-85-274 "RESEARCH FIELD TEST SUPPORT" (Study Supervisor: C. Goss)

- 1-10-84-275 "TECHNOLOGY TRANSFER PROGRAMS AND OPERATIONS" (Study Supervisor: C.L. King)
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- 2-5-86-462 "EFFECTS OF OVERLOADS ON THE SERVICE LIFE OF BRIDGES" (Study Supervisor: R. James)
- 3-5-86-463 "DISTRIBUTION OF POST-TENSIONING FORCES PRIOR TO GROUTING TENDONS" (Study Supervisor: N. Burns)
- 3-5-86-464 "ESTIMATING RESIDUAL FATIGUE LIFE OF BRIDGES" (Study Supervisor: K. Frank)
- 3-5-86-465 "FATIGUE STRENGTH OF POST-TENSIONED CONCRETE" (Study Supervisor: M. Kreger)
- 465-1 "An Exploratory Investigation of Shear Fatigue Behavior of Prestressed Concrete Girders" P.M. Bachman, M.E. Kreger, J.E. Breen; June, 1987; 198 pp.
- 3-5-86-466 "2-DIMENSIONAL ANALYSIS OF BACKWATER AT BRIDGES" (Study Supervisor: L. May)
- 2-18-86-467 "ENHANCEMENTS TO PASSER II - 84" (Study Supervisor: E. Chang)
- 3-8-85-468 "FIELD EVALUATION TO OBTAIN DENSITY IN ASPHALT MIXTURES" (Study Supervisor: T. W. Kennedy)

Part I

- 2-10-85-469 "AUTOMATIC RETRIEVAL OF AUTOMATIC TRAFFIC RECORDER DATA" (Study Supervisor: J. Y. Lee)
- 469-1F "Automatic Retrieval of ATR Data" J. Y. Lee, H. Y. Yeom; August, 1985; 24 pp.

(State Funded)

- 1-10-86-470 "ADMINISTRATIVE AND REPRODUCTION SUPPORT OF STATE-FUNDED RESEARCH" (Study Supervisor: J. Underwood)
- 2-9-85-471 "ASPHALT ADDITIVES FOR INCREASED FLEXIBILITY OF ASPHALT PAVEMENT" (Study Supervisors: J.W. Button, S. Shuler) (Being Evaluated Under Study 187)

- 471-1 "Another Look at Chemcrete" C.K. Adams, J.W. Button; November, 1986; 73 pp. (PB87-233201/AS)
- 471-2F "Asphalt Additives for Increased Pavement Flexibility" J.W. Button, D.N. Little; November, 1986; 227 pp.
- 3-8-86-472 "RIGID PAVEMENT DATA BASE" (Study Supervisor: B. F. McCullough)
- 2-18-87-473 "INVESTIGATION OF THE EFFECTS OF RAISING LEGAL LOAD LIMITS TO 80,000 LBS. ON FARM-TO-MARKET ROADS" (Study Supervisors: R. Lytton, R.E. Smith)
- 2-9-85-474 "DEVELOP IMPROVED ASPHALT CONCRETE MIXTURES DESIGN" (Study Supervisors: D.N. Little, M. Olsen) (To be continued in Project 1170)
- 1-5-86-475 "AASHTO JOINT DEVELOPMENT PROJECT - BRIDGE DESIGN SYSTEM (BDS)" (Study to be done by AASHTO)
- 2-8-85-476 "INVESTIGATE AND IMPROVE CURRENT METHODS OF PREDICTING LOAD EQUIVALENTS FOR DESIGN" (Study Supervisors: M. Olsen, R.L. Lytton)
- 476-1 "The Development of New Load Equivalence Factors for Flexible Pavement Design in Texas" F.L. Roberts, R.L. Lytton, Z. Hajeer; January, 1986; 204 pp.
- 476-2F "Lane Distribution Factors for Design" W.D. Cunagin; April, 1987; 64 pp.
- 2-9-85-477 "ASPHALT CONCRETE-PAVEMENT MARKER COMPATIBILITY STUDY" (Study Supervisor: F.L. Roberts)
- 2-18-85-478 "OPERATIONS AND DESIGN APPLICATIONS USING PASSER III-85" (Study Supervisor: C. Messer)
- 8-10-86-479 "UPGRADE OF SELF-CALIBRATING ROAD-ROUGHNESS DEVICE (SIOMETER)" (Study Supervisor: R. Walker)
- 479-1F "The Walker Profiler Device for Roughness Measurements" R.S. Walker, L.T. Phung; July, 1987; 45 pp.
- 2-10-85-480 "EVALUATION OF HIGHWAY PERFORMANCE MONITORING SYSTEM FOR USE IN TEXAS" (Study Supervisor: J.L. Memmott)
- 480-1 "Sample Size and Accuracy of Highway Performance Monitoring System" J.L. Memmott; August, 1985; 22 pp.
- 3-5/9-87-481 "DURABILITY AND PERFORMANCE OF CONCRETE CONTAINING FLY ASH INCLUDING ITS USE IN HOT WEATHER CONCRETING" (Study Supervisor: R. Carrasquillo)

(State Funded)

- 2-10-85-482 "STUDY OF SAFETY DEVICES REQUIRED BY HB89" (Study Supervisor: G.S. Bridges)
- 482-1F "Study of Safety Devices Required by HB89" G.S. Bridges; January, 1985; 44 pp.
- 2-5-85-483 "DEVELOPMENT OF A METHOD TO PRODUCE STABLE FOUNDATIONS FOR HIGHWAY-RAILROAD GRADE CROSSINGS" (Study Supervisor: J.R. Morgan)
- 483-1F "Development of a Stable Foundation for Highway-Railroad Grade Crossings" J.R. Morgan, R.M. Olson; November, 1986; 36 pp.
- 2-10-84-484 "AN EVALUATION OF THE IMPACT OF PERMITTING CARPOOLS TO USE THE KATY TRANSITWAY" (Study Supervisors: D. Christiansen, W.R. McCasland)
- 484-1 "The Impacts of Carpool Utilization on the Katy Freeway Authorized Vehicle Lane 'Before' Data" D. Christiansen, W.R. McCasland; July, 1985; 130 pp. (PB86-196524/AS)
- 484-2 "The Impacts of Carpool Utilization on the Katy Freeway Authorized Vehicle Lane Initial Carpool Surveys" D.L. Christiansen; December, 1985; 36 pp. (PB87-121919/AS)
- 484-3 "Impacts of Carpool Utilization on the Katy Freeway Authorized Vehicle Lane 12-Month 'After' Evaluation" D. Christiansen and W. R. McCasland; August, 1986; 58 pp. (PB87-187852/AS)
- 484-4 "An Analysis of Survey Data From The Katy and North Transitways" D. Bullard; September, 1986; 126 pp. (PB87-190575/AS)
- 484-5 "Off-Peak Use of the Houston Transitway System" J.M. Mounce, R.W. Stokes; December, 1986; 59 pp.
- 1-10-86-485 "IMPLEMENTATION OF RESEARCH RESULTS: FIELD AREA 2" (Study Supervisor: S. Golding)
- 1-10-86-486 "RESEARCH IMPLEMENTATION: FIELD AREA 3" (Study Supervisor: B. Hubbard)
- 1-19-86-487 "DEVELOPMENT OF THE INTERACTIVE GRAPHICS ROADWAY DESIGN STUDY" (Study to be done by AASHTO)
- (State Funded)
- 3-10-85-488 "ANALYSIS AND EVALUATION OF HIGHWAY PROJECTS AND PROGRAMS" (Study Supervisor: W. Ward)
- 2-15-86-489 "INCREASED LAND ACCESSIBILITY DUE TO HIGHWAY PROJECTS" (Study Supervisor: S. Smith)
- 489-1 "Measuring the Benefits of Increased Land Accessibility Due to Highway Projects: Literature Review and Survey of Current Practices" E.J. Washington, R.W. Stokes, G.C. Udenwa; January, 1987; 125 pp.

- 3-9-86-490 "STRATEGIC RESEARCH PLAN FOR ACHIEVING ADEQUATE PAVEMENT FRICTION" (Study Supervisor: D. Fowler)
- 2-10-86-491 "EVALUATION OF TRUCK SIZES, WEIGHTS AND TIRE PRESSURES" (Companion to study 378) (Study Supervisors: J. Lamkin, F. Roberts)
- 3-9-87-492 "MIX DESIGN PROCEDURES AND CONSIDERATIONS FOR POLYMER MODIFIED ASPHALT COMPATABILITY AND STABILITY" (Study Supervisors: T. Kennedy, R. Holmgreen)

Part I

- 2-10-86-493 "FEASIBILITY OF AUTOMATING TRUCK-TIRE PRESSURE DATA COLLECTION" (Study Supervisor: W. Cunagin)
 - 493-1F "Feasibility of Automating Truck Tire Pressure Data Collection" W. Cunagin, N. Ayoub; November, 1986; 43 pp. (PB87-188066/AS)
- 8-10-85-494 "UPGRADE PROFILOMETER FOR NON-CONTACT MEASUREMENTS" (Study Supervisor: R.S. Walker)
 - 494-1F "Upgrade of 690D Surface Dynamics Profilometer for Non-Contact Measurements" R.S. Walker, J.S. Schuchman; July, 1987; 52 pp.
- 2-18-85-495 "TRAINING PROGRAM ON MUTCD WORK-ZONE TRAFFIC CONTROL REQUIREMENTS" (Study Supervisor: C. Dudek)
 - 495-1 Video Tape "Arrowboard Usage in Work Zones" C. Dudek
- 2-10-85-496 "ACR SCHEDULING AND INFORMATION MANAGEMENT SYSTEM" (Study Supervisor: J.Y. Lee) (HPR Part I Project)
 - 496-1F "ACR Scheduling and Information Management System" J. Lee, D. Chang, D. Vitello; August, 1986; 81 pp.

(State Funded)

- 1-10-86-497 "DEVELOPMENT OF PHOTOGRAPHIC PRESENTATIONS AND AIDS" (Study Supervisor: C. King)

Slide Presentation

"It's What You Don't See That Counts" C. King

(State Funded)

- 2-10-86-498 "DEVELOPMENT AND EVALUATION OF PROJECT RANKING TECHNIQUES" (Study Supervisor: W. McFarland)

- 1-10-86-499 "RESEARCH IMPLEMENTATION: FIELD AREA 4"

(Note: HPR Studies Continued in Part VI)

PART II

Listing of FCP, FCIP, RTAP and Demonstration Studies and Reports

FCP

- 1-19-73-152, (DOT-FH-11-7977)
"MAINTENANCE AND REFINEMENT OF THE ROADWAY DESIGN SYSTEM"
- 152-1F "Maintenance and Refinement of the Roadway Design System" W.L. Crawford, F. Herber, C. Powers, D. Wyly; April, 1974, 49 pp. (Computer Program RDS 5.0)
- (Demo.) (DTFH71-84-34-TX-18)
1-10-85-500 "CATHODIC PROTECTION FOR REINFORCED CONCRETE BRIDGE DECK - BIG SPRING" (Study Supervisor: D. Hustace)
- 1-8-71-501 "FREEWAY CONTROL DEMONSTRATION" (Study Supervisors: P.R. Tutt, W.R. McCasland) (No Reports Published)
- 3-8-71-502 "EVALUATION AND REVISION OF TEXAS HIGHWAY DEPARTMENT RIGID PAVEMENT DESIGN PROCEDURE"
- 502-1F "Evaluation and Revision of Texas Highway Department Rigid Pavement Design Procedure" B.F. McCullough, H.S. Treybig, R.K. Kher; November, 1972; 115 pp.
- 2-18-71-503 "MAINTENANCE MATERIALS FOR HIGH FRICTION PAVEMENT IMPLEMENTATION"
- 503-1F "Lightweight Hot-Mix, Cold Laid Maintenance Mixture" H.D. Swilley, B.M. Gallaway, J.A. Epps; December, 1972; 41 pp.
- 1-9-72-504 "FIELD EVALUATION OF VOID SPACING INDICATOR"
- 504-1F "Field Evaluation of Void Spacing Indicator" B.N. Banister; February, 1974; 47 pp. (PB2394)
- 3-5-72-505 "UTILIZATION OF NEW ANALYTICAL METHODS IN BRIDGE DESIGN"
- 505-1F "Utilization of New Analytical Methods in Bridge Design" J.J. Panak; August, 1974; 12 pp.
- 2-18-71-506 "DEVELOPMENT OF DESIGN CHARTS FOR MINOR SERVICE STRUCTURE FOUNDATIONS"
- 506-1F "Design Charts for Minor Service Structures Foundations" R.L. Lytton; September, 1971, 60 pp.
- FCP
1-9-74-507, (DOT-FH-11-8555)
"DEMONSTRATION AND EVALUATION OF THE DELAMINATION DETECTOR"

507-1F "Demonstration and Evaluation of the Delamination Detector" J.B. Canfield; October, 1974; 50 pp.

FCIP

1-10-75-508, (DOT-FH-11-8608 #5)
"EVALUATION OF POLYMER IMPREGNATION ON NEW BRIDGE DECKS"

508-1 "Polymer Impregnation of Existing Concrete Bridge Decks" R.L. Tyler, J.P. Underwood, T.R. Kennedy; March, 1976; 38 pp.

508-2F "Polymer Impregnation of New Concrete Bridge Decks" T.R. Kennedy; October, 1977; 79 pp. (Also Published as FHWA-RD-78504)

1-15D-78-509, (DOT-FH-11-8608 #12)
"SAN ANTONIO MAJOR POINT DIVERSION STUDY" (Study Supervisors: M. Dietert, G. Gavia)(No report prepared under this study; work to be continued under Study 1-15D-79-540.)

FCIP

1-10-75-510, (DOT-FH-11-8608 #4)
"SPRINKLE MIX FOR SKID RESISTANT SURFACES"

510-1F, Volume I
"Sprinkle Treatment for Skid Resistant Surfaces" J.F. Nixon, T.R. Kennedy, D. Hustace, J.P. Underwood; April, 1977; 37 pp.

510-1F, Volume II
"Sprinkle Treatment for Skid Resistant Surfaces - Supplementary Information" J.F. Nixon, T.R. Kennedy, D. Hustace, J.P. Underwood; April, 1977; 166 pp.

FCIP

1-9-78-511, (DOT-FH-11-8608 #13)
"IMPROVED UTILIZATION OF THE BURNING WITH EXCESS OXYGEN PROCESS FOR REMOVAL OF TRAFFIC MARKINGS"

511-1 "Summary Report and Operations Manual - Removal of Traffic Markings by High-Temperature Burning with Excess Oxygen" D. Killgore; May, 1979; 28 pp. (Also published as FHWA-1P-80-6)

511-2 "Equipment Improvements for Removal of Traffic Markings by High-Temperature Burning with Excess Oxygen" D. Killgore; May, 1979; 89 pp. (Also published as FHWA-TS-80-208)

FCIP

1-10-75-512, (DOT-FH-11-8608 #1)
"POST CONSTRUCTION EVALUATION OF SULPHUR ASPHALT PAVEMENT TEST SECTIONS"

- 512-1 "Sulphur/Asphalt Mixture Design & Construction Details - Lufkin Field Trials" B.M. Gallaway, D. Saylak; January, 1976; 59 pp. (Also published as FHWA-TS-78-003)(PB279093)
- 512-2 "Interim Report No. 2: Post Construction Evaluation of Sulphur-Asphalt Pavement Test Sections" D. Saylak, B.M. Gallaway; October, 1976; 9 pp.
- 512-3 "Interim Report No. 3: Post Construction Evaluation of Sulphur-Asphalt Pavement Test Sections" D. Saylak, B.M. Gallaway; May, 1977; 9 pp.
- 512-4 "Interim Report No. 4: Post Construction Evaluation of U.S. 69 Sulphur-Asphalt Pavement Test Sections in Lufkin, Texas" D. Saylak, B.M. Gallaway; October, 1977; 8 pp.
- 512-5 "Interim Report No. 5: Post Construction Evaluation of U.S. 69 Sulphur-Asphalt Pavement Test Section in Lufkin, Texas" D. Newcomb, D. Saylak, B.M. Gallaway; September, 1978; 19 pp.
- 512-6 "Interim Report No. 6: Post Construction Evaluation of U.S. 69 Sulphur-Asphalt Pavement Test Sections in Lufkin, Texas" B.M. Gallaway, D. Newcomb, D. Saylak; February, 1979; 16 pp.
- 512-7 "Post-Construction Evaluation of U.S. 69 Sulphur-Extended-Asphalt (SEA) Pavement Test Sections in Lufkin, Texas" D. Saylak, C.Y. Jacobs, B.M. Gallaway; August, 1980; 75 pp. (Also published as FHWA-TS-80-235)
- 512-8 "Letter Progress Report on U.S. 69 Sulphur-Asphalt Pavement Test Sections in Lufkin, Texas" B.M. Gallaway; January, 1981; 3 pp.
- 512-9 "Interim Report No. 7: Post Construction Evaluation of U.S. 69 Sulphur-Asphalt Pavement Test Sections in Lufkin, Texas" B.M. Gallaway, F.C. Benson, D. Saylak; December, 1981; 24 pp.
- 512-10 "Letter Progress Report on U.S. 69 Sulphur-Asphalt Pavement Test Sections in Lufkin, Texas" B.M. Gallaway; December, 1981; 4 pp.
- 512-11 "Letter Progress Report on U.S. 69 Sulphur-Asphalt Pavement Test Sections in Lufkin, Texas" B.M. Gallaway; June, 1982; 4 pp.
- 512-12/13F "Post Construction Evaluation of U.S. 69 Sulphur Asphalt Pavement Test Sections in Lufkin, Texas" F.C. Benson, B.M. Gallaway, D. Saylak; July, 1983; 142 pp.

1-11D-85-513, (DTFH71-85-507-TX-19) (Cancelled)
 "RETROFIT SAFETY GRATES ON PARALLEL ROADSIDE DRAINAGE STRUCTURES"
 (Study Supervisor: D. Hustace)

(State Funded)

3-10-76-514 "EFFECTS OF TEMPERATURE ON PLASTIC CRASH CUSHIONS"

- 514-1F "Effects of Temperature Change on Plastic Crash Cushions" V.N. Toth, C.E. Lee; January, 1976; 31 pp.
- FCIP
1-5-76-515, (DOT-FH-11-8608 #3)
"WORKSHOP ON TWO-DIMENSIONAL MATHEMATICAL MODEL FOR USE IN HYDRAULIC PROBLEMS"
- 515-1F "Summary Report from Workshop on Two-Dimensional Mathematical Models for Use in Hydraulic Problems" F.D. Masch; September, 1976; 78 pp. (FHWA Report No. 77-55)
- FCIP
1-8-77-516, (DOT-FH-11-8608 #9)
"CHARACTERISTICS OF HIGHWAY RUNOFF"
- 516-1F "Characteristics of Highway Runoff in Texas" R.D. Moe, J.A. Bullin, J.C. Polasek, September, 1978; 60 pp. (FHWA-RD-78-197)
- FCIP
1-12D-77-517, (DOT-FH-11-8608 #10)
"FREEWAY MODIFICATIONS TO INCREASE TRAFFIC FLOW"
- 517-1 "Freeway Modifications to Increase Traffic Flow - Bibliography of Technical Reports" W.R. McCasland; May, 1970; 81 pp. (Unpublished)
- 517-2F "Freeway Modifications to Increase Traffic Flow-Final Report" W.R. McCasland, R.G. Biggs; October, 1978; 106 pp.
- FCIP
1-10-79-518, (DOT-FH-11-8608 #16)
"EVALUATION OF COMMERCIAL BLAST CLEANING DEVICES"
- 518-1F "Evaluation of Commercial Blast Cleaning Systems - Final Report" J.P. Underwood; June, 1980; 3 pp.
- FCIP
1-9-76-519, (DOT-FH-11-8608 #6)
"CONSTRUCTION AND EVALUATION OF KENEDY COUNTY SULFUR ASPHALT TEST SECTIONS"
- 519-1 "Sand-Asphalt-Sulphur Pavement Experimental Project-Highway U.S. 77, Kenedy County, Texas - A Construction Report" J.O. Izatt, B. M. Gallaway, D. Saylak; April, 1977; 110 pp. (FHWA-TS-78-204) (PB279199)
- 519-2 "Post Construction Evaluation of U.S. 77 Kenedy County Sulfur - Asphalt - Sand Pavement Test Sections" D. Saylak, B.M. Gallaway; October, 1977; 106 pp.
- 519-3 "Beneficial Use of Sulphur in Sulphur Asphalt Pavements" D. Saylak, B.M. Gallaway; February, 1978; 33 pp.

- 519-4 "Beneficial Use of Sulphur in Sulphur Asphalt Pavements" C.Y. Jacobs, D.E. Newcomb, D. Saylak, B.M. Gallaway; October, 1978; 44 pp.
- 519-5 "Post Construction Evaluation of Sand-Asphalt-Sulphur Test Section, Kenedy County, Texas" B.M. Gallaway, D.E. Newcomb, D. Saylak; March, 1979; 15 pp.
- 519-6 "Post Construction Evaluation of Sand-Asphalt-Sulphur Test Section, Kenedy County, Texas" B.M. Gallaway, D.E. Newcomb, D. Saylak; September, 1979; 22 pp.
- 519-7F "Post Construction Evaluation of Sand-Asphalt-Sulfur Test Section, Kenedy County, Texas - Final Report" D. Saylak, B.M. Gallaway, C.Y. Jacobs, S.W. Bigley; November, 1980; 55 pp.

(NOTE: For a 4th-Year Observation Report on this project, refer to Report No. 187-8.)

FCP

1-9-75-520, (DOT-FH-11-8910)

"DEVELOPMENT OF AN INTERACTIVE GRAPHICS AIDED DESIGN SYSTEM"

- 520-1 "Conceptual Design of an Interactive Graphics Aided Design System" W.L. Crawford; January, 1977; 82 pp.
- 520-2 "Interactive Graphics Aided Design System Summary of General System Design" W.L. Crawford; September, 1978; 49 pp.
- 520-3 "Interactive Graphics Aided Design System-General System Design" W.L. Crawford; February, 1983; 167 pp.
- 520-4F "Interactive Graphics Roadway Design System-System Design" W.L. Crawford, C.W. Beilfuss; September, 1983; 185 pp.

FCIP

1-5-76-521, (DOT-FH-11-8608 #7)

"SLIDE CASSETTE TAPE PRESENTATION ON THE QUICK LOAD TESTING METHOD"

- 521-1F "The Texas Quick-Load Method for Foundation Load Testing - User's Manual" H.D. Butler, H.E. Hoy; December, 1976; 58 pp. (PB267353)

(Demo.)

1-25D-76-522, (DOT-FH-15-196)

"CATHODIC PROTECTION FOR REINFORCED CONCRETE BRIDGE DECKS"

- 522-1F "Cathodic Protection Installation - Final Report" August, 1981; 38 pp.

(Demo.)

1-24D-76-523, (DOT-FH-15-185)

"DISCARDED TIRES IN HIGHWAY CONSTRUCTION"

- 523-1 "Initial Report on Rubberized Asphalt Seal on IH-10 in Hudspeth County, Texas" September, 1976; 44 pp.
- 523-2 "Eight-Month Evaluation of Rubberized Asphalt Seal on IH-10 in Hudspeth County, Texas" February, 1977, 6 pp.
- 523-3 "Fourteenth-Month Evaluation of Rubberized Asphalt Seal on IH-10 in Hudspeth County, Texas" September, 1977, 6 pp.
- 523-4F "Discarded Tires in Highway Construction - Final Report" J.L. Lawrence, C.W. Titus; September, 1981; 15 pp.

(Demo.)

1-9-76-524, (DOT-FH-15-189)

"RECYCLING ASPHALT CONCRETE PAVEMENT"

- 524-1 "Recycling Asphalt Concrete Pavement" C.H. Hughes; August, 1977; 140 pp.
- 524-2F "Recycling Asphalt Concrete Pavement" C.H. Hughes; November, 1981; 63 pp.

FCIP

1-18-76-525, (DOT-FH-11-9185)

"TRAINING COURSE ON HIGHWAY SAFETY IMPROVEMENT PROGRAMMING"

- 525-1F, Volume I
"Safety Improvement Programming for Roadside Obstacles - Volume I: Course Text"
- 525-1F, Volume II
"Safety Improvement Programming for Roadside Obstacles - Volume II: Instructor's Manual" G.D. Weaver, D.R. Hatcher, A. Huber, D.L. Woods, W.R. Ratcliff, W.L. Crawford, A.L. Luedecke, Jr.; September, 1977; 198 pp.
- 525-1F, Volume III
"Safety Improvement Programming for Roadside Obstacles - Volume III: Project Report" G.D. Weaver, A. Huber, D.R. Hatcher; September, 1977; 52 pp.
- 525-1F, Volume IV
"Safety Improvement Programming for Roadside Obstacles - Volume IV: Computer Documentation"

(Demo.)

1-10-76-526, (DOT-FH-15-194)

"EVALUATION OF OVERFLEX PAVEMENT TEST SECTIONS"

- 526-1 "Experimental Seal Coat Construction - Including Overflex" K.D. Hankins, J.F. Nixon; December, 1976; 29 pp.
- 526-2F "Experimental Seal Coat Construction, Including Overflex-Two Year Analysis" K.D. Hankins, J.F. Nixon; November, 1978; 75 pp. (Also published as "Demonstration Project No. 37-Discarded Tires in Highway Construction-Texas" FHWA-DP-37-1; March, 1979)

(NOTE: For a 53-Month update on this Project, refer to Report 187-7.)

(Demo.)

1-8D-77-527, (DOT-FH-15-222)
"RECYCLING ASPHALT PAVEMENT"

- 527-1 "Recycling Asphalt Pavements - Roscoe, Texas" B.R. Lindley; November, 1978; 132 pp. (Also published as FHWA-DP-39-11)
- 527-2F "Recycling Asphalt Pavement" B.R. Lindley; January, 1980; 3 pp.

FCP

1-8-77-528, (DOT-FH-11-9238)
"MEASUREMENT AND ANALYSIS OF RESUSPENDED ROADWAY DUST IN TEXAS"

- 528-1F "The Measurement and Analysis of Resuspended Dust from Roadways in Texas" J.A. Bullin, R.D. Moe, J.P. Miculka; October, 1979; 357 pp.

(Demo.)

1-17D-7-529, (DOT-FH-15-226)
"EVALUATION OF RUBBER ASPHALT MIXTURE USED AS A STRESS RELIEVING INNER LAYER"

- 529-1F "Evaluation of Rubber-Asphalt Mixture used as a Stress-Relieving Inner Layer" J.A. Blasienz, A.A. Geick; December, 1979; 52 pp. (Also published as FHWA-DP-37-13)

(Demo.)

1-21D-77-530, (DOT-FH-15-224)
"RECYCLING ASPHALTIC CONCRETE PAVEMENT"

- 530-1 "Surface Recycling Asphaltic Concrete Pavement" W.D. Barnes, J.T. Trammell; September, 1977; 55 pp. (Also published as FHWA-DP-39-2 "Recycling Asphalt Pavements - McAllen, Texas")
- 530-2F "Surface Recycling Asphaltic Concrete Pavement" W.D. Barnes, J.T. Trammell; May, 1980; 2 pp.

(Demo.)

1-10-77-531, (DOT-FH-15-227)
"AN EVALUATION OF SPRINKLE TREATMENT PLACEMENT PROCEDURES" (Study Supervisors: M. Prince, B.R. Lindley)

- 531-1 "Sprinkle Treatment Placement - IH 20 - Roscoe, Texas" J.P. Underwood; April, 1980; 23 pp. (Also published as FHWA-DP-50-6A)
- 531-2F "Sprinkle Treatment Placement - U.S. 59 - Lufkin, Texas" J.P. Underwood; November, 1981; 34 pp. (Also published as FHWA-DP-50-6B)

FCIP

1-18-77-532, (DOT-FH-11-8608 #8)
 "VALUE ENGINEERING ANALYSIS OF SELECTED MAINTENANCE ACTIVITIES: THE REPAIR OF CONTINUOUSLY REINFORCED CONCRETE PAVEMENT"

- 532-1F "Repair of Continuously Reinforced Concrete Pavement" W.R. Brown, H.F. Garison, R.P. Hudson, G.B. Peck, E.F. Wyatt, State Highway Departments of Arkansas, Louisiana and Mississippi, and Federal Highway Administration; January, 1978; 42 pp. (Also published as FHWA-TS-78-215)

FCIP

1-18-78-533, (DOT-FH-11-8608 #11)
 "IMPLEMENTATION OF HIGHWAY SAFETY PROJECT EVALUATION PROCEDURES"

- 533-1F "Implementation of Highway Safety Project Evaluation Procedures - Evaluation Plans and Evaluation Reports for Three Selected Sites" December, 1979; 99 pp.

FCIP

1-10-78-534, (DOT-FH-15-311)
 "ASPHALT TANKS WITH SOLAR HEATING"

- 534-1 "Solar Heating an Asphalt Storage Tank in San Antonio, Texas" K.D. Hankins; December, 1980; 67 pp.
- 534-2F "Using Solar Heating with Asphalt Storage - San Antonio, Texas" K.D. Hankins; May, 1982; 25 pp.

FCIP

1-9-78-535, (DOT-FH-11-8608 T.O. #14)
 "REGIONAL WORKSHOP ON QUALITY IN CONSTRUCTION - STATE OF THE ART"

- 535-1F "Conference on Quality in Construction"; The following papers were presented at the conference:
- A. "The Relation of Quality Assurance Procedures to Highway Performance" W.J. Halstead; June, 1978; 20 pp.
 - B. "National Trends in Quality Construction" S. LaHue; June, 1978; 14 pp.
 - C. "Associated General Contractors' Position-Statistically Oriented End-Result Specifications" D. Pitcock; August, 1977; 44 pp.

- D. "Improved Work Methods and Effective Use of Construction Manpower" J. Olds; June, 1978; 7 pp.
- E. "Construction Manpower Management in Arkansas" J. Tallant; June, 1978; 23 pp.
- F. "Development of Rapid Testing Procedures" G. Allen; June, 1978, 49 pp.
- G. "Legally Defensible Specifications" D. Fowler; June, 1978, 19 pp.
- H. "Achieving Quality in Construction" M. Moran; June, 1978; 13 pp.
- I. "Better Construction with Superplasticizers in Concrete Bridge Deck Construction" R.A. Vansickle; June, 1978; 7 pp.
- J. "Slurry Displacement Construction of Drilled Shafts" C.R. Rea; June, 1978; 13 pp.

FCIP

1-10-78-536, (DOT-FH-11-8608 T.O. #15)
 "EXTENDED ASPHALT BINDER BY USE OF SULPHUR"

- 536-1 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas - Progress Report No. 1" D.E. Newcomb, B.M. Gallaway; September, 1979; 9 pp.
- 536-2 "Sulphur Extended Asphalt Field Trails - MH 153, Brazos County, Texas - A Detailed Construction Report" J.O. Izatt, B.M. Gallaway; December, 1978; 80 pp. (Also published as FHWA-TS-80-214)
- 536-3 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas - Progress Report No. 2" B.M. Gallaway, D.E. Newcomb; March, 1979; 11 pp.
- 536-4 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas" C. Jacobs, D. Newcomb, D. Saylak, B.M. Gallaway; September, 1979; 23 pp.
- 536-5 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas - Progress Report No. 4" C. Jacobs, D. Saylak, B.M. Gallaway; December, 1980; 19 pp.
- 536-6 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas - Progress Report No. 5" F.C. Benson, D. Saylak, B.M. Gallaway; February, 1982; 22 pp.

- 536-7 "Sulphur Extended Asphalt Field Trials - MH 153, Brazos County, Texas - Final Report", F.C. Benson, D. Saylak, G.M. Galloway; May, 1982, 43 pp. (Note: this study was extended. Another final report will be written).
- 536-8 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas" F.C. Benson, B.M. Galloway, D. Saylak; May, 1983; 18 pp.
- 536-9 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas" F.C. Benson, B.M. Galloway, D. Saylak; September, 1983; 29 pp.
- 536-10 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas" F.C. Benson, B.M. Galloway, D. Saylak; January, 1984; 16 pp.
- 536-11 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas", F.C. Benson, B.M. Galloway, D. Saylak; August, 1984; 14 pp.
- 536-12 "Sulphur Extended Asphalt Field Trials on MH 153, Brazos County, Texas" B.M. Galloway; April, 1985; 23 pp.
- 536-13F "Sulphur Extended Asphalt Field Trials, MH 153, Brazos County, Texas" B.M. Galloway; June, 1985; 48 pp.

FCIP

1-18-78-537, (DOT-FH-11-8608 T.O. #17)

"FIELD EVALUATION OF PAVEMENT MARKING MATERIALS"

- 537-1F "Field Evaluation of Pavement Marking Materials" J.G. Raska; October, 1980; 36 pp.

(Demo.)

1-5-79-538, (DTFH-71-80-C-00020)

"INTERNALLY SEALED CONCRETE BRIDGE DECK"

- 538-1 "Internally Sealed Concrete at IH-20 and Texas Park Road 41" H.D. Butler, T.S. Patty, F.A. Schindler, Jr.; August, 1981; 59 pp. (Also published as FHWA-DP-49-2)

- 538-2F "Evaluation of Internally Sealed Concrete Deck-Monahans, Texas" H.D. Butler; January, 1984; 15 pp.

1-15D-79-539, (DOT-FH-11-9459)

"SAN ANTONIO HIGHWAY ADVISORY RADIO STUDY" (Study Supervisor: M. Dietert) (Report available from Texas Transportation Institute, Texas A&M University, College Station, Texas, 77843-3135) (TAMRF Subcontract #L800170)

- (FCP)
1-15D-79-540, (DOT-FH-11-8505)
"HUMAN FACTORS REQUIREMENTS FOR REAL-TIME INFORMATION DISPLAYS"
(Study Supervisor: M. Dietert)
- (FCIP)
1-8-81-541, (DTFH61-81-C-00040)
"ESTIMATES OF AIR POLLUTION NEAR SIMPLE SIGNALIZED INTERSECTIONS"
- 541-1F "Air Pollution Near Simple Signalized Intersections" A.D. Messina, J.A. Bullin, J.P. Nelli, R.D. Moe; December, 1981; 138 pp. (FHWA/RD-83/009)
- (FCIP)
1-3D-80-542, (DOT-FH-11-8608 #18)
"POLYMER CONCRETE OVERLAYS" (Study Supervisor: Ralph Banks)
- 542-1F "Polymer Concrete Overlays" R. K. Banks, D. L. O'Connor, H. D. Butler, D. Hustace, F. S. Craig; January, 1982
- (Demo.)
1-2D-80-543, (DTFH-71-80-55-TX-02)
"PLACEMENT AND EVALUATION OF A SEAL COAT USING EMULSIFIED ASPHALT"
(Study Supervisor: B. Davis)
- 543-1 "Placement and Evaluation of a Seal Coat Using Emulsified Asphalt - Initial Report" F.E. Atnip, J.P. Underwood; October, 1980; 19 pp. (Also published as FHWA-DP-55-2)
- 543-2 "Placement and Evaluation of a Seal Coat Using Emulsified - Interim Report No. 1" F. Atnip; September, 1981; 6 pp.
- 543-3 "Placement and Evaluation of a Seal Coat Using Emulsified Asphalt - Interim Report No. 2" F.E. Atnip; July, 1982; 2 pp.
- 543-5F "Placement and Evaluation of a Seal Coat Using Emulsified Asphalt - Final Report" F.E. Atnip; September, 1983; 2 pp.
- (FCIP)
1-15D-80-544, (DOT-FH-11-8608 #19)
"AN EVALUATION OF SULPHUR AS A BINDER MATERIAL" (Study Supervisor: R.H. Magers)
- 544-1 "An Evaluation of Sulphlex as a Binder Material - Design and Construction Report" R.L. Tyler; April, 1982; 107 pp.
- (Demo.)
1-3D-81-545, (DTFH-71-81-52-TX-04)
"USE OF WIND ENERGY CONVERSION IN A HIGHWAY FIELD OFFICE" (Study Supervisor: K.D. Hankins)

- 545-1 "Installation of a Small Wind-Energy Conversion System at the Wichita Falls District Office" K.D. Hankins, F.S. Craig; November, 1982; 20 pp.
- 545-2 "Use of Wind Energy Conversion in a Highway Field Office" K.D. Hankins; February, 1983; 99 pp.
- 545-3F "Installation of a SWECS at the Wichita Falls District Office" K.D. Hankins; May, 1984; 26 pp.

(Demo.)

- 1-6D-80-546, (DTFH-71-80-C-0032)
"PLACEMENT AND EVALUATION OF A SULFUR-EXTENDED-ASPHALT PAVEMENT"
(Study Supervisor: M. Huffman)

- 546-1F "Placement and Evaluations of a Sulphur-Extended-Asphalt Pavement" K.M. Jones; November, 1984; 175 pp.

(Demo.)

- 1-11D-80-547, (DTFH-71-80-54-TX-01)
"USE OF SULFUR EXTENDED ASPHALT WITH AN OPEN GRADED FRICTION COURSE"
(Study Supervisors: K. D. Hankins, B. M. Gallaway, W. E. Rudd)

- 547-1 "Field Trials of Sulphur-Extended-Asphalt Binder in Open Graded Friction Course - Loop 495, Nacogdoches, Texas - Construction Details" F. C. Benson, B. M. Gallaway; January, 1981; 55 pp. (Also published as FHWA-DP-54-1)
- 547-2 "Field Trials of Sulphur-Extended-Asphalt in Open-Graded Friction Course - Loop 495, Nacogdoches, Texas - Progress Report No. 1" F. C. Benson, B. M. Gallaway; March, 1982; 12 pp.
- 547-3 "Field Trials of Sulphur-Extended Asphalt in Open-Graded Friction Course - Loop 495, Nacogdoches, Texas - Progress Report No. 2" F. C. Benson, B. M. Gallaway; March, 1983; 13 pp.
- 547-4F "Field Trials of Sulphur-Extended-Asphalt Binder in Open-Graded Friction Course - Loop 495, Nacogdoches, Texas - Final Report" F. C. Benson, B. M. Gallaway; March, 1984; 102 pp.

- 1-11D-85-548, (DTFH-71-84-507-TX-20) (Cancelled)
"RETROFIT GUARDRAIL/BRIDGE RAIL TRANSITION DESIGN" (Study Supervisor: D. Hustace)

(Demo.)

- 1-15D-82-549, (DTFH-71-81-37-TX-05)
"FIELD DEMONSTRATION AND EVALUATION OF A HOT RUBBER-ASPHALT SEAL COAT" (Study Supervisor: R. H. Magers)

- 549-1F "An Evaluation of Hot Rubber-Asphalt Seal Coat" A. B. Hubbard, K. D. Hankins; December, 1985; 12 pp. (Unpublished)

(FCIP)

1-15D-82-550, (DOT-FH-11-8608, T.O. #19; Amend. #1)
"AN EVALUATION OF A SULPHLEX SEAL COAT" (Study Supervisor: R. H. Magers)

550-1 "An Evaluation of a Sulphex Seal Coat" R. L. Tyler; March, 1983; 63 pp.

1-3D-82-551, (DOT-FH-11-8608)

"USE OF RUBBER-ASPHALT WITH AN OPEN-GRADED FRICTION COURSE - WICHITA COUNTY, TEXAS" (Study Supervisor: F. Craig) (This study is being performed in conjunction with Study 1-10-77-187)

(FCIP)

1-10-84-552, (DOT-FH-11-8608, Task Order 23)
"FIELD TRIALS OF THE ASPHALT CONCRETE DENSITY AND TEMPERATURE MONITORING DEVICE" (DMD) (Study Supervisor: K. D. Hankins)

552-1F "Field Trial of Continuous Asphaltic Concrete Density Monitoring Devices in Texas" W. S. Wallis; June, 1984; 34 pp.

(Demo.) (DTFH71-83-34-TX-07)

1-10-84-554 "CATHODIC BRIDGE DECK PROTECTION (ABILENE)" (Study Supervisor: D. Hustace)

(Demo.) (DTFH71-83-17-TX-08) (Cancelled)

1-3D-84-555 "PRESTRESSED CONCRETE PAVEMENT I-35, COOKE COUNTY (GAINESVILLE)" (Study Supervisor: J. Brown)

(Demo.) (DTFH71-83-17-TX-09)

1-9D-84-556 "PRESTRESSED CONCRETE PAVEMENT I-35, MCLENNAN COUNTY (WACO)" (Study Supervisor: S. Golding)

555/556-1 "Design of the Texas Prestressed Concrete Pavement Overlays in Cooke & McLennan Counties and Construction of the McLennan County Project" A. M. Diaz, B. F. McCullough, N. H. Burns; February, 1986; 226 pp.

Interim #1 "Prestressed Concrete Pavement I-35 McLennan County (Waco)" S. Golding; September, 1987; 4 pp.

3-10-84-557 "TEXAS WEIGH-IN-MOTION DEMONSTRATION PROJECT (RTAP)" (Study Supervisor: C. E. Lee)

557-1F "Demonstration of Weigh-In-Motion Systems For Data Collection and Enforcement" C. E. Lee, B. Izadmehr, R. B. Machemehl; December, 1985; 196 pp.

(Demo.) (DTFH71-83-3602-TX-12)

1-10-84-559 "PRECAST MODULAR (FULL DEPTH) CONCRETE BRIDGE DECK PANELS" (Study Supervisor: A. B. Hubbard)

- (Exp.) (DTFH71-83-3504-TX-11)
 1-10-84-560 "PROTECTIVE COATINGS FOR STRUCTURAL STEEL" (Study Supervisor: A. B. Hubbard)
- 560-1 "Protective Coatings for Structural Steel" A. B. Hubbard, J. G. Raska; April, 1985; 83 pp. (Unpublished)
- 560-2 "Protective Coatings for Structural Steel" A. B. Hubbard; December, 1985
- (Exp.) (DTFH71-83-3952-TX-15)
 1-10-84-561 "THIN BONDED CONCRETE OVERLAYS" (Study Supervisor: S. Golding)
- 561-1 "Experimental Thin-Bonded Overlay Pavement in Houston, Texas" S. Golding; November, 1985; 29 pp.
- 561-2 "Experimental Thin-Bonded Concrete Overlay Pavement in Houston, Texas" S. Golding; March, 1986; 35 pp.
- 561-3 "Experimental Thin-Bonded Concrete Overlay Pavement in Houston, Texas" S. Golding; February, 1987; 28 pp. (Unpublished)
- (Exp.) (DTFH71-83-3605-TX-10)
 1-10-84-562 "BRIDGE DECK PROTECTION SYSTEM" (Study Supervisor: D. Hustace)
- (Exp.) (DTFH71-83-3503-TX-13)
 1-10-84-564 "ASPHALT ADDITIVES" (Study Supervisor: A. B. Hubbard)
- (FCIP) (DOT-FH-11-8608, T.O. #24)
 1-10-84-565 "SLOPE MAINTENANCE AND SLIDE RESTORATION" (Study Supervisor: A. B. Hubbard)
- 565-1F "Slope Maintenance and Slide Restoration" G. Klinedinst, A. Munoz, C. W. Niessner; FHWA published - FHWA-TS-85-231; April, 1986; 65 pp.
- (FCIP) (DOT-FH-11-8608 #25) (Cancelled)
 1-10-84-567 "OVERLAY DESIGN OF FLEXIBLE AND RIGID PAVEMENTS" (Study Supervisor: J. Daleiden)
- (FCIP) (DOT-FH-11-8608, T.O. #27)
 1-10-84-568 "MAINTENANCE OF HIGHWAY SAFETY FEATURES" (Study Supervisor: R. L. Tyler)
- (Demo.) (DTFH 71-86-72-TX-22)
 8-10-87-569 "PROFILOGRAPH CORRELATION WITH PSI" (Study Supervisor: C. Goss)
- 569-1F "Profilograph Correlation Study with Present Serviceability Index" R.S. Walker, H.T. Lin; June, 1987; 58 p.

(Demo.) (DTFH 71-86-54-TX-21)

1-10-86-570 "CORING OF SULFUR EXTENDED ASPHALT IN DISTRICTS 6, 11, & 17"
(Study Supervisor: B. Hubbard)

(RTAP)

1-10-85-575 "TECHNOLOGY TRANSFER TO LOCAL TRANSPORTATION AGENCIES" (Study
Supervisor: C. King)

575-1 "Determining the Need for a Spanish Language Transportation
Technology Transfer Program" D. Rozendal, A. Targuin, W.
Echelberger; November, 1986 (Unpublished)

(Demo.) (DTFH71-88-923-TX-23)

1-10-88-578 "CATHODIC PROTECTION OF QUEEN ISABELLA PR100" (Study Supervisor: S.
Lambert)

(Demo.) (DTFH 71-88-72-TX-24)

8-10-88-579 "AUTOMATED PAVEMENT DATA COLLECTION EQUIPMENT" (Study Supervisor:
J.P. Underwood)

PART III

Listing of Experimental Projects (EP)

- 601-1 "Rock Asphalt Sprinkle Treatment" R.H. Magers, R.M. Harle; June, 1975; 10 pp.
- 602-1 "Plant Mix Seal" D.A. Bass, J.W. Norwood; July, 1975; 31 pp.
- 602-2 "Plant Mix Seal in District 7" W.P. Harrington; August, 1976; 24 pp.
- 602-3 "Open Graded Asphalt Friction Course" C.H. Little; December, 1976; 38 pp.
- 602-4 "Plant Mix Seal in District 3" L.L. Jett; January, 1977; 8 pp.
- 603-1 "Lightweight Aggregate Sprinkle Treatment" J.T. Johnston; July, 1975; 4 pp.
- 603-2 "Test Sections of Type 'C' ACP with Sprinkle Treatment Surface" V.G. Chetty; September, 1975; 7 pp.
- 604-1 "Recycling of Asphalt Concrete Pavement" B.R. Lindley, N.A. Billingsley, Jr.; July, 1975; 9 pp.
- 604-2 "The Use of Wirtgen In-Place Recycling Equipment in Lufkin" K. W. Fults; March, 1985; 18 pp.
- 605-1 "Precoating Aggregates for Sprinkle Treatment" G.L. Gallatin; July, 1975; 11 pp.
- 605-2 "Precoated Lightweight Aggregate" C.H. Reasonover; January, 1982; 23 pp.
- 606-1 "Fibrous Reinforced Concrete Overlay" July, 1975; 1 pp.
- 606-2 "A Survey of Reflective Crack Retardation by Fabric Materials in Texas" August, 1977; 5 pp.
- 606-3 "Comparison of Reflective Crack Retardation by Fabric Material (Petromat), Open-Graded Friction Courses and Conventional Hot Mix" M.D. Huffman; February, 1978; 11 pp.
- 606-4 "Evaluation of Surface-Sealing Systems Utilizing Seal Coats and Poly-Fab Underseal" D.D. Day; December, 1982; 19 pp.
- 606-4, Supplement No. 1
"Evaluation of Surface-Sealing Systems Utilizing Seal Coats and Poly-Fab Underseal - First Annual Condition Survey Report" D.D. Day; November, 1978; 13 pp.

- 606-4, Supplement No. 2
 "Evaluation of Surface-Sealing Systems Utilizing Seal Coats and Polyfab Underseal - Second Annual Condition Survey Report" D.D. Day; November, 1979; 8 pp.
- 606-4, Supplement No. 3
 "Evaluation of Surface-Sealing Systems Utilizing Seal Coats and Polyfab Underseal - Third Annual Condition Survey Report; D.D. Day; November, 1980; 8 pp.
- 606-4, Supplement No. 4
 "Evaluation of Surface-Sealing Systems Utilizing Seal Coats and Polyfab Underseal - Fourth Annual Condition Survey Report" D.D. Day; August, 1981; 5 pp.
- 606-4, Supplement No. 5
 "Evaluation of Surface-Sealing Systems Utilizing Seal Coats and Poly-Fab Underseal" D. D. Day; December, 1982; 27 pp.
- 606-4F "Evaluation of Surface-Sealing Systems Utilizing Sealcoats and Poly-Fab Underseal" D.D. Day; December, 1982; 36 pp.
- 606-5 "Fabric Underseal and Asphaltic Concrete Pavement Overlay" Anon; February, 1980; 25 pp.
- 606-6 "Application of a Hot Asphalt Rubber Underseal over ACP Prior to Overlay" Anon; January, 1980; 3 pp.
- 606-7 "Application of a Fabric Underseal in Dallas County, Texas" T.L. Kelley; June, 1982; 6 pp.
- 606-8 "Evaluation of Crushed Stone Bituminous Concrete Base" J.C. Holzwarth; June, 1982; 18 pp.
- 606-9 "Poly-Fabric Underseals as Reflective Crack Retardants" J.D. Clark; April, 1984; 17 pp.
- 606-10 "Evaluation of Poly-Fab Underseal Protection on IH-40, Carson County, Texas" W.D. Clark; August, 1980; 13 pp.
- 606-11 "Evaluation of Poly-Fab Underseal Effectiveness in Retarding Reflective Cracking on IH-40, Oldham County, Texas" W.D. Clark; December, 1984; 13 pp.
- 606-12 "An Evaluation of the Use of a Surface-Sealing System of Hot Asphalt-Rubber to Retard Reflective Cracking" J. B. Chappell; December, 1983; 13 pp.
- 606-13 "Use of Pavement Interlayers to Retard Reflective Cracking of Soil Cement Bases" J. L. Beaird; October, 1984; 38 pp.
- 608-1 "Fiberglass Placement" R.S. Neal; September, 1975; 7 pp.
- 608-2 "Underseals to Retard Reflective Cracking of Asphaltic Pavements: Short Term Evaluation of Roadglas and Roadbond" D. P. Peeples, Jr.; October, 1984; 13 pp.

- 609-1 "Test Using Expansive Cement in Cement Base to Eliminate or Reduce Cracking" R. Rodriquez; August, 1975; 19 pp.
- 610-1 "Pavement Edge Improvement" W.N. Dudley; October, 1975; 4 pp.
- 611-1 "Sandstone Aggregate Sprinkle Treatment" D.J. Frye; September, 1975; 4 pp.
- 611-2 "Sandstone Sprinkle Treatment in Wilson County, Texas" R.H. Magers; May, 1978; 20 pp.
- 612-1 "Lightweight Aggregate Sprinkle Treatment" D.J. Frye; September, 1975; 5 pp.
- 612-2 "Sprinkle Treatment in Wharton County, Texas" B.R. Neeley; October, 1978; 9 pp.
- 613-1 "Cold Recycling of Asphalt Concrete Pavement" B.R. Lindley; October, 1975; 26 pp.
- 613-2 "Farm-to-Market Highway Rehabilitation by Recycling Methods" B.R. Lindley; June, 1980; 33 pp.
- 613-3 "Some Experiences in Reusing Asphalt Concrete Tailings Created by Cold Milling" R.H. Magers; January, 1982; 6 pp.
- 614-1 "Polymer Concrete Pavement Repair" D.W. Vinson; December, 1975; 6 pp.
- 614-2 "Polymer Concrete Deck Repair" D.R. Mosier; April, 1976; 8 pp.
- 614-3 "Polymer Impregnated Concrete Bridge Deck - Big Spring, Texas" H.D. Butler; January, 1983; 43 pp.
- 614-4 "High Density Concrete and Polymer Impregnated Concrete Bridge" H.D. Butler, January, 1986; 48 pp.
- 615-1 "Test Sections of Various Asphaltic Mixtures and Sprinkle Treatments" D.J. Frye; November, 1975; 12 pp.
- 615-2 "Test Sections of Various Asphaltic Mixtures and Sprinkle Treatments" April, 1977; 2 pp.
- 615-3 "Test Sections of Various Asphaltic Mixtures and Sprinkle Treatments" R.H. Magers; May, 1981; 6 pp.
- 616-1 "Providing Smooth Railroad Grade Crossings Using Asphalt Concrete Pavement" R. Fitzpatrick, D.J. Brunson; January, 1976; 4 pp.
- 617-1 "Black Bases Using Emulsions" W.N. Dudley; April, 1976; 11 pp.
- 618-1 "Increased Skid Resistance Through the Utilization of a Heater-Planer" J.W. Strong; June, 1976; 6 pp.

- 618-2 "Experimental Pavement Surface Improvement Using Heater-Planer Sprinkle Treatment with Sandstone Aggregate" D.J. Frye; July, 1976; 3 pp.
- 618-3 "Heater-Scarifier Recycling of Limestone Rock Asphalt Pavement and Sandstone Sprinkle Treatment" D.J. Frye; August, 1976; 4 pp.
- 619-1 "Experimental Pavement Overlays" D.J. Frye; May, 1976; 17 pp.
- 619-2 "Concrete Overlay on the Colorado River Bridge, District 7" W.P. Harrington; December, 1977; 26 pp.
- 620-1 "Grates for Existing Culverts" B.R. Lindley; June, 1976; 17 pp.
- 621-1 "Cement Stackdust Treatment for Materials in Place" W.N. Dudley; July, 1976; 20 pp.
- 622-1 "Amorphous Polypropylene as an Asphalt Additive" B.R. Lindley; August, 1976; 20 pp.
- 623-1 "Experimental Transverse Tine Finish on Continuously Reinforced Concrete Pavement" D.J. Frye; November, 1976; 5 pp.
- 624-1 "An Experimental Seal of Porous Pavement on IH-35S Using NOCOR 690" D.J. Frey; June, 1977; 5 pp.
- 624-1, Supplement No. 1
"An Experimental Seal of Porous Pavement on IH 35 South Using NOCOR 690 - A Follow-Up Report" W.C. Garbade, R.H. Magers; July, 1979; 4 pp.
- 625-1 "Evaluation of Pressure Grouting Existing Concrete Pavement" B. Bayless; December, 1979, 11 pp.
- 626-1 "Evaluation of Shrinkage Compensating Cement in a Bridge Slab" H.D. Butler; September, 1978; 21 pp.
- 627-1 "Test and Evaluation of Rural Mailbox Supports" H.E. Ross Jr., J.W. Miller, D.L. Sicking; October, 1980; 46 pp.
- 628-1 "Field Evaluation of Bottom Ash in Hot Mix Asphaltic Concrete"; 29 pp.
- 628-2 "Cement Fly-Ash Stabilization - F.M. 3188 Extension - Trinity County, Texas" K.W. Fults; November, 1981; 27 pp.
- 629-1 "The Use of a Stabilizing Additive in Hot Mix Asphalt Concrete" W.D. Clark; September, 1982; 13 pp.
- 629-2 "The Effect of a Polymer Additive in HMAC" Nick Turnham; March, 1986; 25 pp.
- 630-1 "Sulphur-Extended Asphalt (SEA) Using Solid (Pelletized) Sulphurs by District 11 Staff"; June, 1983

- 631-1 "Evaluation of Asphalt-Latex Rubber Blends" D.G. Hazlett; June, 1983; 15 pp.
- 632-1 "Thin Bonded Concrete Overlays" D.B. Muchaw; October, 1983; 13 pp.
- 633-1 "Thick Concrete Pavement Evaluation" S.R. Wimberly; March, 1985;
- 634-1 "Investigation of Cost-Effective Management of Embankment Vegetation" S. Golding; September, 1985

PART IV

LISTING OF OTHER STATE-FUNDED STUDIES

- 3-20D-81-901 "DESIGN ANALYSIS FOR EMBANKMENT OF HIGHWAY 87 IN JEFFERSON AND ORANGE COUNTIES" -- Original title, 1980-81 and 1981-82 "Soil Testing and Analyses Associated with the Design and Construction of Embankment for S.H. 87 in Jefferson and Orange Counties" -- New title, 1983-84 to present. (Study Supervisor: Dr. R. E. Olson) Study began in 1980-81.
- 2-18-83-902 "ROADSIDE VEGETATION MANAGEMENT RESEARCH PROGRAM" (Study Supervisor: W. McCully)
- 902A-1 "Potential For Using Mycorrhizal Plants to Revegetate Texas Highway Right-of-Ways" F. T. Davies, Jr., W. G. McCully; April, 1984; 11 pp.
- 902-2 "Control of Wild Oat and Jointed Goatgrass on Texas Roadsides" W. G. McCully, D. W. Dunlap, A. F. Wiese; January, 1986; 22 pp.
- 902-3 "Enhancement of Texas Highways Vegetation With Mycorrhizal Fungi" F. T. Davies, Jr., W. G. McCully; December, 1985; 44 pp.
- 902-4 "Propagation of Wildflowers for Roadside Use" W. G. McCully, E. E. McWilliams, M. J. Kaspar, S. Grigg; April, 1986
- 902-5 "Propagation of Some Native Landscaping Plants" W. G. McCully, E. L. McWilliams, F. T. Davies; April, 1986
- 2-18-81-903 "EVALUATION OF TEMPORARY SEQUENTIAL SIGNING SYSTEM TO BE INSTALLED IN DALLAS, TEXAS" (Study Supervisor: R. McNees)
- 2-12D-86-904 "TRANSPORTATION COMMUNICATIONS TEAM" (Study Supervisor: G. Ritch)
- 2-15D-82-905 "FACILITIES FOR HIGH OCCUPANCY VEHICLES IN SAN ANTONIO" (Study Supervisors: D. Christiansen, L.G. Nungesser)
- 2-26D-82-906 "SOUTH WAYSIDE DRIVE NOISE IMPACT STUDIES" (Study Supervisor: C.H. Gerhold)
- 2-21D-82-907 "U.S. 83 EXPRESSWAY ACCESS STUDY" (Study Supervisor: W.R. Stockton)
- 2-18-82-908 "EVALUATION OF CURRENT DIAMOND CONTROLLERS" (Study Supervisor: C.J. Messer)
- 3-26D-83-909 "EVALUATION OF REHABILITATION TECHNIQUES ON IH-10 and 610 IN HARRIS COUNTY" (Study Supervisors: B. F. McCullough, A. H. Meyer)

- 2-15D-83-911 "BRIDGE RAIL TO CONTAIN AND REDIRECT 80,000 LB. TANK TRUCKS"
(Study Supervisors: T. J. Hirsch, W. L. Fairbanks)
- 911-1F "Bridge Rail to Contain and Redirect 80,000 lb. Tank Trucks"
T. J. Hirsch, W. L. Fairbanks; January, 1984; 36 pp.
- 2-15D-83-912 "EVALUATION AND TEST OF PRECAST CONCRETE BRIDGE RAIL" (Study
Supervisors: H. L. Jones, T. J. Hirsch)
- 912-1F "Evaluation and Test of Precast Concrete Bridge Rail" H. L.
Jones, T. J. Hirsch; March, 1984; 32 pp. (Unpublished)
- 3-15D-83-915 "ALTERNATE CONNECTION DESIGN FOR SPINE-WING TYPE BOX GIRDER
BRIDGE" (Study Supervisors: J. E. Breen, J. O. Jirsa)
- 2-26D-84-916 "EXPERIMENTAL SEA OVERLAY OF IH 610 - HOUSTON, TEXAS" (Study
Supervisors: D. Saylak, F. C. Benson)
- 916-1F "Experimental SEA Overlay of IH 610 - Houston, Texas" D. Saylak,
F. C. Benson; June, 1985; 100 pp. (Unpublished)
- 2-10-84-917 "DIAGNOSTIC TESTING OF TELEMETRIC TRAFFIC COUNTERS" (Study
Supervisor: W. Cunagin)
- 2-18-85-918 "PERMIT FEES FOR OVERWEIGHT VEHICLES" (Study Supervisor: R.L.
Lytton)
- 3-18-85-919 "PERMIT FEES AND FINES FOR OVERWEIGHT VEHICLES" (Study Supervisor:
C. M. Walton)
- 3-12D-84-920 "EVALUATION OF THIN-BONDED CONCRETE OVERLAY ON IH 610 IN HOUSTON"
(Study Supervisor: B. F. McCullough)
- 3-4D-85-921 "DETERMINATION OF LOAD-DEFLECTION BEHAVIOR OF GIRDERS IN BRIDGE
NEAR HAPPY, TEXAS" (Study Supervisor: J. E. Breen)
- 3-8D-86-923 "BRIDGE DECK SEALING WITH METHACRYLATE MONOMER" (Study Supervisor:
D. Fowler)
- 3-17D-87-924 "METHACRYLATE MONOMER OVERLAY OF CAMERON BRIDGE" (Study Supervisor:
D. W. Fowler)
- 3-8-86-926 "INITIAL EVALUATION OF TEXAS BASED AASHTO DESIGN GUIDE PARAMETERS"
(Study Supervisor: W.R. Hudson)
- 3-8-86-927 "DEVELOPMENT OF WORKSHOPS FOR EARTHSLOPE DESIGN AND MAINTENANCE"
(Study Supervisor: S.G. Wright)
- 2/3-10-87-928
"ORIGIN DESTINATION STUDY CONCEPTS: AUSTIN/SAN ANTONIO" (See Study
1186)

- 2-18D-87-929 "NORTH CENTRAL EXPRESSWAY (US 75) PROJECT SUPPORT" (Study Supervisor: C. Walters)
- 2-18-88-930 "DISTRICT LEVEL PAVEMENT MANAGEMENT SYSTEM" (Study Supervisor: T. Scullion)
- 3-15D-87-932 "MONITORING THE PERFORMANCE OF A BEBO ARCH CULVERT" (Study Supervisor: R.W. Furlong)
- 2-2D-88-933 "HIGHWAY PLANNING AND OPERATIONS FOR DISTRICT 2" (Study Supervisor: C. Walters)
- 2-18D-88-934 "HIGHWAY PLANNING AND OPERATIONS FOR DISTRICT 18" (Study Supervisor: C. Walters)
- 2-12D-88-935 "PLANNING, DESIGN AND OPERATION OF TRANSPORTATION FACILITIES IN HOUSTON" (Study Supervisors: W. McCasland, J. Mounce)
- 2-15D-88-936 "ASSIST DISTRICT 15 IN DEVELOPMENT OF SOFTWARE FOR THE CENTRAL CONTROL COMPUTER FOR THE SC&C SYSTEM" (Study Supervisor: C. Blumentritt)
- 2-2D-88-937 "ASSIST DISTRICT 2 IN DEVELOPMENT OF SOFTWARE FOR THE CENTRAL CONTROL COMPUTER FOR THE SC&C SYSTEM" (Study Supervisor: C. Blumentritt)
- 2-18-88-938 "ASSIST SDHPT IN DEVELOPMENT OF SOFTWARE FOR THE CENTRAL CONTROL COMPUTER FOR THE SC&C SYSTEM" (Study Supervisor: C. Blumentritt)
- 3-13D-87-939 "TEXAS FRIENDLY MODEL WORKSHOP" (Study Supervisor: R.M. Machemehl)
- 2-8-88-942 "DEVELOP DESIGN POLICIES, PROCEDURES, AND GUIDELINES UNDER THE GUIDANCE OF SDHPT ENGINEERS, IN RESPONSE TO THEIR NEEDS" (Study Supervisor: D. Ivey)
- 2-18-87-943 "THE EFFECTS OF PROTOTYPE RADAR TRANSMITTING DEVICES AT WORK" (Study Supervisor: V. Pezoldt)
- 2-18-88-944 "HIGHWAY LANDSCAPE PROGRAM" (Study Supervisor: H. Landphair)
- 2-18-88-945 "TRANSPORTATION COMMUNICATIONS TEAM" (Study Supervisor: G.P. Ritch)
- 2-10-88-946 "SDHPT-NCTCOG MODEL CONSOLIDATION" (Study Supervisor: G. Dresser)
- 2-10-88-947 "TEXAS TRAVEL DEMAND PACKAGE" (Study Supervisor: G. Dresser)
- 2-18D-88-948 "TRANSPORTATION PLANNING FOR THE REGIONAL PLANNING OFFICE" (Study Supervisor: G. Dresser)
- 2-9-88-949 "HIGH LEVEL ILLUMINATION LUMINARIES" (Study Supervisor: R. Zimmer)

- 2-18-88-950 "STANDARDIZED INSPECTION PROCEDURES FOR HIGHWAY LANDSCAPE BEAUTIFICATION" (Study Supervisor: E.R. Hoag)
- 2-18-87-951 "CONSTRUCTION LANDSCAPE PROGRAM, HOUSTON AND AMARILLO" (Study Supervisor: H. Landphair)
- 2-6-88-952 "DBE CAPACITY IN TEXAS HIGHWAY CONSTRUCTION INDUSTRY" (Study Supervisor: D. Burke)
- 2-10-81-965 "THE INTERCITY BUS INDUSTRY IN TEXAS AND THE U.S." (Study Supervisors: T. Urbanik, P. Bass, K. R. Marshall)
- 965-1F "The Intercity Bus Industry in Texas and the U.S." T. Urbanik, P. Bass, K. R. Marshall; August 1981; 161 pp.

PART V

Listing of UMTA Technical Studies

3-10-76-1051

"EVALUATION OF VARIOUS APPROACHES TO PROVIDING PUBLIC TRANSPORTATION SERVICE IN AREAS LESS THAN 200,000 POPULATION"

Interim "A Literature Review of Mass Transit Usage and City Characteristics" R. Ellison; November, 1976; 21 pp.

1051-1F "Evaluation of Various Approaches to Providing Public Transportation Service in Areas Less than 200,000 Population" A. Black, C.M. Walton, R. Ellison, G. Derr; August, 1980; 205 pp.

2-10-76-1052

"MARKETING PUBLIC AND MASS TRANSPORTATION IN TEXAS"

1052-1 "Identification of Market Segments: An Analysis of Transit Needs and Service Requirements" N.J. Hatfield, P.K. Guseman; June, 1977; 117 pp.

1052-2 "Critical Factors Influencing the Demand for Transit" P.K. Guseman, N.J. Hatfield, J. Hall; June, 1977; 76 pp.

1052-3 "Promoting Transit: A Marketing Handbook" N.J. Hatfield, S.I. Bovey, P.K. Guseman; June, 1977; 39 pp.

1052-4 "Basic Market Research Techniques for Transit Systems" N.J. Hatfield, P.K. Guseman; June, 1978; 73 pp.

1052-5 "Evaluation of Transit Service Improvements: Measures of System Effectiveness" P.K. Guseman, K.N. Womack; September, 1978; 89 pp.

3-10-76-1053

"AN ANALYSIS OF METHODS TO MORE EFFECTIVELY UTILIZE THE TAXI INDUSTRY IN IMPROVING PUBLIC TRANSPORTATION IN TEXAS"

1053-1F "Social Service Agency Transportation Services: Current Operations and the Potential for the Increased Involvement of the Taxi Industry" W.L. Cox, S. Rosenbloom; August, 1977; 86 pp.

7-10-76-1054

"AN EVALUATION OF THE IMPORTANCE OF TRANSIT SERVICE TO MINORITY GROUPS IN TEXAS CITIES"

1054-1F "An Evaluation of the Importance of Tourist Service to Minority Groups in Texas Cities" N.W. Lede; March, 1978; 145 pp.

(State Funded)

7-10-77-1055

"AN INVESTIGATION AND EVALUATION OF UMTA SECTION 16B (2) APPLICATION FORM"

1055-1F "An Evaluation of UMTA 16B (2) Applications for Transportation Services for Elderly and Handicapped Persons" N.W. Lede; August, 1977; 112 pp.

2-10-78-1056

"TRANSPORTATION OF THE ELDERLY AND HANDICAPPED"

1056-1 "Survey of Vehicles and Equipment for Elderly and Handicapped Transportation" T. Urbanik II, W. Kelley, J.A. Soegaard, A.V. Fitzgerald; September, 1978; 62 pp.

1056-2F "Transportation of the Elderly and Handicapped in Texas: A Case Study" T. Urbanik II, J.A. Soegaard; September, 1979; 42 pp.

2-10-78-1057

"FARE BOX AND PUBLIC REVENUE: HOW TO FINANCE PUBLIC TRANSPORTATION"

1057-1F "Fare Box and Public Revenue: How to Finance Public Transportation" R.S. Billingsley, P.K. Guseman, W.F. McFarland, February, 1980; 78 pp.

3-10-78-1058

"AN EVALUATION OF THE APPLICABILITY OF LIGHT RAIL TRANSIT TO TEXAS CITIES"

1058-1F "An Evaluation of the Applicability of Light Rail Transit to Texas Cities" C.M. Walton, A. Black, K.J. Cervenka, K. Nichols; April, 1980; 354 pp.

2-10-79-1059

"ENERGY AND TEXAS TRANSPORTATION, AN ANALYSIS AND EVALUATION OF ALTERNATIVE FUTURES" (TX-09-8004)

1059-1 "Trends in Texas Transportation Fuel Consumption" T.J. Lomax, D.L. Bullard, D.L. Christiansen; August, 1979; 72 pp.

1059-2 "Energy and Texas Transportation" D.L. Christiansen, July, 1980; 27 pp.

2-10-79-1060

"EFFECTS OF MAINTENANCE REHABILITATION AND OPERATIONS COST ESCALATION ON TRANSIT SYSTEMS" (TX-09-8004)

1060-1 "Costs of Public Transportation in Texas 1973-1977" K.M. Womack, D. Burke; September, 1979; 81 pp.

- 1060-2F "Revenues and Subsidies of Public Transportation in Texas, 1973-1977" K.M. Womack, D. Burke; March, 1981; 51 pp.
- 2-10-79-1061 "THE EFFECT OF TOTAL ACCESSIBILITY ON TRANSIT IN TEXAS" (TX-09-8004)
- 1061-1F "Cost-Effectiveness of Accessible Fixed-Route Buses in Texas" T. Urbanik, J.A. Soegaard; September, 1979; 47 pp.
- (State Funded)
3-10-78-1062 "PUBLIC TRANSPORTATION UNIFORM ACCOUNTING RECORDS AND REPORTING" (This was a workshop; no reports were issued) (Study Supervisor: C.M. Walton)
- (State Funded)
7-26D-79-1063 "OPERATIONAL MODES FOR HUMAN SERVICES TRANSPORTATION"
- 1063-1F "Operational Modes for Human Services Transportation" N.W. Lede; July, 1979; 126 pp. (Unpublished)
- 2-10-81-1064 "PARK-AND-RIDE DEMAND ESTIMATION"
- 1064-1F "Guidelines for Estimating Park-and-Ride Demand" J. Nordstrom, D.L. Christiansen; July, 1981; 81 pp.
- 2-10-80-1065 "EVALUATION OF SELECTED HUMAN SERVICES TRANSPORTATION PROVIDERS" (Study Supervisors: T. Urbanik, S. Bridges)
- 1065-1 "Evaluation of Selected Human Services Transportation Providers in Texas" D.L. Bullard, T. Urbanik; August, 1980; 37 pp.
- 1065-2F "Guidelines for Evaluation of Human Services Transportation Programs", R.L. Peterson, K.R. Marshall, T. Urbanik; August, 1981; 115 pp.
- 2-10-80-1066 "IMPROVED TECHNIQUE FOR IMPACT ANALYSIS OF TRANSIT ALTERNATIVES" (Study Supervisor: J.L. Buffington)
- 1066-1 "Background Data for Developing a Generalized Approach to Evaluating Impacts of Short Range Transit Alternatives" M.K. Chui, J.L. Buffington; November, 1980; 76 pp.
- 1066-2F "A Generalized Approach to Evaluating Impacts of Short Range Transit Alternatives" M.K. Chui, J.L. Buffington; August, 1981; 153 pp.

- 2-10-81-1067
 "LEVEL-OF-SERVICE CONCEPT APPLIED TO PUBLIC TRANSPORTATION" (Study Supervisors: D. Bullard, D. Christiansen)
- 1067-1F "Level-of-Service Concept Applied to Public Transportation" D. Bullard, D.L. Christiansen; August, 1981, 70 pp.
- (State Funded)
- 2-10-81-1068
 "EFFECTS OF USER CHARGES ON TEXAS COASTAL WATERWAYS" (Study Supervisor: P. Cosby)
- 1068-1F "Some Economic Effects of User Charges on Texas' Coastal Waterways" P. Cosby, E. Braswell, D. Burke; October, 1982; 50 pp.
- 2-10-82-1069
 "ANALYSIS OF RURAL TRANSPORTATION IN TEXAS" (Study Supervisor: T. Urbanik)
- 1069-1F "Analysis of Rural Public Transportation in Texas" L.G. Nungesser, J.A. Nordstrom, T. Urbanik; August, 1982; 122 pp.
- 2-10-82-1070
 "EFFECTS OF NEW PUBLIC TRANSPORTATION SYSTEMS IN TEXAS" (Study Supervisor: D.L. Christiansen)
- 1070-1F "Effects of New Public Transportation Systems in Texas" D.L. Bullard, P.L. Conway, D.L. Christiansen; July, 1982; 198 pp.
- 2-10-83-1072
 "PARK-AND-POOL LOTS IN RURAL NONURBANIZED AREAS" (Study Supervisor: R.L. Peterson)
- 1072-1F "Park-and-Pool Lots in Rural Nonurbanized Areas" R.L. Peterson, R. Sato; August, 1983; 281 pp.
- (State Funded)
- 2-10-82-1073
 "FINANCIAL ANALYSIS OF THE TEXAS TRANSIT INDUSTRY" (Study Supervisor: K.N. Womack)
- 1073-1F "Financial Assistance to Texas Transit: Trends and Effects", K.N. Womack, M. VonTress; October, 1983; 63 pp.
- 2-10-83-1074
 "FEASIBILITY OF UTILIZING EXISTING RAILROAD RIGHTS-OF-WAY FOR TRANSIT CORRIDORS IN URBAN AREA" (Study Supervisor: R.L. Peterson)
- 1074-1F "Feasibility of Utilizing Existing Railroad Rights-of-Way for Transit Corridors in Urban Areas" R.L. Peterson, C.J. Porterfield, H.C. Petersen; November, 1983; 363 pp.

- 9-10-83-1075
 "JOINT CENTER FOR URBAN MOBILITY RESEARCH" (Project Manager: Glenda Callaway)
- 1075 "Planning and Finance Urban Mobility in Texas" Rice Center; September, 1983; 175 pp.
- 1075-1F "Mobility Planning in Mid-Size Texas Cities" Rice Center; November, 1984;
- 2-10-84-1076
 "EFFECT OF LABOR DISPUTES ON TRANSIT RIDERSHIP" (Study Supervisor: J. Lamkin)
- 1076-1F "Effect of Labor Disputes on Transit Ridership" J. Lankin, J. Saunders; October, 1984; 79 pp.
- 2-10-84-1077
 "EFFECTIVENESS OF TRANSIT OPERATIONS IN TEXAS CITIES" (Study Supervisor: D.L. Bullard)
- 1077-1F "Effectiveness of Transit Operations in Texas Cities" D.L. Bullard; August, 1984; 255 pp.
- 2-10-84-1078
 "THE ISSUE OF EQUITY IN TEXAS TRANSIT FINANCE" (Study Supervisors: D. Burke, K.N. Womack)
- 1078-1F "Some Considerations of Equity in Financing and Providing Transit Service in Texas" D. Burke, K.N. Womack, J. Saunders; April, 1986; 45 pp.
- (State Funded)
- 9-3-84-1079
 "CONSTRUCTION ESTIMATING"
- 3-10-85-1080
 "DEMAND ESTIMATION FOR RURAL PUBLIC TRANSPORTATION IN TEXAS" (Study Supervisor: H. Mahmassan)
- 1080-1F "Rural Public Transportation Demand: Characteristics and Estimation Methodology" R. J. McIntyre, H. S. Mahmassani, C. M. Walton, R. B. Machemehl; March, 1986; 93 pp.
- 3-10-85-1081
 "METROPOLITAN TRANSIT AUTHORITIES IN TEXAS" (Study Supervisors: D. Burke, C.M. Walton, R.B. Machemehl)
- 1081-1F "The Use of Profiles for Metropolitan Transit Authority Analysis" K.N. Womack, M. Von Tress, J. Fesenmaier; November, 1985; 47 pp.

- 2-10-85-1082
 "TEXAS PUBLIC TRANSPORTATION REFERENCE MANUAL" (Study Supervisor:
 D.L. Bullard)
- 1082-1F "Texas Public Transit Reference Manual" D.L. Bullard, L.G.
 Nungesser; November, 1985; 274 pp.
- 2-10-87-1084
 "EMPLOYER-BASED SUBSIDIZED TRANSIT IN TEXAS" (Study Supervisor:
 D. L. Bullard)
- 1084-1F "Evaluation of Employer Distributed Transit Pass Programs in
 Texas" D.L. Bullard; August, 1987; 194 pp.
- 9-10-85-1085
 "LAND USE AND INNOVATIVE FUNDING IMPACTS IN A PERMANENT BUSWAY
 PARK-AND-RIDE TRANSIT SYSTEM" (Joint Project with 1086)
 (Study Supervisor: B.M. Goodman)
- 2-10-85-1086
 "LAND USE AND INNOVATIVE FUNDING IMPACTS IN A PERMANENT BUSWAY
 PARK-AND-RIDE TRANSIT SYSTEM" (Joint Project with 1085)
 (Study Supervisors: D.L. Christiansen, R.L. Peterson)
- 1086-1 "Land Use and Innovative Funding Impacts in A Permanent
 Busway/Park-and-Ride Transit System: An Annotated Bibliography"
 R.L. Peterson, R.W. Stokes; December, 1985; 147 pp.
- 1086-2 "Land Use and Innovative Funding Impacts in a Permanent
 Busway/Park-and-Ride Transit System: Work Program" R.L.
 Peterson, R.W. Stokes; July, 1985; 77 pp.
- 1086-3 "Survey of Transitway Projects in the United States and Canada"
 R.W. Stokes, R.L.Peterson; November, 1986; 44 pp.
- 1086-4 "Land Use and Innovative Funding Impacts in a Permanent
 Busway/Park-and-Ride Transit System: Preliminary Assessment of
 Land Use Impacts in Houston's North (I-45N) Transitway Corridor"
 R. Peterson, R. Stokes; August, 1986; 49 pp.
- 1086-5 "Land Use and Innovative Funding Impacts in a Permanent
 Busway/Park-and-Ride Transit System: Land Use Data Base for
 Houston's Transitway Corridors and Second Year Summary"
 R. Peterson, R. Stokes; August, 1986; 63 pp.
- 1086-6 "Land Use Impacts of the Houston Transitway System: Third Year
 Update" J.A. Mullins, III, E.J. Washington, R.W. Stokes; August,
 1987; 53 pp.

- 2-10-87-1087
 "AUTOMATED TRANSIT RIDERSHIP DATA COLLECTION" (Study Supervisor:
 Tom Urbanik)
- 2-10-86-1088
 "STRATEGIES FOR BREAK-EVEN EXPRESS TRANSIT OPERATIONS" (Study
 Supervisor: K. Kammerle)
- 1088-1F "Commuter Transit Service: A Financial Performance Analysis"
 K. C. Kaemmerle; September, 1986; 66 pp.
- 2-10-86-1089
 "TECHNICAL SEMINAR FOR SMALL TRANSIT OPERATIONS" (Study Supervisor:
 T. Urbanik)
- 1089-1 "Technical Seminar for Small Transit Systems" T. Urbanik;
 November, 1985; 23 pp. (Unpublished)
- 2-10-86-1090
 Changed to 1092
- 9-10-86-1091
 "METROPOLITAN AREA GROWTH" (Rice Center)
- 2-10-86-1092
 "COMPUTERIZED DISPATCH AIDS FOR SMALL PUBLIC TRANSPORTATION" (Study
 Supervisor: T. Urbanik)
- 1-10-85-1093
 "RTAP WORKSHOP ON TRANSPORTATION RESOURCE MANAGEMENT FOR RURAL
 ELECTED OFFICIALS" (Study Supervisor: D. Chapman)
- 2-10-88-1095
 "PLANNING AND POLICY ISSUES ASSOCIATED WITH DEVELOPING MASS
 TRANSPORTATION IMPROVEMENTS IN URBAN FREEWAY CORRIDORS" (Study
 Supervisor: D. Bullard)
- 2-10-88-2001
 "PUBLIC TRANSPORTATION SERVICE FOR SUBURBAN DEVELOPMENT PATTERNS"
 (Study Supervisors: R. Stokes, E. Washington)
- 2-10-88-2003
 "THE COST AND BENEFITS OF URBAN PUBLIC TRANSIT IN TEXAS" (Study
 Supervisor: T. Lomax)

PART VI

Listing of HPR Research Studies

(State Funded)

2-1-86-1100 "QUALITY APPRAISAL PROCEDURES FOR EFFECTIVE UTILIZATION OF CONSULTANTS IN PRE-CONSTRUCTION HIGHWAY ENGINEERING" (Study Supervisor: A. Garcia-Diaz)

1100-1F "Utilization of Consultants by SDHPT" D. Burke, R. Cavazos, A. Garcia-Diaz, K. Tenah; May, 1987; 104 pp.

(State Funded)

3-1-86-1101 "THE UTILIZATION OF CONSULTANTS BY THE DEPARTMENT" (Study Supervisors: C. E. Lee, W. V. Ward, H. S. Mahmassani)

1101-1F "Utilization of Consultants by the State Department of Highways and Public Transportation" W.V. Ward, C.E. Lee, C.M. Bradley; January, 1987; 60 pp.

(State Funded)

6-1-86-1102 "UTILIZATION OF CONSULTING ENGINEERS FOR HIGHWAY PROJECT DEVELOPMENT" (Study Supervisors: Ernst and Whinney)

1102-1F "Utilization of Consulting Engineers for Highway Project Development" Ernst and Whinney, May, 1987; 49 pp.

2-10-87-1103 "VALIDATION OF SHIRLEY HIGHWAY HOV LANE DEMAND MODEL IN TEXAS" (Study Supervisors: R.W. Stokes, J.D. Benson)

1103-1 "Feasibility of Validating the Shirley Highway HOV Lane Demand Model in Texas" July, 1987; 108 pp.

3-10-87-1104 "DESIGN OF THE TEXAS HIGHWAY COMMODITY FLOW DATA BASE" (Study Supervisors: C. Walton, J. Lamkin)

2-8-87-1105 "COST-EFFECTIVENESS ANALYSIS FOR RANKING NEW INTERCHANGES AND HIGHWAY-RAILROAD GRADE SEPARATION (Study Supervisor: J. Memmott)

2-7-88-1106 "IMPACT OF HIGHWAY CONSTRUCTION EXPENDITURES ON ECONOMIC GROWTH, TOURISM, PLANNING POLICIES AND TRANSPORTATION" (Study Supervisor: D. Burke)

2/3-8-88-1107

"THE ROLE OF THE ARTERIAL STREET SYSTEM IN URBAN MOBILITY" (Study Supervisors: D. Christiansen, J. Benson, W. Ward, C. Lee, R. Machemehl)

2-8-87-1108 "TRAFFIC PATTERN ASSESSMENT AND ROAD USER DELAY COSTS RESULTING FROM ROADWAY CONSTRUCTION OPTIONS" (Study Supervisors: C. Dudek, R. Krammes, S. Levine)

- 2-18-88-1109 "EVALUATION OF OVERSIZE/OVERWEIGHT PERMIT POLICY & FEE SCHEDULE" (Study Supervisors: D. Middleton, A. Villarreal)
- 2-10-87-1110 "SUBAREA ANALYSIS USING MICROCOMPUTERS" (Study Supervisor: George B. Dresser)
- 3-18-87-1111 "CAPACITY IMPROVEMENTS FOR URBAN INTERSECTIONS" (Study Supervisors: C. E. Lee, R. B. Machemehl)
- 2-10-88-1112 "CORRIDOR ANALYSIS AUTOMATION" (Study Supervisor: G. Dresser)
- 2-18-87-1113 "EVALUATION OF MOTORIST INFORMATION REQUIREMENTS FOR TRANSITWAYS AND FREEWAY-TRANSITWAY INTERCHANGES" (Study Supervisor: W. R. McCasland)
- 2-8-87-1114 "CENTERLINE STRIPING AND WIDE-PAVED SHOULDERS ON TWO-LANE RURAL HIGHWAYS" (Study Supervisor: J. B. Rollins)
- 2-18-88-1115 "IMPLEMENTATION OF THE TEXAS VERSION OF THE HIGHWAY PERFORMANCE MONITORING SYSTEM" (Study Supervisors: J.L. Memmott, T. Scullion)
- 3-9-87-1116 "DEVELOPMENT OF RAPID TEST FOR QUALITY CONTROL IN HMAC" (Study Supervisors: R. J. Holmgreen, T. W. Kennedy)
- 3-9-87-1117 "GUIDELINES FOR PROPER USE OF SUPERPLASTICIZERS AND THE EFFECT OF RETEMPERING PRACTICES ON PERFORMANCE AND DURABILITY OF CONCRETE" (Study Supervisor: R. L. Carrasquillo)
- 3-6-86-1118 "THE EFFECTIVENESS OF MEMBRANE CURING COMPOUNDS FOR PORTLAND CEMENT CONCRETE PAVEMENTS" (Study Supervisors: A. H. Meyer, D. W. Fowler)
- 3-9-87-1119 "IMPROVED CONCRETE QUALITY CONTROL PROCEDURES INCLUDING THIRD-POINT LOADING" (Study Supervisor: R. L. Carrasquillo)
- 2-8-88-1120 "QUANTIFICATION OF LATENT TRAVEL DEMAND ON PROPOSED NEW EXPANDED URBAN FACILITIES" (Study Supervisor: C. Walters)
- 2-8-87-1121 "INVESTIGATION OF RUTTING IN ASPHALT CONCRETE PAVEMENTS" (Study Supervisors: J.W. Britton, R. L. Lytton)
- 2-18-88-1122 "GENERIC SMALL SUPPORT SYSTEM AND VALIDATION OF ACCEPTABLE SUPPORT PERFORMANCE" (Study Supervisors: J.R. Morgan, H.E. Ross)
- 2/3-18-87-1123
 "DEVELOPMENT OF NON-DESTRUCTIVE TEST PROCEDURES FOR ANALYZING STRUCTURAL CONDITIONS OF PAVEMENTS" (Study Supervisors: K. H. Stokoe, W. R. Hudson, J. M. Roesset, T. Scullion, R. F. Smith)

3-8-87-1124 "A STUDY OF THE INFLUENCE OF THE TEMPERATURE OF THE SUBSTRATE ON THE CONSTRUCTION OF THIN-BONDED PORTLAND CEMENT CONCRETE OVERLAYS" (Study Supervisors: A. H. Meyer, D. W. Fowler)

(State Funded)

2-8-87-1125 "GEOMETRIC DESIGN CONSIDERATION FOR RURAL ROADS" (Study Supervisors: D.B. Fambro, T. Urbanik)

3-5-87-1126 "DESIGN GUIDE FOR SHORT ANCHOR BOLTS" (Study Supervisors: R. E. Klinger, D. Polyzois, J. O. Jirsa)

3-5-87-1127 "DETAILING REINFORCEMENT IN CONCRETE STRUCTURES" (Study Supervisors: J. O. Jirsa, P. M. Ferguson)

3-5-87-1129 "BENT COLUMN ANALYSIS AND DESIGN" (Study Supervisors: C. P. Johnson, J. M. Roesset)

2-10-88-1131 "MEASURING AND MONITORING URBAN MOBILITY IN TEXAS" (Study Supervisor: T.J. Lomax)

2-10-88-1132 "A MODEL TO EVALUATE DHT LOAD ZONING POLICY ON THE FM SYSTEM" (Study Supervisor: A. Garcia-Diaz)

3-18-87-1133 "ANIMATED GRAPHICS FOR INTERSECTION" (Study Supervisor: C.E. Lee)

(State Funded)

2-18-86-1135 "PREVENTION OF FIRE ANT DAMAGE TO PREVENTION CONTROL" (Study Supervisors: N. Ayoub, S. Vinson)

1135-1 "A Survey of Fire Ant Infestation in Traffic Signal Systems" C.J. Messer, S.D. Vinson, G.A. Brouwer; November, 1986; 21 pp.

(State Funded)

2-10-86-1137 "BENEFITS OF RESEARCH" (Study Supervisor: W. F. McFarland)

3-8-88-1138 "MEDIANS WITH CONTINUOUS AND INTERMITTENT PERMITTED LEFT-TURN MOVEMENTS" (Study Supervisors: R. Machemehl, C.E. Lee)

PART I

2-10-86-1140 "EVALUATION OF LOW COST WIM ALTERNATIVE" (Study Supervisor: W. D. Cunagin)

8-18-87-1141 "CRACK IDENTIFICATION USING NON-CONTACT LASERS ON THE PROFILOMETER" (Study Supervisor: R. W. Walker)

PART I

(State Funded)

2-10-86-1142 "ANALYSIS OF THE TEXAS TRAFFIC-COUNTING PROGRAM" (Study Supervisor: W. Cunagin)

1-10-87-1143 "DEMONSTRATION OF THE USE OF THE UNIVERSAL PRODUCT CODE (UPC) FOR TRUCK IDENTIFICATION" (Study Supervisor: S. Wilhelm)

- 2-8-88-1144 "DEVELOPMENT OF ISO-FOOTCANDLE CURVES FOR HIGHWAY LIGHTING" (Study Supervisor: R. Zimmer)
- 2-18-88-1145 "AN ALTERNATIVE TO DELINEATORS" (Study Supervisors: R.A. Krammes, F. Creasey)
- 2-8-88-1147 "OPTIMIZATION OF GUARDFENCE DESIGN AND USE" (Study Supervisors: D. Sicking, H. Ross)
- 2-18-88-1148 "GUIDELINES FOR OPERATIONAL CONTROL OF DIAMOND INTERCHANGES" (Study Supervisor: C. Messer)
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- 3-6-88-1149 "INVESTIGATION OF HIGHWAY PROJECT CONSTRUCTABILITY IMPROVEMENT" (Study Supervisor: F. Hugo)
- 1-10-87-1150 "PRODUCT EVALUATION" (Study Supervisor: D. J. Norwood)
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- 2-10-87-1154 "DATA COLLECTION TECHNOLOGY AND SUPPORT" (Study Supervisor: W. Cunagin)
- 2-9-88-1155 "DESIGN AND MANUFACTURE OF SUPERIOR ASPHALT BINDERS" (Study Supervisor: J. Bullin)
- 2-18-88-1156 "ECONOMIC EFFECTIVENESS OF REJUVENATING AGENTS AND DILUTED ASPHALT SEALS" (Study Supervisors: C. Adams, J. Button)
- 2-9-88-1157 "GUIDELINES AND SPECIFICATIONS FOR ASPHALT EMULSION SEAL COATS" (Study Supervisors: C. Adams, J. Button)
- 3-9-88-1158 "IMPACT OF AGGREGATE GRADATION AND TYPE ON ASPHALT CONCRETE MIXTURE CHARACTERISTICS AND PAVEMENT PERFORMANCE" (Study Supervisors: R.J. Holmgreen, T.W. Kennedy)
- 2-8-88-1159 "IN-PLACE PROPERTIES OF BASE COURSE AND SUBGRADES WITH NON-DESTRUCTIVE TESTING" (Study Supervisors: R.E. Smith, T. Scullion)
- 3-9-88-1160 "EVALUATION OF A SIMPLIFIED PROCEDURE FOR DETERMINING MAXIMUM SPECIFIC GRAVITY OF ASPHALTIC CONCRETE MIXTURES" (Study Supervisors: R. Holmgreen, T. Kennedy)
- 2-10/11/8-88/0-1165 "MOISTURE MOVEMENT UNDER THE PAVEMENT STRUCTURE" (Study Supervisors: R. Lytton, M. Picornell, W. Wray)
- 3-8-88-1167 "DEVELOP SMOOTHNESS SPECIFICATIONS FOR RIGID AND FLEXIBLE PAVEMENTS" (Study Supervisors: W.R. Hudson, W. Uddin)

- 3-8-88-1168 "DEVELOPMENT OF END-RESULT ACCEPTANCE SPECIFICATIONS FOR HMAC" (Study Supervisors: T. Kennedy, R. Holmgreen)
- 3-8-88-1169 "CONCRETE PAVEMENT DESIGN UPDATE" (Study Supervisors: W.R. Hudson, B.F. McCullough)
- 2/3-9-88-1170
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- 2-5-88-1171 "CAPACITY OF STAR-HANGAR ANCHORS" (Study Supervisor: R. James)
- 2-8-88-1172 "IMPROVEMENTS IN SPECIALLY STRESSED BITUMINOUS PAVEMENTS" (Study Supervisor: J. Button)
- 2-8-88-1173 "SUBSURFACE DRAINAGE DESIGN FOR NEW PAVEMENTS AND REHABILITATION OF POORLY DRAINED PAVEMENT STRUCTURES" (Study Supervisors: W. Crockford, D. Little)
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- 2-5-88-1178 "DESIGN OF CEMENT STABILIZED SOIL RETAINING WALLS WITH CONCRETE PANEL FACING" (Study Supervisors: D.V. Morris, W.W. Crockford, J.L. Briaud)
- 2-5-88-1179 "CRASH TEST OF MODIFIED C-202 BRIDGE RAIL" (Study Supervisors: T. Hirsch, K. Mak)
- 3-5-88-1180 "WALL THICKNESS CRITERIA FOR HOLLOW PIERS AND PYLONS" (Study Supervisor: J. Breen)
- 3-5-88-1181 "BOND AND ANCHORAGE OF EPOXY-COATED REINFORCEMENT" (Study Supervisor: J. Jirsa)
- 2-5-88-1182 "EVALUATION OF FACTORS AFFECTING SLABS DUE TO LOCALIZED POST-TENSIONED FORCES" (Study Supervisors: J. Noel, P. Roschke)
- 2-5-88-1183 "USER-ORIENTED ANALYSIS PACKAGES FOR BRIDGES" (Study Supervisor: P. Roschke)
- 2-5-88-1185 "AESTHETICALLY PLEASING BRIDGE RAILS" (Study Supervisors: T. Hirsch, W. Beason)
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- 2-10-86-1186 "ORIGIN-DESTINATION STUDY CONCEPTS: AUSTIN/SAN ANTONIO" (Study Supervisors: R.W. Stokes, T. Chira-Chavala)
- 1186-1 "Study Design for Austin/San Antonio Origin-Destination Study" R.W. Stokes, T. Chira-Chavala; March, 1987; 100 pp.

(State Funded)

- 2-16-87-1187 "PUBLIC ATTITUDE SURVEY AND ANALYSIS OF SDHPT ACTIVITIES" (Study Supervisors: D. Burke, K.N. Womack)
- 3-8-88-1190 "TIRE CONTACT PRESSURE DISTRIBUTORS" (Study Supervisors: W. Hudson, K. Marshek, C. Saraf)
- 2-15-88-1191 "USE OF HIGHWAY RIGHTS-OF-WAY BY ROADSIDE BUSINESSES AND ITINERANT MERCHANTS" (Study Supervisor: J.T. Lamkin)
- 2-1D-87-1192 "EVALUATION OF THE IMPACT OF THE ACCIDENT AT I-610 AND SH 225 ON MARCH 29, 1982" (Study Supervisor: W.F. McFarland)
- 2-10-88-1193 "AN ANALYSIS OF COMMUTING PATTERNS IN LARGE TEXAS URBAN AREAS" (Study Supervisors: T.J. Lomax, D.L. Christiansen)
- 3-10-88-1199 "LIBRARY & TECHNOLOGY TRANSFER SUPPORT OF COOPERATIVE RESEARCH PROGRAM" (Study Supervisor: F. McCullough)

PART VII

Listing of Special Studies (SS)

- SS 1.0 "Deflection Evaluation of Existing Pavement Structures Proposed for Use on IH-37 in District 16" B.F. McCullough, J.L. Brown; March, 1966; 32 pp.
- SS 1.1 "Survey of Structural Failures in a Continuously Reinforced Concrete Pavement" J.L. Brown, L.J. Buttler, W.P. Ezzell; October, 1969; 42 pp.
- SS 1.2 "Sensitivity Study of a Design System for Determining Thickness of Asphaltic Concrete Overlay on Rigid Highway Pavement" L.J. Buttler; January, 1971; 149 pp.
- SS 2.0 "Estimating the Distribution of Axle Weights for Selected Parameters" K.W. Heathington, P.R. Tutt; January, 1966; 93 pp.
- SS 3.0 "Investigation of Pavement Failures on IH-10 in District 13" B.F. McCullough, H.J. Treybig; April, 1966; 67 pp.
- SS 3.1 "Investigation of Pavement Failures on IH-10 in District 20" B.F. McCullough, H.J. Treybig; April, 1966; 18 pp.
- SS 4.0 "Salvaging Old Pavements by Resurfacing" N.A. Billingsley, Jr.; July, 1966; 17 pp.
- SS 5.0 "Traffic Volume Analysis of Urban Freeways" K.W. Heathington, P.R. Tutt; September, 1966; 122 pp.
- SS 5.1 "A New Technique for Capacity Analysis of Rural Two-Lane Highways" R.M. Cardwell; November, 1971; 23 pp.
- SS 5.2 "Recurrent Congestion on the Fort Worth West Freeway: Its Causes and Remedies" G.K. Trietsch; December, 1974; 61 pp.
- SS 5.3 "Traffic Handling Around Maintenance Activities on Freeways" R.G. Biggs; July, 1975; 12 pp.
- SS 5.4 "Noise Study of a Two Level Freeway" R.C. Rutland; April, 1979; 27 pp.
- SS 6.0 "Evaluation of Asphalt Density Gauge and Compaction of Bituminous Pavements" H. Hardy, C.W. Baxter; July, 1967; 20 pp.
- SS 7.0 "Repair of Continuously Reinforced Concrete Pavement" H.J. Treybig; August, 1969; 26 pp.
- SS 8.0 "Report on Concrete Pavement Grooving In Texas" J.F. Nixon; August, 1968; 14 pp.
- SS 9.0 "Performance of Metal Reinforced Bituminous Overlays in Texas" L.J. Buttler; August, 1968; 86 pp.

- SS 9.0 "Supplement to Report SS 9.0 - Performance Of Metal Supplement Reinforced Bituminous Overlays in Texas" June, 1971; 51 pp.
- SS 9.1 "Fibrous Concrete Overlay" T.C. Dartez, R.W. Hawn; October, 1973; 19 pp. (A 1979 update is included)
- SS 10.1 "Recent Experiences With Cement Stabilized Base" M.L. Steinberg; December, 1970; 21 pp.
- SS 10.2 "A Review of Construction Practices to Control Heave in Highway Pavement" L.J. Buttler; November, 1973; 29 pp.
- SS 10.3 "Energy Savings in Construction and the Control of Swelling Soils" M.L. Steinberg, September, 1978; 13 pp.
- SS 11.1 "Experimental Test of SP-3" December, 1968; 21 pp.
- SS 11.2 "The Initial Calibration of the Three Maintenance Skid Trailers" May, 1968; 14 pp.
- SS 11.3 "Second Calibration of the Skid Test Trailers" December, 1968; 19 pp.
- SS 11.4 "Report I, May - September 1968, Maintenance Operations of the Skid Trailers" J.P. Underwood; January, 1969; 54 pp.
- SS 11.5 "Maintenance Operations of the Skid Test Trailers (September 1968 - May 1969)" J.P. Underwood; August, 1969; 71 pp.
- SS 11.6 "Maintenance Operations of the Skid Test Trailers (June 1969 - May 1970)" J.P. Underwood; August, 1970; 73 pp.
- SS 11.7 "An Evaluation of the NCSA Hydrochloric Acid Leaching Procedure" E. Garana; February, 1970; 118 pp.
- SS 11.8 "Third Calibration of the Skid Test Trailer" K.D. Hankins, B. Hart, B. Teel, B. Braddock; March, 1970; 20 pp.
- SS 11.9 "Three State Skid Test Trailer Correlation Held at Texas Transportation Institute" K.D. Hankins; March, 1970; 21 pp.
- SS 11.10 "Fourth Calibration of the Skid Test Trailers" A.B. Hubbard, B. Hart, B. Teel, B. Braddock; December, 1970; 19 pp.
- SS 11.11 "How to Provide Needed Skid Resistance - State of the Art - State of the Practice" K.D. Hankins; January, 1975; 32 pp.
- SS 12.1 "Driver Communication Through Roadway Delineation" P.R. Tutt, J.F. Nixon; August, 1969; 20 pp.
- SS 12.2 "Roadside Design Guidelines" P.R. Tutt, J.F. Nixon; August, 1969; 25 pp.
- SS 12.4 "Highway Safety - How Far Do We Go?" J.F. Nixon; July, 1981; 9 pp.

- SS 13.1 "Sensitivity Analysis of the Extended AASHO Rigid Pavement Design Equation" H.J. Treybig; August, 1979; 52 pp.
- SS 14.1 "Experimental Joint Sealing of Concrete Pavement" W.N. Dudley; June, 1970; 19 pp.
- SS 15.1 "Experience of District 11 in the Use of Lightweight Asphaltic Concrete" May, 1970; 103 pp.
- SS 15.2 "Design and Construction of Asphaltic Concrete Pavement Using Volumetric Design Specifications" C.D. Zeigler; January, 1971; 185 pp.
- SS 15.3 "Investigation of the Performance Characteristics of a Hot Mix Limestone Rock Asphaltic Concrete" F.L. Oliver; May, 1971; 5 pp.
- SS 15.4 "Volumetric Design of Asphaltic Concrete Pavement" C.D. Zeigler; September, 1971; 52 pp.
- SS 15.5 "Experience of District 11 in the Use of Plant Mix Seal Courses" J.L. Beaird; February, 1972; 21 pp.
- SS 15.6 "Design of Hot Mix Asphaltic Concrete by the Weight Ratio Method" C.H. Little; 6 pp.
- SS 15.7 "Guidelines for Controlling a Hot Mix Asphaltic Concrete Design" C.H. Little; 14 pp.
- SS 15.8 "The Dryer-Drum-Mixer Process for Producing Asphalt Construction" C.H. Little; October, 1974; 19 pp.
- SS 15.10 "Traveling Plant Open Graded Surface Course" W.N. Dudley; December, 1974; 14 pp.
- SS 15.11 "A Report on Accidents on Test Sections of a Plant Mix Seal Overlay on Fort Worth Freeways" G.K. Trietsch; October; 1974; 7 pp.
- SS 15.12 "Investigation of Deteriorated Hot Mix Asphaltic Concrete Resulting in a Modified Soundness Test for Aggregates" V.D. McCall; January, 1975; 25 pp.
- SS 15.13 "Asphalt Surface Treatments" L.E. Schulz, B.R. Russell; October, 1972; 22 pp.
- SS 15.14 "Maintenance Pavement Crack Repair Using Asphalt Roll-Roofing Material" T.R. Kennedy; May, 1979; 10 pp.
- SS 15.15 "In-Place Slurry Seal" B.R. Lindley; October, 1982; 4 pp.
- SS 15.16 "Recycling - A Positive Approach" B.R. Lindley; October, 1982; 19 pp.
- SS 16.1 "Research Implementation in Texas" G.E. Rice, Jr.; March, 1971; 31 pp.

- SS 16.2 "Research and Development Accomplishments" September, 1971; 132 pp.
- SS 17.1 "Determination of Asphalt and Moisture Content by the Nuclear Method" J.R. White; August, 1971; 132 pp.
- SS 18.0 "An Approach to Maintenance Management" B. Contreras; January, 1976; 10 pp.
- SS 18.1 "Maintenance Rating System: Data Plot" K.D. Hankins; April, 1976; 67 pp. (Computer Programs FLEXRATE, RIGRATE, INFOCOMB)
- SS 19.1 "A Study of On-Street Parking Arrangements" C.D. Zeigler; August, 1971; 44 pp.
- SS 20.0 "Sprinkle Treatment for Achieving Skid Resistance Pavement in Texas" R.L. Tyler, T.R. Kennedy; August, 1974; 11 pp.
- SS 20.1 "Sprinkle Treatment of Asphaltic Concrete in England or Chipping Asphalt" J.F. Nixon; August, 1976; 24 pp.
- SS 20.2 "Sprinkle Treatment of Both Asphaltic and Portland Cement Concrete in Belgium" J.F. Nixon; August, 1976; 36 pp.
- SS 20.3 "Sprinkle Mix Experiences in the State of Virginia" T.R. Kennedy; September, 1976; 30 pp.
- SS 21.1 "No Joint Cast-In-Place Concrete Pipe" March, 1977; 14 pp.
- SS 22.1 "Z-Pattern High-Mast Freeway Illumination" H.D. Jones; January, 1980; 10 pp.
- SS 22.2 "Sign Lights, Sign Backgrounds, Low-Pressure and High-Pressure Lighting" H.D. Jones; 1980; 9 pp.
- SS 22.3 "Problems Encountered in Three High-Pressure Sodium Highway Lighting Projects in Texas" H.D. Jones; November, 1980; 86 pp.
- SS 23.1 "Project Information Newsletter: Improved Public Relations Technique" J. Light; June, 1982; 16 pp.
- SS 24.1 "The Effects of Lime as an Anti-Stripping Agent" N. Turnham; February, 1983; 41 pp.
- SS 25.1 "A Study of Drilled Shafts Constructed by the Slurry Displacement Method" H.D. Butler; February, 1973; 81 pp.
- SS 26.0 "Asphalt Pavement Rutting in the Western States: Two Texas Lectures and the WASHTO Report" P. Krugler, J. Mounce, Beteson, Hanson, Jones, Maykuth, Rask, Tea, Warburton; January, 1985; 97 pp.
- SS 27.0 "The Oval Shaped Raised Pavement Marker" H.D. Jones; February, 1987; 16 pp.

PART VIII

Listing of R.P. Studies (Old Numbering System)

- RP-2(1) "The Traffic Pattern of Ginned Cotton, Cottonseed, and Cottonseed Products Transported in Texas by Railway, Highway and Waterway for 1952-1953" D.R. Davis; December, 1956; 33 pp.
- RP(2) "Characteristics of Highway Freight Transportation in Texas" J.N. Slater; January, 1957; 68 pp.
- RP(3) "A Study of the Highway Distribution of Gasoline" D.R. Davis; October, 1957; 27 pp.
- RP-2(4) "Transportation Uses and Preferences of the Texas Food Industry" C.V. Wootan; February, 1958; 70 pp.
- RP-2(5) "A Statistical Presentation of Transportation Uses and References in the Texas Food Industry" H.G. Meuth; April, 1958; 37 pp.
- RP-2(6) "Private Trucking Costs and Records" C.R. Haning; May, 1958; 43 pp.
- RP-3(1) "Preliminary Report on Project RP-3: Improvement of Asphaltic Materials" B.M. Gallaway; November, 1958; 15 pp.
- RP-3(2) "Final Report on Project RP-3: Improvement of Asphaltic Materials" R.A. Jimenez, B.M. Gallaway; February, 1961; 36 pp.
- RP-4(1) "A Comprehensive Study of Factors Influencing the Load Carrying Capacities of Drilled and Cast-in Place Concrete Piles - Part I" L.A. DuBose; July, 1956; 67 pp.
- RP-4(2) "A Comprehensive Study of Factors Influencing the Load Carrying Capacities of Drilled and Cast-in Place Concrete Piles - Part II" L.A. DuBose; October, 1956; 41 pp.
- RP-5(1) "Non-Destructive Testing of Welds in Structural Steel" D.F. Weekes, B.F.K. Mullins; September, 1954; 95 pp.
- RP-5(2) "Effect of Lane Width on Traffic Behavior for Two-Lane Highways" F.H. Scrivner; August, 1955; 41 pp.
- RP-6(1) "A Preliminary Report on Some Factors Affecting the Life of Steel Pilings in the Texas Gulf Coast Area" March, 1955; 66 pp.
- RP-6(1) "A Preliminary Report on Some Factors Affecting the Life of Steel Pilings in the Texas Gulf Coast Area" March, 1955; 66 pp.
- RP-6(2) "A Report on Some Factors Affecting the Life of Steel Piling in the Texas Gulf Coast Area" B.M. Gallaway; October, 1955; 53 pp.
- RP-7(1) "Preliminary Report on Mix Design and Field Practice for Structural Lightweight Concrete" February, 1956; 6 pp.

- RP-7(2) "Creep and Shrinkage in Lightweight Concrete" T.R. Jones, Jr., T.J. Hirsch; 1959; 15 pp.
- RP-7(3) "Properties of Lightweight Concrete Related to Prestressing" T.R. Jones, Jr., H.K. Stephenson; 12 pp.
- RP-7(4) "Proportioning, Control and Field Practice for Lightweight Concrete" T.R. Jones, Jr., H.K. Stephenson; 1957; 9 pp.
- RP-7(5) "The Physical Properties of Structural Quality Lightweight Aggregate Concrete" T.R. Jones, Jr., T.J. Hirsch, H.K. Stephenson; August, 1959; 46 pp.
- RP-8(1) "A Study of Certain Elastic and Plastic Strains Induced in Flexible Pavement Systems by Repetitive Wheel Loads" K.T. Meyer; January, 1959; 115 pp.
- RP-9(1) "The Correlation of Design and Operational Characteristics of Expressways in Texas" C.J. Keese, R.H. Schleider; January, 1957; 40 pp.
- RP-9(2) "The Correlation of Design and Operational Characteristics of Expressways in Texas" July, 1956; 40 pp.
- RP-10(1) "Elastomeric Pads as Bearings for Steel Beams" H.E. Fairbanks; December, 1961; 13 pp.
- RP-10(2) "Full Scale Field Tests of a Prestressed Composite I-Beam Bridge" J.M. Graham; August, 1959; 41 pp.
- RP-12(1) "An Evaluation of Trinity River Aggregates of Marginal Quality For Use in Portland Cement Concrete Pavements" T.R. Jones, Jr., T.J. Hirsch; June, 1959; 37 pp.
- RP-14(1) "Interim Report on Project RP-14 - Right-of-Way Acquisition Studies" October, 1959; 64 pp.
- RP-16(1) "Freeway Traffic Accident Analysis and Safety Study" B.F.K. Mullins, C.J. Keese; January, 1961; 82 pp.
- RP-16(2) "Driver Behavior and Its Relation to Freeway Entrance Ramp Design" F.H. Edwards; 48 pp.
- RP-16(3) "Freeway Ramps" C. Pinnell, C.J. Keese; 34 pp.
- RP-16(4) "Design and Signalization of High-Type Intersection" D.R. Drew, C. Pinnell; August, 1961; 75 pp.
- RP-16(5) "Design and Operation of Diamond Interchanges" C. Pinnell, D.G. Cappelle; August, 1961; 74 pp.
- RP-16(6) "Capacity Study of Signalized Diamond Interchange" D.G. Cappell, C. Pinnell; 1961; 25 pp.

- RP-16(7) "Freeway Traffic Accident Analysis and Safety Study" June, 1958; 28 pp.
- RP-16(8) "Driver Requirements in Freeway Entrance Ramp Design" C. Pinnell; December, 1960; 7 pp.
- RP-16(9) "A Study of Freeway Traffic Operation" C.J. Reese, C. Pinnell, W.R. McCasland; 59 pp.
- RP-16(10) "Effect of Freeway Medians on Traffic Behavior" C.J. Keese, C. Pinnell; 18 pp.
- RP-17(1) "Vehicle Speed and Placement Survey on Two Lane Rural Highways" March, 1957; 49 pp.
- RP-17(2) "Vehicle Speed and Placement Survey on Two Lane Rural Bridges" June, 1957; 38 pp.
- RP-17(3) "Freeway Bridge Vehicle Speed and Placement Survey" July, 1957; 20 pp.
- RP-17(4) "A Study of Factors Influencing Traffic Speeds" N.J. Rowan, J. Keese; September, 1961; 77 pp.
- RP-19(1) "A Report on the Physical Properties of Concrete at Early Ages" T.R. Jones, Jr., T.J. Hirsch; August, 1961; 69 pp.
- RP-19(2) "A Report on the Curing of Portland Cement Concrete" T.R. Jones, Jr., T.J. Hirsch; August, 1960; 42 pp.
- RP-21(1) "Development of Traffic Survey Device" E.M. Roots, Jr., W.F. Mundkowsky; May, 1961; 11 pp.
- RP-21(2) "The Design and Construction of an Infrared Detector for Use with a Highway Traffic Survey System" W.F. Mundkowsky; May, 1961; 70 pp.
- RP-23(1) "Effects of Repetitive Stressing on the Strength and Deformation of an Angular, Coarse Sand" L.A. Dillon; January, 1962; 58 pp.
- RP-25(1) "Pile-Driving Analysis by the Wave Equation" C.H. Samson, Jr.; May, 1976; 71 pp.
- RP-25(2) "Driving Stress in Prestressed Concrete Piles" T.J. Hirsch, C.H. Samson, Jr., L.L. Lowery, Jr.; 41 pp.
- RP-25(3) "Computer Study of Dynamic Behavior of Piling" C.H. Samson, Jr., T.J. Hirsch, L.L. Lowery, Jr.; 45 pp.
- RP-27(1) "Stress in Long Prestressed Concrete Piles During Driving" T.J. Hirsch; September, 1962; 82 pp.

PART IX

Listing of Studies Numbered by Year of Issue (NY) (Old Numbering System)

- 62-1 "Determining and Evaluating the Stresses of an In-Service Continuously Reinforced Concrete Pavement" M.D. Shelby, B.F. McCullough; 1962; 96 pp.
- 62-2 "Comparison of Concrete Pavement Load-Stresses at AASHO Road Test with Previous Work" W.R. Hudson; 1963; 117 pp.
- 62-3 "Evaluation of Frontage Roads as an Element of Urban Freeway Design" C. Pinnell, P.R. Tutt; January, 1963; 43 pp.
- 62-4 "The Early Service Life Characteristics of a Continuously Reinforced Concrete Pavement in Comal County, Texas" B.F. McCullough; 1962; 93 pp.
- 63-2 "Acceptable Deviation in Density Control of Flexible Base" C.J. Derdeyn, J.F. Todd; July, 1963; 15 pp.
- 63-3 "A New Method of Traffic Evaluation for Use in Pavement Design" C.J. Derdeyn; January, 1964; 30 pp.
- 64-1 "An Extension of Rigid Pavement Design Methods" W.R. Hudson, B.F. McCullough; 1964; 50 pp.

PART X

Listing of Departmental Information Exchange Reports

- DHT - 1 "History of the Texas Highway Department in Hidalgo County" J.F. Snyder; May, 1987; 51 pp.
- DHT - 2 "Evaluation of the Troxler Model 4640, Thin Layer Density Gauge" M.C. Hogan; June, 1987; 30 pp.
- DHT - 3 "Unburned Fuels in Drum-Mix Asphalt Plants" S. Wilhelm; August, 1987
- DHT - 4 "Pavement Recycling" S. Wilhelm; August, 1987

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